

EMOTIONAL DISORDER, STATUS INCONSISTENCY AND MIGRATION

A Health Questionnaire Survey in Jerusalem

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This report describes a health questionnaire survey in a predominantly immigrant neighborhood of Jerusalem in 1962–64, and its implications for the epidemiology of emotional disorder in this neighborhood.

The instrument used was the Cornell Medical Index (CMI), which comprises 195 questions concerning the presence of various symptoms, illnesses, and mood and feeling patterns.¹ The study deals with the prevalence of high CMI scores (30 or more “yes” responses to the questionnaire), and their relationship to educational level, occupational grade, the congruency between these two, place of birth, and other variables.

Studies in the United States and Britain have demonstrated that the number of “yes” responses to the CMI is of fair validity as an indicator of the presence and degree of emotional disorder. This has been the common finding of a number of investigators, despite the lack of unison on definitions or criteria of mental illness. A score of 30 or more has been shown to have a high specificity (ranging from 70 to 100 per cent in various studies) and a fairly high sensitivity (40–86 per cent) as an indicator of emotional disturbance. On the basis of a review of such studies, it has elsewhere been suggested that the CMI is at present about as useful as any

other simple method for epidemiological studies of emotional disorder in the United States and Britain.² A recent Jerusalem study has indicated that in Israel too the CMI is of fair validity as an indicator of emotional disorder.³ In that study, the scores of 120 members of a random population sample (all of them subjects of the present study) were compared with independent clinical appraisals of their emotional health. The sensitivity of the CMI (using a critical level of 30) appeared to be at least as high as in the United States and Britain, and its specificity only slightly lower.

The relationships found with high CMI scores will, accordingly, be interpreted as relationships with emotional disorder. To the reader who is not satisfied that the validity of the CMI is sufficient to warrant such an interpretation, this study must remain one of a particular pattern of response to a specific health questionnaire, which may or may not have health connotations.

MATERIAL AND METHODS

The questionnaires were administered to a random sample of the 7109 adults (aged 20 years or more) in a defined area in the western part of Jerusalem. The subjects were chosen on an individual (not a household) basis, using random numbers. The technic was designed to produce a 1 in 6 sample, and actually yielded a 1 in 6.1 sample of women and a 1 in 6.7 sample of men. The number of women interviewed was 542, and the number of men 428. These constituted 90 per cent of the women in the study sample, and 83 per cent of the men. Refusals accounted for 28 per cent of the failures, and changes of address for 37 per cent; in 33 per cent, the reasons for failure were unclear. The questionnaires were administered in their Hebrew version⁴ by trained interviewers, usually in the subject's home.

Social status was measured in terms of (a) educational level and (b) occupational grade. Educational level was measured by the number of years of school or higher education. This method was adopted as the simplest and least ambiguous way of rating persons educated in different countries with different educational systems.

There was much variation in level, the range being 0–30 years; the median figures were ten years (men) and eight years (women). Occupations were rated by a system adapted for use in Israel⁵ from that of the British Registrar-General, using four grades. The main occupations in each grade were: 1. major professionals, higher executives, proprietors of large enterprises (nine per cent of the subjects); 2. lesser professionals and executives, proprietors of medium-sized enterprises (eight per cent); 3. skilled workers, clerical workers, owners of small enterprises (55 per cent); and 4. semiskilled and unskilled workers (18 per cent); the data did not allow a distinction between semiskilled and unskilled workers. Men were graded according to their current occupations; non-working men were graded upon their previous trades or professions. In the absence of a suitable grading scheme, tested in Israel, for women's occupations, women were graded according to the occupations of their husbands or late husbands; unmarried women were not graded. Including unmarried women, ten per cent of the subjects could not be graded. Despite the shortcomings of this grading scheme, empirical justification for its use in Israel is provided by recent studies which, by using this or similar methods, have shown associations between occupational grade and a variety of health and related indices, such as infant mortality,⁶ children's self-appraisals of their health,⁷ the prevalence of rheumatic heart disease,⁸ hemoglobin levels⁴ and erythrocyte size,⁹ and diet.¹⁰

Status inconsistency was measured in terms of the discrepancy between an individual's educational and occupational statuses. On the assumption that an individual's statuses are most meaningfully measured in relation to persons of his own age and sex, each person was assigned an educational rank and an occupational rank, dependent upon his position in relation to others in his age-sex category. Within each category (men and women aged 20–29, 30–44, 45–59 and 60 or more years respectively) persons were ranked from the highest to the lowest number of years of education, and also from the highest (grade 1) to the lowest occupational grade. Where there were ties, each person was assigned the average of the ranks which would have been assigned had no ties occurred.

