ILLNESS IN PREGNANCY AMONG MIGRANTS AND NON-MIGRANTS

AN EXPLORATORY STUDY IN AUSTRALIA

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The literature on the relationship between migration and illness deals mainly with psychiatric illnesses. Mezey (1960), in summarizing a number of psychiatric studies, concludes that "migrations are associated with a considerable psychiatric casualty rate (which is) generally higher in women than in men". The psychiatric studies have been criticized on a number of grounds (Opler, 1959), primary difficulties being the establishment of adequate criteria of illness and the lack of control groups.

Among the non-psychiatric studies of illness in migrants is that of Tyhurst (1951), whose patients were displaced persons in Canada. Tyhurst concluded that "all patients present a large number of somatic complaints. They are preoccupied with these and reluctant to express or admit subjective feelings". Ruesch, Jacobson, and Loeb (1948) concluded that "the fact that culture change may be a source of stress and strain is borne out by its influences upon physical and mental health, and substantiated by statistics of morbidity and mortality, suicide, and mental and nervous disease".

These studies suggest that illness may occur as a reaction to the disturbing experience of migration. Although the psychiatric problems of migrants have an intrinsic interest, of wider concern is a study of the incidence of non-psychiatric illnesses among migrants. Illnesses in pregnancy offer convenient conditions in which migrant and non-migrant populations may be compared. Those women whose pregnancies follow a normal course can be compared with those who develop pre-eclamptic toxæmia or have long labours, which are agreed to have a psychosomatic basis. Relevant studies include those of Coppen (1958), Cramond (1954), and Hetzel, Bruer, and Poidevin (1961). In addition, women who regard pregnancy as a time of sickness

(Rosengren, 1961) may well adopt this response as a coping mechanism, suggesting the hypothesis that there would be more migrants than non-migrants using such a mechanism.

In an obstetric hospital, serving both migrant and non-migrant groups, it is therefore possible to examine the gross differences between migrants and non-migrants in medically-diagnosed illnesses in pregnancy and also the differences in their reactions to pregnancy. Differences in these features of pregnancy may also occur between various groups of migrants, and may be related to the length of time for which they have been in the country.

The results to be reported were obtained from short interviews with the 356 patients who during the week May 16 to 20, 1960, attended the ante-natal clinic at the Queen Victoria Maternity Hospital, which has over recent years had an increasing proportion of European migrant patients. After they had registered their attendance and while they were waiting to be examined by a doctor, the subjects were asked how long they had been in Australia, and whether they were accompanied by someone on this clinic visit, and were then given two check-lists. The first list covered "21 things that have been found to worry people during pregnancy", and the second was twenty "bodily symptoms that people sometimes notice about themselves when they are pregnant". In each case the instructions were "to check those things that you have noticed about yourself". These check lists are given in the Appendix.

Because many who attend the hospital are not English-speaking, parallel versions of the check-lists were prepared in Italian, German, and Greek so that all subjects completed a form in a familiar language. A few of the women were apparently bewildered by

the task, particularly some from Eastern Europe. Although there were no outright refusals to co-operate, 9.4 per cent. did not complete the whole questionnaire through illiteracy, because they said they were too ill, or for other reasons, including the assertion that nothing applied to them. There were 356 questionnaires distributed, 240 in English, 56 in Italian, 42 in Greek, and 18 in German; 32 forms (22 English, 6 Italian, 3 Greek, and one German) were returned uncompleted. Because of the diverse reasons for not completing a questionnaire, it was decided to include these forms in the analysis as zero scores. They do not contribute any systematic bias.

