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Family Relationships in Prediction of Ageing

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A B S T R A C T

This paper presents a study of the predictive value of family relationships from genealogies, and its impact on the delayed ageing. The study comprised adult population over 18 years of age of two urban family practices (N = 1700). The study sample included all patients (total = 581; 57.3% female, 42.7% male) having sought medical assistance of any kind in the period of three consecutive months. The study was performed in two stages. The selection of patients according to the results of the 25th and 75th percentiles of the memory component analysis was done in stage I. The comparison of life history and events across a genealogy in the groups of the 25th and 75th percentile memory deficit was done in stage II. The method used in stage I was a psychological test – Pictures of Object Test (POT) to test the memory deficit. In stage II, personal life histories and description of the genealogies were obtained by individuals' associations expressed in the form of a free text which was then analyzed statistically (SPAD-T), and the results were correlated to data read on the developed genogram. The statistical text analysis of life-events recall and the correlation across a genealogy showed a difference in the patterns of family relationships across a genealogy in the two study groups, and their predictive value for prevention in family practice.

Introduction

Almost everybody, regardless of age, is emotionally and physically dependent on relationships with other people. Those others are, in the first place, family members but also friends, colleagues from work and neighbours who gain respect and appreciation once the relationship has developed. Relationships are dynamic influencing the degree of development at a certain age. Although relationships are important to any age, they are of vital importance to old age when we cope with frequent losses of different kind: death of a spouse, retirement, health im-

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pairments, etc. It all burdens our emotional and financial state. Strong family relationships generate support and assistance to the elderly in facing critical life changes[1]. A family system is more than just a sum of present or fictitious kinship. The concept of a family includes interactions, functional and organizational models striving for an efficient integration of family members' needs and expectations of a society. The role of a family and the way it functions differ from culture to culture, from society to society. It is extremely important to know the context of a family from physical, social, cultural and emotional aspects[2]. It should be noted that the impact is two-way. Family background and family impacts are not mere accidental factors, and should not be considered superficially in family practice but as important elements for long-term comprehensive patient health care. Family history has long been the key component in medical records because it is an abundant source of valuable information about the family background. However, these data have frequently been handled superficially, particularly when the physician asks the patient about his hereditary or other health problems in the family. Such a ritual questioning is usually a plain physician's recitation of diseases such as tuberculosis, diabetes, etc. requiring the patient's YES or NO answer, and revealing information of limited usefulness. A resourceful diagnostician would dig more thoroughly through the patient's past hoping to find hardly traceable tendencies or links among the important events in the past and the current problem[3].

Each primary family member is a reflection of his genetic determination, subjective and objective relations towards himself, and his close and extended family environments. The very awareness of aging, most frequently expressed by impairment of physical and mental functions, might cause severe mental and, later on, also physical changes. The intensity of these changes is not only the result of the sum of these changes and impairments but depends in the first place on the integral ability to experience and compensate them. Psychophysical abilities in involution are more dependent on subjective perception of health and illness rather than on objective, medically determined changes[4]. Involution depends primarily on previous life events and is not conditioned exclusively by chronological factors. It is a period of intense restructuring, with personality playing an important role. Inward interest and outward aggression are on the increase. A reduced professional and social activity results in weaker sublimation of aggression thus producing fear, retreat, depression or paranoia. It is harder to adapt, so the defense mechanisms used were acquired either at an earlier age or in the family or formed consciously by life experience.

There are insights into aging as a process related to an individual, an organ, a tissue, a cell, or a molecule. Less explored are the impacts on aging within a family, and less still within several generations of a family. Genealogical level is one of the ways to enter the family system processes over time, and aging within that system. It delineates the interrelations in several consecutive genealogies. Beside genetic, it traces also cultural, environmental and emotional elements across generations[5].

The main aim of the study is to show that the knowledge of family relationships across several consecutive generations has a predictive value for delayed aging in individual patients.

Specific objectives of the study were:

- To determine the distribution of mental impairment in examinees;

- To classify the examinees into two separate groups (L, U);
- To explore the examinees' life histories by parameters such as childhood, primary and their own families, and the inner relationships;
- To compare the obtained results, and to determine the characteristic elements for the two groups;
- To formulate a typology of family relationships as an operational tool for recognition of and intervention in the aging process.

Patients and Methods

Patients

The study comprised adults over 18 years of age from two urban family practices (N = 1700). All persons were selected (total = 581. 57.3% females and 42.7% males) who had asked for medical assistance of any kind during three consecutive months in 1996. The study excluded acute and severe patients who could not endure the interviewing process.