As there were relatively few ties in educational level, the educational ranks provided a fairly fine discrimination. The occupational ranks provided a cruder discrimination. The difference between each person's educational and occupational ranks was then used as an index of the discrepancy between his statuses. The sign of the difference indicated the direction of the disparity. This method assumes that whatever the person's position in the educational and occupational hierarchies, if his two ranks were similar, there was little status inconsistency. The members of each age-sex category were divided into three groups:

- O. Occupational rank higher than educational rank by ten or more percentiles. (The crude ranks were converted into percentiles to facilitate the combined analysis of the various age-sex groups).
- N. Little or no discrepancy, i.e. less than ten percentiles in either direction.
- E. Educational rank higher than occupational rank by ten or more percentiles.

There were 288, 296 and 283 persons in groups O, N and E respectively.

All but one of the 970 persons interviewed were Jewish. Most (81 per cent) were immigrants; 35 per cent were born in Europe, the Americas, or South Africa, 28 per cent in North Africa, and 18 per cent in Asia (other than Israel). Of these foreign-born persons, 14 per cent had arrived in Israel before 1948 (the year of the establishment of the state), 40 per cent in 1948-52, 28 per cent in 1953-59, and 18 per cent in or after 1960. Of the 181 native Israelis, 55 per cent were aged 20-29 years and 40 per cent were 30-44 years. Almost all the subjects aged 45 years or more were immigrants. Most (83 per cent) of the subjects were married; nine per cent were single, seven per cent widowed, and one per cent divorced or separated.

Statistical significance was tested by two-tailed nonparametric tests, using the five per cent level of significance. Where it was necessary to control effects connected with another variable when

examining the relationship between CMI scores and a specific variable, this was done by categorizing the subjects according to this other variable, and applying van Elteren's procedure¹¹ to the data for the various sub-groups. In order to control effects connected with age and sex, for example, this procedure was based upon separate Mann-Whitney U tests¹² in the various age-sex groups. Where the data for the sub-groups were arranged in two-by-two contingency tables, the summary chi-square test described by Mantel and Haenszel¹³ was used for the same purpose.

An "index of association" was used to express the strength of the association between high CMI scores and specific variables. An index of 100 per cent or -100 per cent indicated complete dependence, and an index of 0 per cent the absence of any association. In order to control the effect of other variables, the subjects were categorized according to these other variables, a separate index calculated for each sub-group, and an arithmetical mean calculated. The index of association was based upon p , the probability that a person with a high CMI score would differ in a stated direction, in respect of the variable under study, from a person with a low CMI score. The formulae used were:

$$\text{Index} = (2p - 1) \times 100$$

$$p = (U - \frac{1}{2} \sum t_1 \cdot t_2) - (n_1 \cdot n_2 - \sum t_1 \cdot t_2),$$

where n_1 and n_2 represent the numbers with and without high CMI scores, and t_1 and t_2 the numbers, for each rank of the variable under study, with and without high CMI scores. U was calculated by Siegel's formula 6.7a.¹²

FINDINGS

The prevalence rate of high CMI scores (30 or more "yes" responses to the questionnaire) was 33 per cent among the men and 56 per cent among the women. The prevalence rose markedly with age in each sex, and in each age-group it was higher among the women (Table 1).

Persons with high CMI scores tended to be of a lower educational level than those with low scores. This difference was significant,

after adjusting for effects connected with age and sex (Table 2). The relationship with educational level was strong among persons aged under 45 years, and weak and non-significant among older persons; the association was apparent in each sex. This age difference is apparent in Figure 1, which shows the prevalence of high scores among persons with eight or fewer, and nine or more years of education. The relationship with educational level was clearly apparent among foreign-born persons, and appeared to be independent of the immigrants' region of birth (Europe, America

TABLE 1. PREVALENCE RATE OF HIGH CMI SCORES,* BY AGE AND SEX

	<i>Men</i>		<i>Women</i>	
	<i>No.</i>	<i>Rate</i>	<i>No.</i>	<i>Rate</i>
20-29 years	114	15.8%	163	45.4%
30-44 years	148	30.4%	214	53.3%
45-59 years	104	43.3%	107	63.3%
60 years or more	62	51.6%	58	79.3%
All ages	428	32.7%	542	55.7%

* In this and other tables, a "high CMI score" means 30 or more positive responses to the Cornell Medical Index.