From the case notes the following information was available about each subject: number of weeks pregnant at the clinic visit in question and at the first clinic visit, country of birth, age of menarche, religion, age, parity, and marital status. When all in the sample had been delivered, final diagnoses of the course of pregnancy and labour were obtained from the case notes, as well as information about breast feeding. The diagnoses had been checked by the Medical Superintendent, and these are the ones used in compiling the hospital's statistics. The check-lists yielded two scores, one of specific "pregnancy worries" and the other of "bodily symptoms". The latter score may also be seen as a measure of the extent to which pregnancy is thought of as a time of sickness, or of the "sick role behaviour in pregnancy" (Brown, 1963; Mechanic and Volkart, 1961). The reliability of these measures was assessed by re-testing the 21 women who returned to the Clinic on Monday in the week following the main testing. Although these were women in the last few weeks of their pregnancy, and perhaps more likely to be unstable in their responses, the agreement between the two administrations was 93 per cent. for pregnancy worries and 94 per cent. for bodily symptoms. The mean number of items marked was 1.3 in the first and 2 in the second testing for pregnancy worries, and 3.6 for the first and 3.7 for the

second testing for bodily symptoms; neither difference is statistically significant.

Of necessity a survey of this kind gives coarse data and small groups between which to make comparisons. The population presenting at a public hospital is not randomly drawn, and no information was available about the migrants' assimilation, apart from their length of time in Australia, their language, and their country of origin. Nor was any information available about the husbands of those who were married. Despite these inadequacies, the data collected should be suitable for testing hypotheses about differences between migrants and non-migrants. In considering the results, the main concern in the present paper is with these differences, and for this reason, the obvious medical features of the material, such as the relationship between age and length of labour, can be disregarded.

SAMPLE CHARACTERISTICS

The main groups in the sample are the 139 non-migrants born in South Australia (39 per cent. of the total), the 63 migrants born in Italy (17.7 per cent., seven of whom completed the English check-list), and the 42 migrants born in Greece (11.8 per cent.). The other groups which are all smaller include 29 born in the rest of Australia (8 per cent.), 25 born in Great Britain (7 per cent.), and 18 born in Germany (5.6 per cent.). There is also a miscellaneous group of forty women who were born in other countries.

Of the total sample, 321 (90 per cent.) were married at the time of their first Clinic visit, 21 (5.9 per cent.) were single, and the rest were either divorced or separated. 202 women were aged between 20 and 29 (57.3 per cent.), 52 (14.6 per cent.) were aged 19 or younger, and 95 (26.7 per cent.) were aged between 30 and 39. In the age distribution there is a pronounced tendency for those born in Europe to be older than the Australian or British born (Table I). This is a characteristic of the sample and, although it may introduce some bias into the results, does not

TABLE I
PERCENTAGE AGE DISTRIBUTION, BY BIRTH-PLACE

Age Group (yrs)	Total Number	Birth-Place						
		South Australia	Rest of Australia	Great Britain	Italy	Germany	Greece	Other
10-19	52	21	28	20	6	6	5	8
20-29	202	55	55	40	62	67	71	48
30-39	95	22	14	36	30	28	24	43
40-49	7	2	3	4	2	0	0	3
Total No. of Women . .	356	139	29	25	63	18	42	40

itself account for the observed differences between migrants and non-migrants. In fact, these differences between the European and British-born may depend upon cultural influences.

In the total sample, 105 were primiparous, 105 were in their second pregnancy, 59 in their third, and 63 in their fourth or fifth. When the percentages of each parity are taken for each birth-place group, the greatest difference occurs in the number of primiparous women from Italy compared with the rest, and the number of women in their second pregnancy from Greece (Table II). The conclusions about differences between groups are drawn in such a manner as to make these sampling differences unimportant.

When those in their first pregnancy were compared with those in their second pregnancy, it is only in the medical diagnosis of pregnancy and labour, and in the length of time for which the migrants have been in Australia, that they differ significantly from each other. These are expected findings. More first than second pregnancy migrants have been in

Australia less than 2 years (48 and 21.6 per cent. respectively).

RESULTS

Table III shows the diagnoses of pregnancy and labour for each birth-place group for those in their first and succeeding pregnancies. There is a substantially lower incidence of pre-eclamptic toxæmia (P.E.T.) among those born in Italy than in any other group, both primiparous and multiparous. There is also a lower proportion of primiparous Greeks with pre-eclamptic toxæmia than in the other groups. Table III also shows that there are no appreciable differences between the birth-place groups in type of labour, although some minor differences might repay further investigation.