The study was performed in two stages. The selection of patients according to the results of the 25th and 75th percentiles (L (lower) and U (upper) groups) of the memory component analysis was done in stage I. The comparison of life history and events within primary and one's own family in the two study groups was done in stage II.

Methods in stage I

A psychological test – Pictures of Object Test (POT) was used to test the memory deficit. It consisted of nine questions to measure the time needed for recognition of a certain pattern or the mistake in memorizing the shown patterns (pictures, numbers). The statistical analysis of the obtained results led to stage II.

Methods in stage II

According to the results obtained by statistical analysis of the initial memory test, the examinees were selected by the 25th and 75th percentile and classified into two groups (L and U). Both groups were asked for recall of events in childhood within primary and their own families.

Statistical analysis

The obtained results were analyzed statistically by SPAD-T software for text analysis, and by genealogy analysis using a heredogram.

Statistical text analysis

Basic sociodemographic data were collected by a structured questionnaire. Personal life histories and description of the genealogy were obtained by a free-association text which was then analyzed statistically (SPAD-T), and the results were correlated to the data read on the developed genogram.

Recall on genealogical ancestors was supplemented by recall on the patient's life. The recall on the patient's life was divided into 3 variables: 1) Childhood, 2) Primary family, and 3) Patient's own family. The statistical text analysis was done for each variable separately, and characteristic responses were analyzed in their entirety and interpreted according to qualitative assessments. As stated in the literature[6], words are, especially when incorporated into events or narratives, full of concrete live meaning very often providing far more convincing evidence to the readers, other researchers, policy makers and practitioners, than pages and pages of numbers. Data for qualitative analysis are collected in different ways (observation, interview, documentation extraction, and note taking) and usually made ready for use (typing, dictation, transcription) but still containing words most often in the form of a long text. This

study used all the above mentioned methods. Since the beginning of data collection, qualitative analysis was the very beginning of decision-making, i.e. decisions on whether data were regularity, a pattern, an error, or an assumption. The conclusions were verified analytically.

Verification is a short temporary »second thought« passing through the analyst's mind while writing and then returning back to notes, or a temporary one but elaborated with arguments among the colleagues who would develop »non-subjective consensus«, or by incorporating these data into a set of other data. In short, the meaning derived from data should be tested to its reliability, authenticity and validity. This study used the combination of these verification methods.

Results

Statistical text analysis
(Personal life experience)

A »life story« was obtained by written text from 102 examinees who had a family genogram (61 examinees with poor memory test, and 49 examinees with better results in initial selecting test).

The sample consisted of (Table 1) 77 female and 32 male examinees aged 30 to 65 years of age. Group L consisted of 18 (30%) male and 43 (70%) female examinees, group U of 15 (30%) male and 34 (70%) female examinees ($p > 0.05$). A statistically significant difference was not observed between the two groups either by sex, or by age (Tables 1–2).

Table 3 shows the results obtained by the correlation of five characteristic associations with childhood and events from childhood, selected by the statistical text analysis obtained from L and U groups examinees.

In all five responses, about equally described were certain traumas, fears, disagreements in the family, alcohol abuse, illnesses, and guilty feeling originating from early young age. For the first examinee from L group, it was the war, burned house, killed uncle, the camp, being a hired hand in rich estates, fear of ghosts, hiding in the barn, drunken goody Julka on hay-stock with Dad, Dad beating Mum. The second examinee remembered frequent changes of residence, hospital, removal of tonsils, taking care of a minor sister who wandered to another part of the city instead of home and came in front of a hospital so that a sister would throw her a fruit syrup and choco-

TABLE 1
EXAMINEES BY SEX

Sex	Groups		
	L(%)		U(%)
Male	29.5	=	30.6
Female	70.5	=	69.4

TABLE 2
EXAMINEES BY AGE

Groups	X±SD	
L	50.4±8.4	t = 2.72
U	48.2±8.5	df = 108
		p > 0.05

TABLE 3
FIVE CHARACTERISTIC RESPONSES BY GROUPS L AND U EXAMINEES (CHILDHOOD)

Trauma from childhood	L = U
Poverty	L > U
Family disagreements	L = U
Alcohol abuse	L = U
Fears	L > U
Illness	L = U
Guilty feeling	L = U
Games	L = U
Nice life	L < U
Illusions	L > U

late candies. The third examinee recalled events from World War II, uniforms, caps, foreign language, diarrhea, change of residence, illness of his favorite grandfather. The fourth examinee remembered when she was two-and-a-half years old and fell out of the window three-and-a-half meters high, a bump in the head, hospital. The fifth examinee's recall of that period covered his mother's divorce from his father, kindergarten, taking care of his little brother, constant blame on him because of his little brother, beating.