TABLE 2. RELATIONSHIP BETWEEN HIGH CMI SCORES AND NUMBER OF YEARS OF EDUCATION

	<i>No.**</i>	<i>Index of Association*</i>	<i>P†</i>
All persons	966	-17%	0.005
Age:			
Under 45 years	638	-26%	0.00006
45 years and over	328	-8%	N.S.
Sex (persons aged under 45 years):			
Men	262	-27%	0.004
Women	376	-26%	0.00006

* The "index of association" has been defined under "Material and Methods." The larger the figure, regardless of the sign, the stronger the association. The values shown are the mean values for the various age-sex subgroups (persons of each sex aged 20-29, 30-44, 45-59, and 60 or more years) included in each of the groups shown in the table.

† *P* was calculated by van Elteren's procedure (6), based upon separate Mann-Whitney U tests in the component age-sex subgroups, as defined in footnote *. These tests compared persons with and without high CMI scores. "N.S." = not significant, i.e. *P* = 0.05 or more.

** As persons with insufficient data were omitted from this analysis, the denominators are lower than in Table 1.

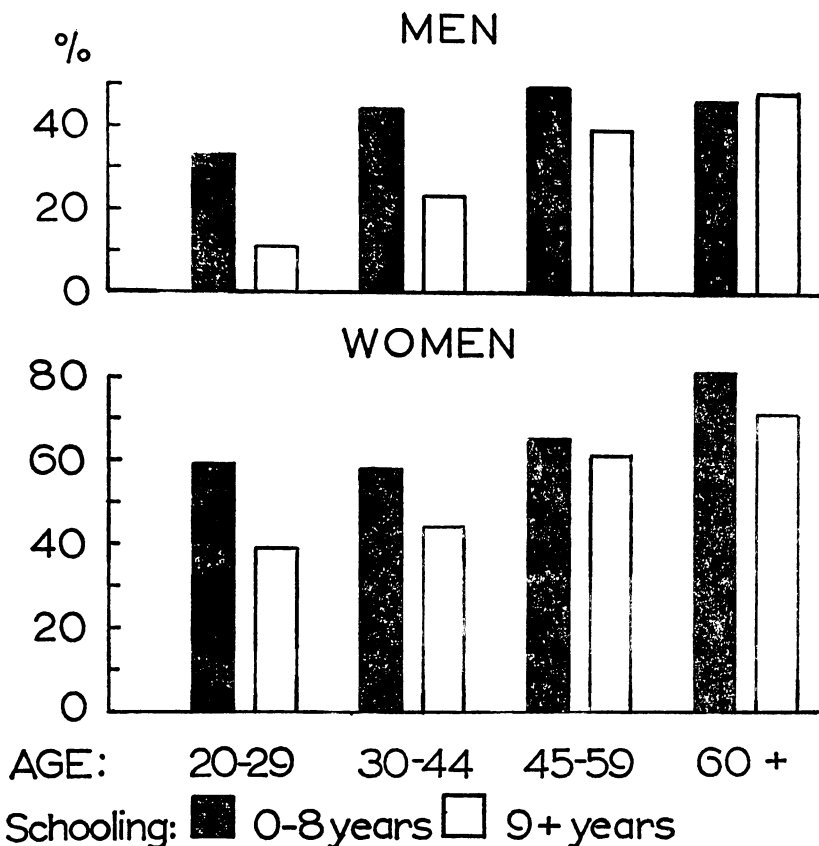


Figure 1. Prevalence rate of high CMI scores, in relation to educational level (by age and sex).

and South Africa; Asia; or North Africa). No consistent association with educational level was apparent among the Israel-born persons studied.

Persons with high CMI scores tended, also, to be of a lower occupational grade than those with low scores. This relationship (after adjusting for effects connected with age and sex) fell short of significance in the total sample, but was strong and significant among persons aged under 45 years; among older persons it was weak and not significant; the association appeared to be stronger among the men (Table 3).