Table IV (opposite) shows the pregnancy worries and bodily symptoms noted by each birth-place group, for those in their first and succeeding pregnancies. The outstanding feature is the fact that both the Italian and Greek born marked far fewer worries than any of the other groups, no matter

TABLE II
PERCENTAGE DISTRIBUTION OF PARITY, BY BIRTH-PLACE

No. of Pregnancy	Total Number	Birth-place						
		South Australia	Rest of Australia	Great Britain	Italy	Germany	Greece	Other
First	105	24	28	32	40	33	36	23
Second	105	25	34	20	33	17	45	33
Third	59	18	14	16	16	17	12	20
Fourth	34	12	14	12	3	11	2	13
Fifth	29	12	3	4	6	17	2	5
Sixth and Above ..	24	9	7	16	2	5	3	6
Total No. of Women ..	356	139	29	25	63	18	42	40

TABLE III
PERCENTAGES WITH VARIOUS DIAGNOSES OF PREGNANCY AND LABOUR FOR PRIMIPARAE AND MULTIPARAE, BY BIRTH-PLACE

Diagnosis		Birth-place							
		Australia		Italy		Greece		Other*	
		Primip.	Multip.	Primip.	Multip.	Primip.	Multip.	Primip.	Multip.
Pregnancy	Normal	41	58	76	71	64	57	39	65
	Pre-eclamptic Toxaemia ..	37	21	4	5	7	18	43	15
	Other	15	15	16	13	29	4	13	7
	Unknown	7	6	4	11	0	21	4	13
Labour	Normal	51	73	68	68	50	61	52	67
	Long	5	0	4	0	14	0	4	0
	Other	34	21	24	21	36	21	30	20
	Unknown	10	6	4	11	0	18	13	13
Total Number of Women		41	127	25	38	14	28	23	60

* This category includes those born in Great Britain and Germany because the numbers are small and the patterns do not differ from each other.

TABLE IV

PERCENTAGES MARKING NUMBERS OF PREGNANCY WORRIES AND BODILY SYMPTOMS, FOR PRIMIPARAE AND MULTIPARAE, BY BIRTH-PLACE

No. of Items Marked		Birth-place							
		Australia		Italy		Greece		Other*	
		Primip.	Multip.	Primip.	Multip.	Primip.	Multip.	Primip.	Multip.
Pregnancy Worries	0	29	30	76	74	79	71	30	42
	1	17	16	0	13	21	7	17	18
	2	12	15	8	8	0	14	22	15
	3+	41	39	16	5	0	7	30	25
Bodily Symptoms	0	15	9	36	47	64	46	35	37
	1	2	10	20	11	22	14	9	5
	2	12	7	16	21	14	18	9	8
	3	17	15	0	8	0	11	4	10
	4+	54	59	28	13	0	11	43	40
Total Number of Women		41	127	25	38	14	28	23	60

* This includes Great Britain and Germany.

which pregnancy group they belong to. The mean number of worries marked by those born in South Australia is 2.09, while the mean number for the Italians is 0.95 and for the Greeks 0.55. Table IV also shows that the Italian and Greek women marked far fewer bodily symptoms than those in other groups. Those born in South Australia marked a mean of 4.53 items, while those born in Italy marked a mean of 1.93 and the Greeks 1.02. It is of peripheral interest that the number of worries and bodily symptoms marked is unrelated to the diagnosis of pregnancy or labour; a similar independence of worries and diagnosis among a smaller homogeneous English-speaking sample has been reported by Brown (1963).

The clear differences between the items marked by the migrant and non-migrant groups require some explanation because they are not in the expected direction, it having been predicted that the migrants would mark more pregnancy worries and bodily symptoms because of their greater "stress". In an attempt to explain this finding, notice was taken of whether or not patients were accompanied by someone on their Clinic visit.