The events remembered by U group examinees were traumas from that period. The first examinee revealed his experience in a disastrous earthquake when he was six years old and lived in a tent. The second examinee underwent tonsillectomy when he was five years old because his brother had to undergo that operation and it was cheaper if they did it together. The third examinee was born in the family with an alcoholic who went to Germany early in her childhood and never sent out a word. The fourth examinee mentioned painful memories of her brother's birth and asking her mother to breastfeed her as well, which was declined. The fifth examinee mentioned a young boy all in blood, and his fear of the drunken neighbor.

In their responses, L group examinees mentioned more often poverty and fears from childhood than the examinees with well preserved memory shown in the initial test. Besides, when describing events, they more often used illusions than real events. To the contrary, examinees with well-preserved memory remembered more often nice things from childhood.

The results obtained from the statistical text analysis on examinees' primary families are shown in Table 4. Characteristic responses in L group reflected persons from poor rural families. They all lived in a cottage, a small house, except for the last examinee showing a somewhat higher standard. All of them lived in a family with many children who even slept in the parents' bed. Not one examinee mentioned cheerful or happy memories from their parents' home. All of them mentioned minor or great traumas due to poverty, illness or death of a family member. (Dad is at first in good health, then got a hernia, feels ill, loses weight, he was a heavy smoker; no clothes, expensive to buy, father had kidney stones and two to three times passed out for no reason… Granny died, Mum was left alone… the parents were working, tolerant …).

TABLE 4
FIVE CHARACTERISTIC RESPONSES BY GROUPS L AND U EXAMINEES (PRIMARY FAMILY)

Traumas	L > U
Poverty	L > U
Catholic family and customs	L = U
Stern and industrious family	L < U
Authority in the family	L < U
Strong family membership	L < U
Emphasis on exceptional love	L > U
Emphasis on honesty and respect	L < U
Illness	L > U

Characteristic respondents from group U came from middle-income working families. Usually, these were classical, stern patriarchal families setting a high value on work, order and obedience imposed by the head of the family. Family relationships were upright, of mutual respect for one's own and other people's imperfections, and there were weaker or stronger rivalry indications most often among brothers. (I noticed some illnesses, my sister was a little depressed… the father showing authority, he inflicted heavy damage on my brother his favorite son… I felt a difference in the upbringing be-

tween me and my brother…) The memories stayed within the framework of illness, death or an injustice done to them; beside a strong family membership there were realistic perceptions of the parents' home family.

Table 5 shows the correlation results of the obtained data for the period of starting groups L and U examinees' own families. The group of examinees showing poorer results in the initial test (L) stressed in their memories more often lack of understanding with their own children and parents interfering in their marriage. Illnesses in the family were badly endured, and the whole situation lead to disappointments. The responses showed that examinees tried to achieve their own unaccomplished ambitions through children thus creating additional disappointment. The group of examinees with well-preserved memory in the initial test (U) most often solved the problems in their family by conversation seeking rational solutions. The parents were present in their stories as an additional assistance in raising children and in housework.

In creating their own families, four out of five characteristic responses of L group examinees mentioned bad marriage, while the fifth one's was saved by a compromise and joint care of children. The first examinee's marriage revealed a series of misunderstandings between the spouses – jealousy, harassment, child abuse, accusations, enforcement, and torture during pregnancy. Frequent were changes of residence to different climates; changes of colleges and part-time but never completed studies; a trip to Germany to buy a new car or for a language course; enrolment of 5- and 6-year-olds to school, 15-year-olds to Music Academy, rhythmic classes, music classes, folklore groups; a wonderful son, lonely daughter, no friends, pregnant daughter giving birth to a little girl. The second examinee stated he and his wife had quarreled even before getting married. The reconciliation mediator was his mother. She was pregnant so they decided to get married. Immediately afterwards the husband went to army and never came back to their home. Soon afterwards they divorced. The third examinee's wedding was beautiful with a lot of guests. Children were born; the first one remained at grandmother's and the second was born in the new flat. Even then the children were looked after by grandmother, an aunt, a cousin, another aunt and others. The son had convulsions and high fever; the daughter was epileptic and schizophrenic. The fourth examinee's marriage followed after learning about pregnancy. Two more pregnancies followed afterwards. All the energy in the family focused on children. Fear in the war. Soon afterwards missing her period, heart problems, heart thumping, and high blood pressure. Her husband also developed hypertension and high sugar in blood. The last L group examinee's marriage was burdened by compromise but oriented towards raising children as best as they could which was the only meeting ground for the spouses. Traumas and emptiness after the children left.