TABLE 3. RELATIONSHIP BETWEEN HIGH CMI SCORES AND OCCUPATIONAL GRADE

	No.	Index of Association	P
All Persons	869	18%	N.S.
Age:			
Under 45 years	581	27%	0.005
45 years and over	288	9%	N.S.
Sex (persons aged under 45 years):			
Men	252	37%	0.016
Women	329	17%	N.S.

See footnotes to Table 2.

TABLE 4. PREVALENCE RATE OF HIGH CMI SCORES, BY OCCUPATIONAL GRADE AND NUMBER OF YEARS OF EDUCATION

Years of Education	Occupational Grade					
	1-2		3		4	
	No.	Rate	No.	Rate	No.	Rate
0-7	4	55%	166	59%	116	47%
8-11	27		225	40%	44	66%
12 or more	128	29%	145	27%	12	

The relationship between high CMI scores and a low educational level was found in occupational grades 1-3, but not in the lowest occupational grade, 4, where high scores were more prevalent among persons of a higher educational level (Table 4). The index of association between high scores and the number of years of education was -27 per cent in occupational grade 1, -17 per cent in grade 2, and -21 per cent in grade 3, but 29 per cent (i.e., the direction was reversed) in grade 4. The relationship in grade 4 was significant ($P = 0.014$ by van Elteren's procedure, controlling for age and sex).

This finding suggested that high scores were associated with a discrepancy between educational level and occupational grade. Accordingly, the persons with high and low CMI scores were compared in respect of the size of the discrepancies between their educational and occupational ranks (see under "Material and Methods"). Van Elteren's procedure was used in order to adjust for

effects connected with age and sex. Initially, the direction of the discrepancy was ignored. It was found that persons with high scores had significantly greater discrepancies between their educational and occupational ranks than other persons (index of association = 16 per cent; $P = 0.0018$). The relationship was weak or absent among persons aged 20–29 years (Table 5). When these younger persons were excluded, the index of association was 22 per cent ($P = 0.0014$). The index of association tended to rise with age, and to be higher among women than among men (Table 5).

TABLE 5. RELATIONSHIP BETWEEN HIGH CMI SCORES AND EDUCATION-OCCUPATION DISCREPANCY, BY AGE AND SEX

	<i>Index of Association*</i> (%)
Men: 20–29 years	4
30–44 years	11
45–59 years	13
60 years or more	14
Women: 20–29 years	–7
30–44 years	13
45–59 years	16
60 years or more	65

* Index of association between high CMI scores and discrepancy between educational and occupational ranks (as defined under "Material and Methods").

TABLE 6. CORRELATION BETWEEN EDUCATION AND OCCUPATION, BY AGE AND SEX

	<i>Correlation between Education and Occupations*</i>
Men: 20–29 years	–0.70
30–44 years	–0.65
45–59 years	–0.58
60 years or more	–0.55
Women: 20–29 years	–0.67
30–44 years	–0.51
45–59 years	–0.51
60 years or more	–0.37

* Coefficient of rank correlation (Spearman) between number of years of education and occupational grade.

On the other hand, the congruency between educational levels and occupational grades, as measured by their coefficient of correlation, tended to drop with age, and to be less among women (Table 6). That is, the greater the discrepancy between the educational levels and occupational grades of the persons in a specific age-sex group, the higher was the index of association between high CMI scores and education-occupation disparity in that group (Spearman's correlation coefficient = -0.98).

In order to examine the influence of the direction of the discrepancy between educational and occupational ranks, a comparison was made of groups O (occupational rank higher than educational rank), N (little or no discrepancy), and E (educational rank higher); these groups have been defined under "Material and Methods". In all age-sex groups combined, the prevalence of high CMI scores was 50 per cent in group O, 34 per cent in group N, and 45 per cent in group E. The prevalence of high scores in group N was significantly lower than that in group O ($P < 0.01$) or group E ($P < 0.05$). When persons aged under 30 years were excluded, the significance levels rose to < 0.001 and < 0.01 respectively. These findings are based upon summary chi-square tests, adjusting for effects connected with age and sex.

These findings were independent of ethnic differences. When summary chi-square tests were repeated, controlling for region of birth as well as for age and sex, the difference between group N and each of the other two groups remained significant ($P < 0.05$ in each instance, separate consideration being given to persons born in Israel; Europe, America and South Africa; North Africa; and Asia other than Israel). However, while this trend was seen in each immigrant group, it was not apparent among native Israelis. This difference between immigrants and natives is illustrated in Figure 2, which compares groups O, N and E. In each age-group of immigrants, except the youngest, the prevalence of high scores was lowest in group N. This was not seen among the small number of native Israelis studied, either in the 30-44 year or in the younger age-group.