Table V shows that many more Italians than any other group were accompanied by another adult. There would seem to be a cultural factor operating here, because fewer Greeks than Italians were so accompanied. In the total group, of those who came alone, 33 per cent. marked no worries and 14.5 per cent. marked no symptoms, while among those who came with another adult, 54.8 per cent. marked no worries ($t = 2.1$; $P < .05$) and 38.7 per cent. marked no bodily symptoms ($t = 2.6$; $P < .01$). This is an important finding deserving further study. The material available does not allow one to conclude whether the differences depend on cultural

TABLE V

PERCENTAGES ACCOMPANIED TO THE CLINIC, BY BIRTH-PLACE

Company at Clinic Attendance	Birth-place						
	South Australia	Rest of Australia	Great Britain	Italy	Germany	Greece	Other
Alone	73	83	73	43	64	75	65
With Adult	15	0	9	43	0	20	12
With Child	12	17	18	14	36	5	23

factors or on the social support that a friend or relative can give, or whether those who were accompanied were less willing to express their worries and symptoms. There is no relationship between the final diagnosis and whether or not the patients were accompanied on the sampled clinic visit.

Because so many of those born in Italy are Roman Catholics, and those born in Greece are Orthodox, religious differences depend in part on the place of birth. However, 50.4 per cent. of all Roman Catholics and 30.3 per cent. of non-Italian Roman Catholics marked no worries, but the same applies to 70.8 per cent. of Orthodox, 26.3 per cent. of Church of England, 41.4 per cent. of Protestants, and 31.8 per cent. of Lutherans. The proportions in the various religious groups marking no bodily symptoms are very similar. These differences between denominational groups in the attitude to pregnancy again suggest the operation of social factors.

It was expected that the non-British migrants who had been in Australia for some years would differ from those who had arrived more recently, length of time in Australia giving a crude index of acculturation. In this analysis only the 124 women who had

been in Australia for less than 10 years are considered, in order to exclude any with an atypical background who might have migrated through the post-war resettlement of "displaced persons". When the diagnoses of pregnancy are considered in this way (Table VI), it is found that 28.6 per cent. of those in Australia for less than a year developed pre-eclamptic toxæmia, and that the proportion with this diagnosis decreases for each year here, until an increase occurs in the proportion with toxæmia among those who have been in Australia longer than 4 years. It is important, however, that 26 per cent. of all those born in South Australia were diagnosed as developing toxæmia.* There are no similar differences in the diagnoses of labour.

TABLE VI

PERCENTAGES OF NON-BRITISH MIGRANTS WHO HAD BEEN IN AUSTRALIA FOR LESS THAN 10 YEARS, BY DIAGNOSIS AND TIME IN AUSTRALIA

Diagnosis		Time in Australia (yrs)				
		Less than 1	1.0-1.9	2.0-2.9	3.0-3.9	4.0-9.9
Preg-nancy	Normal	43	68	73	71	64
	Pre-eclamptic Toxaemia	29	13	19	6	22
	Other	28	13	8	12	11
	Unknown	0	6	0	11	3
Normal Labour		64	68	54	65	81
Total Number of Women		14	31	26	17	36

The number of pregnancy worries and bodily symptoms shows a curvilinear relationship with the length of time in Australia (Table VII).

TABLE VII

PERCENTAGES OF NON-BRITISH MIGRANTS WHO HAD BEEN IN AUSTRALIA FOR LESS THAN 10 YEARS, BY NUMBERS OF PREGNANCY WORRIES AND BODILY SYMPTOMS MARKED, AND TIME IN AUSTRALIA

No. of Items Marked		Time in Australia (yrs)				
		Less than 1	1.0-1.9	2.0-2.9	3.0-3.9	4.0-9.9
Preg-nancy Worries	0	29	50	85	59	64
	1-2	21	26	12	29	17
	3+	50	24	3	12	19
	Mean Score	2.90	1.16	0.27	0.94	1.97
Bodily Sympt-oms	0	14	42	50	35	39
	1-2	7	35	27	41	22
	3+	79	23	23	24	39
	Mean Score	5.50	2.30	1.31	1.41	2.67

* This figure may depend on the method of sampling, in that those with difficulties tend to be over-represented because they come to the clinic more often.

All these results, however, show only trends and cannot support firm conclusions.