TABLE 5
FIVE CHARACTERISTIC RESPONSES BY GROUPS L AND U EXAMINEES (PATIENT'S OWN FAMILY)

Marital troubles	L = U
Conversation and rational decisions	L < U
Lack of understanding with children	L > U
Parents' interference in marriage	L > U
Parents' assistance	L < U
Illness	L > U
Transfer of ambitions to children	L > U
Disappointment	L > U

Group U showed overall more stable marriages. Only the first examinee mentioned divorce but she assessed that poor relationships started affecting their child so due to her husband's drinking problem the divorce would provide a partial but more healthy environment. Other examinees were married but stated a series of objective and subjective difficulties. All responses revealed struggle and constant adaptations in working and household responsibilities, which was not easy but all the same successful. (She married young, went to university and finally found a job… I met with some difficulties in my life. We both had a job and a relatively peaceful life until the baby was born… My mother and my mother-in-law are helping me with the children, I was pretty nervous when the children were little and my mother was taken ill… She stayed at home with the child for two years, her husband was working but still helped her with the daughter and with her professional career.)

The efforts made from both sides and the decisions reached by conversation produced less disappointment in this group than in the other study group.

Discussion

In 25% of the selected examinees, response rate was higher in patients with poorer memory (61%). Their need for contact with the physician was higher than in examinees that showed better test results. The need for ventilation of inner problems in group L was also confirmed by having used twice as much words (2051:1288) to express their life experience. It is interesting to note that the two groups did not differ in short statements (31.1:35.8), and the observed differences in long expressions showed that ventilation as a method of supportive psychotherapy is justified and necessary in family practice.[7, 8] However, this method alone will not directly delay the aging process or eliminate objective problems of patients. Provided that education enables physicians to understand what the patients are saying, it is possible to strengthen the conscious self of the patient and to improve his abilities to adapt and to solve the problems efficiently thus fostering healthy aging. This adaptation mechanism has been determined and encountered in the literature since the authors have observed it in patients considered to have shown healthy ageing[9].

Examining the parameters showing growing-up and life events of examinees, certain specificities were observed that because of their qualitative nature had to be evaluated and correlated with the results obtained in other parts of the study and formulated as a typology of aging in the study sample.

The comparison of the statistical text analysis results for groups L and U did not show any geography specific characteristics for parameter 'childhood'. Examinees with impaired memory and those with satisfactory memory level were pretty evenly distributed by place of birth. These results were not comparable because consultation of literature showed that similar studies have not been made. Both groups reported about equally a trauma from childhood. It is interesting to note that both groups reported traumas and not a happy and cheerful childhood. It could indicate to a trauma from an early age as an entity, which would be an unimportant event in itself for mental impairment in the aging process. The accumulation of traumas in interaction with different personality types has been explored in the literature and has been considered important in the analysis[8]. The scale of traumatic experiences obtained in the results of this study was marked by war, disastrous earthquake in the city of Makarska, life with an alcoholic father, fall out of three-meter high

window, frequent beating, blind nanny, birth of unwanted brother, blood-headed neighbor, disappointments in friends, etc. The persons having experienced more frequently changes in their lives are more likely to get seriously ill, has been found by authors investigating a cumulative impact of stressful life events[10]. This study confirmed the results obtained elsewhere on traumatic events because these were consistent with the group of examinees showing memory deficit in the initial test (L).

Free associations on primary family provided mostly scarce information on important events of the period, mainly on deaths, illnesses, poverty; or indifferent statements on family as a good one or on relationships that are 'as good as might be in the circumstances'. It is interesting that neither here nor in the 'childhood' parameter was there any characteristic response with happy memories of joys in the primary family.

Group U differed in the memories of primary family. It was again a patriarchic family where one should listen and obey, work and eat anything. It was described once as a pretty good family, at other times as a family with an authoritative father who inflicted damages to his favorite brother and supportive mother but without 'real feelings' for her children, or a compact and very protective family with possessive and authoritative mother, or finally as a classical hierarchic family with father as the head of the family. Similar data, scarce and superficial, were obtained in this group also for memories from childhood and preschool age, which might indicate that it was painful to bring to consciousness the unpleasant events from that period but nevertheless these were much strongly imprinted in the memory than any pleasant events. Something still remains unclear. It is the relationship emerging from memories between starting one's own family and early childhood in primary family.