Winokur and Werboff (1956) found that the stage in pregnancy at which the first visit is made to the Clinic is important in indicating a woman's attitude to her pregnancy. However, in the material in the present study, the only trend is towards a clustering of British migrants in the fourth month. The numbers are small and little weight can be placed on this finding.

From the case records it was possible to note which women were not still breast-feeding on discharge from hospital. Among the Australian and British born, 28.2 per cent. were *not* breast feeding, as against only 5.2 per cent. of those from Italy ($t = 3.7$; $P < .01$), 13.2 per cent. from Greece ($t = 2.0$; $P < .05$), and 16.7 per cent. from Germany. It seems that these results depend upon cultural differences. Probably similar cultural factors influence the mean age of menarche; for those born in Australia the mean age is 12.9, for those born in Britain 13.6, in Italy 13.7, in Greece 14.4, and in Germany 14.7. There is no relationship between age of menarche and the number of pregnancy worries or bodily symptoms.

Although the responses to items in the check-lists are potentially valuable, firm conclusions about group differences cannot easily be drawn, because of the large numbers of those born in Italy who did not mark any items. There are not significant differences in the rank order of items between those born in Britain and Australia. When the rank orders for diagnostic groups within each category are considered, there are again no significant differences.

The rank orders of the pregnancy worry items show different patterns for those born in Italy and those born in South Australia. Taking the most frequently marked items (the actual frequencies are in parentheses), those born in Italy express concern with *themselves* by marking most often "What will happen when the baby is born" (6), "Your health seems changed" (5), "The discomfort of labour" (5), and "Being unable to do what you usually did" (5). Those born in South Australia on the other hand, marked most frequently "Trouble about money" (56), "That the baby may be defective" (27), "That you may have a miscarriage" (24), and "That you may not get to the hospital in time" (24), the last three items apparently showing concern with the birth.

Those born in Italy placed "headaches" and "difficulty in getting to sleep" higher in the ranked list of bodily symptoms than did those born in South Australia, who more often marked "frequent passing of water", "backache", and "stomach trouble".

Further study of symptom differences would seem promising.

DISCUSSION AND CONCLUSIONS

In studies of psychiatric breakdown among migrants, the stresses of moving can be used to explain the findings of differential breakdown rates among migrants and non-migrants. In the results that have been presented here, such an interpretation cannot be made, because the differences that are observed tend in the opposite direction to that predicted, if it is assumed that migration increases the stresses placed on a pregnant woman. The most important finding in this study is, of course, the lower level of anxiety expressed by the groups of women born in Italy and Greece, as measured by the check-lists of pregnancy worries and bodily symptoms. The simplest explanation of this finding is that culturally-bound attitudes influence the expectation of pregnancy as a time of worry or sickness. There is insufficient evidence in this study to know what factors are effective in reducing anxiety, but it may be noted that, because more Italians were accompanied by another adult to the clinic, social support or attitudes of acceptance seem to be important. The function of such company at the clinic however, needs further exploration, as it has been suggested that it may be explained merely by reasons of modesty.* On the other hand, the reduced anxiety scores among those from Italy and Greece may be due simply to a lack of facility with the check-lists or to some fault in the translated forms. The fact that, in all comparisons including those for the incidence of abnormalities in pregnancy and labour, the Italian-born group stands out as different from the others and has its greatest affinity with those born in Greece, suggests that cultural factors can account most generally for the differences observed. Cultural influences, of course, show clearly in attitudes and their effects tend to be persistent.

The only findings that seem attributable to acculturation are the relationships between "length of time in Australia" and "toxaemia" among the non-British migrants and the curvilinear relationships with pregnancy worries and bodily symptoms, but even these findings are somewhat ambiguous.

Hetzel and others (1961) found, in a study at the same hospital, that "there was a higher incidence of patients with non-Australian parents in the prolonged vomiting and prolonged labour groups

(although) this did not reach statistical significance". These two strands of evidence point towards some substantial relationship, but its precise nature is still to be described.