Group L examinees expressed great eagerness about achieving good marriage, the best upbringing for their children, high education for their supertalented children, in short everything they could have not experienced or done in their own childhood or school age. Since these goals should be met at any cost, they were constantly changing schools and enrolling new programs themselves and doing the same for their children, at the same time already having a job. Everything was subordinated to that goal, in spite of objective difficulties encountered, and done without much feelings, thoughts or realistic assessment of potentials. Putting a lot of efforts, they maintained an illusion of having a good marriage, regular visits to relatives, trips, seaside, plenty of toys, houses built, etc. which were all destroying the already disturbed family relationships by additional work and money gaining. Both partners from divorced families tried to save their own marriage at any cost. (My husband and me come from divorced families; already as a girl I wanted a good marriage, having my own family – because I didn't have one. Now I think it was not that I wanted it but I knew it, and it's the knowledge you gain in the family.) Recent studies have confirmed the fact determined long time ago that marital separations and divorce are not independent events but a series of changes progressing with time. Divorce affects parent-child relationship, parent function and efficacy, distant family and social relationships. These changes may create both short-term crises and long-term consequences in individual family members[11]. All examinees of this group were taken ill after their children left, and some of them only then found the way to communicate. The fourth examinee did not mention her husband until her children left their home, then she had

heart difficulties, her husband as well but also high pressure and sugar in blood, and finally they found a common topic for conversation. In all responses, after an unbelievable hard struggle to achieve the good as perceived in their own visions originating from primary family, there was a sudden discontinuation of all activities, an escape to old age indicating the same 'destiny' for their children. This phenomenon is anticipated to be followed prospectively in the next generations.

Group U examinees as a whole expressed more stable relationships in their marriages. The circumstances they were exposed to were dealt with in two characteristic ways. In some examinees, the wish for advancement was accompanied by realistic assessments of both positive trends and difficulties in marriage. Their children were raised by grandparents but only rarely and exceptionally when the parents were held up by other responsibilities. Family relationships were adapted to the situation, often strenuous but in itself good and eventually stable. These persons were feeling young for a long time and hard to tell their real age. Similar subgroups have been observed in prospective studies of Finnish workers.[12]

The second subgroup developed equally ambitiously, showing responsibility and endurance but at the same time narrow-minded black-and-white refusal of their own and other people's imperfections and mistakes in their knowledge and behavior. These were misfits not being able to forgive either themselves or others, persons not being classifiable as old persons by the phenotype. They were extremely outgoing and socially highly accepted and lovable persons but their biological mechanism prone to immunity deficits very often collapsed suddenly developing a severe illness (cancer, heart attacks, sudden deaths). These observations were confirmed by statistical analysis of L and U group examinees' health states. Other authors have obtained similar results.

Conclusion

Good and bad relationships are built across the family genealogy partially directing and creating a life-style that would produce premature or delayed aging.

Knowledge of intergenerational relationship patterns is an important factor in family practice for preventive aspect of healthy aging.

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OBITELJSKI ODNOSI U PREDIKCIJI STARENJA

S A Ž E T A K

U radu je prikazano istraživanje prediktivne vrijednosti obiteljskih odnosa kroz genealogiju i njezinog značenja za uspješnost starenja pojedinca. Istraživanje je provedeno na odrasloj urbanoj populaciji, koja je u skrbi dva obiteljska liječnika (N = 1700). Uzorak su činile sve osobe (581 osoba: 57,3 % žena, 42,7% muškaraca) koje su u razdoblju tri mjeseca tražile medicinsku pomoć bilo koje vrste. Istraživanje je provedeno u dvije faze. Prva faza predstavlja odabir pacijenata prema 25. i 75. percentilu rezultata analize komponenti pamćenja. Druga faza čini usporedbu životne povijesti i događaja kroz genealogiju u skupinama za 25. i 75. percentil memorijskog deficita. Memorijski deficit je testiran pomoću psihološkog testa POT (Pictures of Object Test), a osobna povijest i značajke obitelji dobiveni su pomoću teksta slobodnih asocijacija. Podaci su analizirani statističkom analizom teksta (SPAD-T) I korelirani s podacima iz učinjenog genograma. Dobiveni rezultati ukazuju na razliku u obrascima obiteljskih odnosa kroz genealogiju u dvije promatrane skupine te njihovu prediktivnu vrijednost u preventivnom radu obiteljskog liječnika.