When the hospital attends to migrants, it is assumed that they will all behave in the same way as Australians do. Thus, when an Italian woman arrives with a friend, there is no room for them both as the waiting rooms are small. Consequently, this hospital situation provides a "laboratory" for the study of cultural differences in the psychologically significant conditions of pregnancy, as well as for a study of the way in which critical components of behaviour are altered during assimilation. In further studies, comparisons between Australians and those born in Italy would allow the most effective control of variables.

This study was planned to identify differences between migrants and non-migrants that could be attributable to their difficulties of assimilation. The results, however, do not allow a distinction to be drawn between the influence of cultural and migratory factors. Any conclusion from the incidence of pre-eclamptic toxæmia among the Italians is valueless, because there are so many other contributory factors, including the reaction to the hospital itself. However, because there was such a low incidence of toxæmia among the Italians, and because there is a relationship between the length of time in Australia and the number of worries marked in all migrant groups, migration does seem to have some effect on illness in pregnancy. It appears that these social variables have a greater influence on attitudes than on the actual course of pregnancy.

SUMMARY

In a study of women attending the ante-natal clinic of a public obstetric hospital in Adelaide, information has been collected relating to worries and bodily symptoms in pregnancy, medical diagnosis, and, for the migrants, birth-place and the length of time in Australia. It was found that the original hypothesis of a simple relationship between acculturation and illness needs to be refined before it can be usefully applied to illness and difficulties in pregnancy. Any differences that have been observed between migrants and non-migrants are probably mediated by broad social attitudes, rather than directly attributable to the effect of migration itself. Thus although those born in Italy showed less anxiety about pregnancy than did any other group, it may be that social support and other similar factors alleviate feelings of anxiety among members of this group.

* This is a suggestion made by Prof. Ernest Beaglehole.

Among all groups of migrants, there is a tendency for "pregnancy worry" and "bodily symptom" scores to vary with the length of time in Australia, although the relationship is not clearly in the predicted direction. The length of time in Australia is not related to diagnosis, apart from a slight increase in the proportion of recent migrants (less than one year in Australia) who developed pre-eclamptic toxæmia. There is a smaller proportion with pre-eclamptic toxæmia among those born in Italy than among those born in Australia. It is concluded that fundamental and culturally-based reactions rather than the simple effect of migration may account for the differences observed between migrants and non-migrants.

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APPENDIX QUESTIONNAIRE

(A) PREGNANCY WORRIES

Below are 21 things that worry people during pregnancy. Tick those things that worry you during your pregnancy. Add at the end anything else that has worried you.

1. (...) trouble about money
2. (...) what will happen when the baby is born
3. (...) whether the baby will be ill
4. (...) whether the baby will be defective
5. (...) that you may have a miscarriage
6. (...) that the baby may die
7. (...) that you may have twins
8. (...) that your health seems changed
9. (...) that you may not get to the hospital in time
10. (...) that your husband treats you differently
11. (...) the discomfort of labour
12. (...) what it will be like in hospital
13. (...) where you will live
14. (...) the illness or death of a relative
15. (...) quarrels with your husband
16. (...) trouble with in-laws
17. (...) that your husband may lose his job
18. (...) difficulties with sex relations
19. (...) being unable to do what you usually did
20. (...) that you may not know how to look after the baby
21. (...) trouble with the language

Is there anything else that worries you?.....

(B) BODILY SYMPTOMS

Below are twenty bodily complaints that have been found to happen in people who are pregnant. Tick those that you have noticed particularly about yourself. At the end add anything else that you have noticed about yourself.

1. (...) feeling of sickness (nausea)
2. (...) frequent vomiting
3. (...) changes in appetite
4. (...) constipation
5. (...) backache
6. (...) frequent passing of water (urination)
7. (...) fainting
8. (...) dizziness
9. (...) perspiration
10. (...) flushing
11. (...) feeling depressed
12. (...) no energy
13. (...) difficulty in getting to sleep
14. (...) too many dreams
15. (...) indigestion
16. (...) headaches
17. (...) tingling feeling in your skin
18. (...) unusual swelling
19. (...) varicose veins
20. (...) heartburn

Do you have any other complaints?