The relationship between high scores and status inconsistency

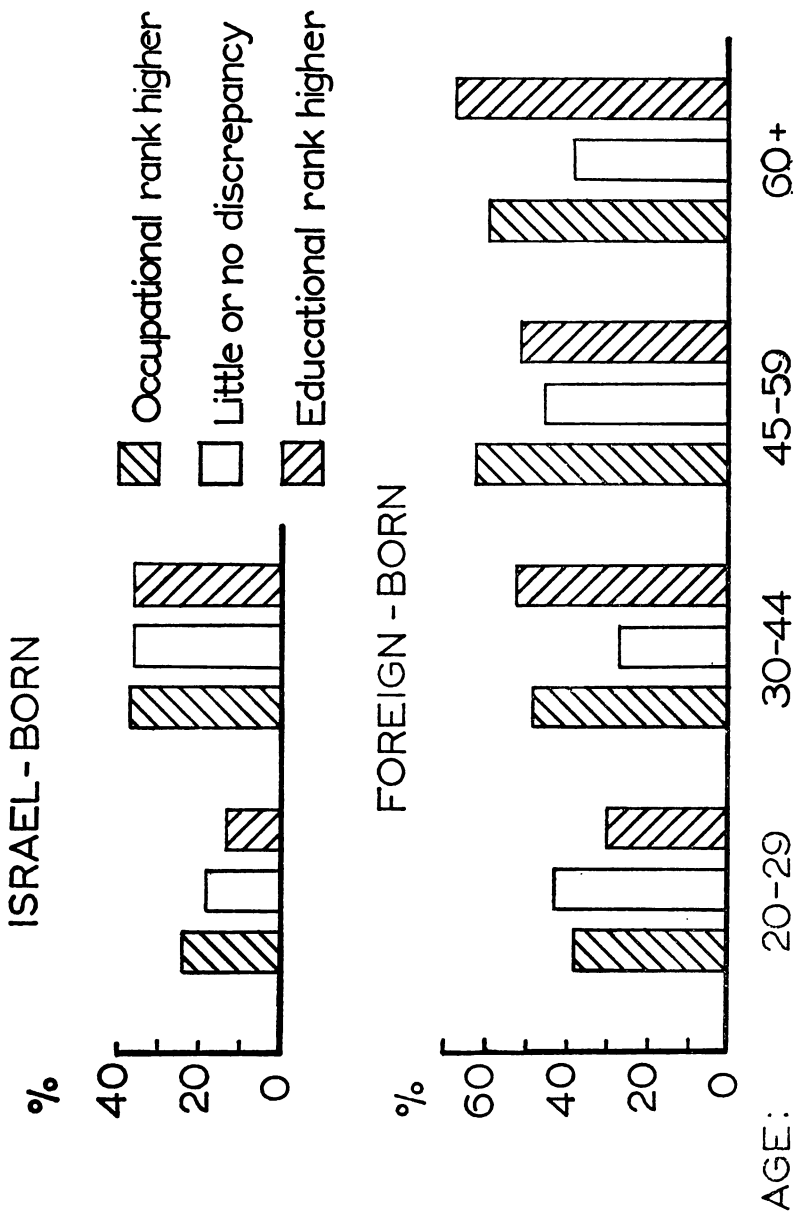


Figure 2. Rate of high CMI scores among Israel-born and foreign-born subjects, in relation to discrepancy between educational and occupational ranks. Rates are the unweighted averages of the rates in the two sexes; the findings in each sex were, with one minor exception, similar.

was largely an expression of the contrasting relationships with educational level seen in occupational grades 1–3 and 4 (Table 4). The difference between groups O and N was apparent both in occupational grades 1–2, where the proportions with high scores were 53 per cent and 21 per cent respectively, and in occupational grade 3 (56 per cent and 42 per cent). The difference between groups N and E was mainly apparent in occupational grade 4, where the proportions with high scores were 42 per cent and 65 per cent respectively; in occupational grade 3 there was little difference between groups N and E, the rates being 42 per cent and 46 per cent respectively. (These findings refer to persons aged 30 years and over.)

High scores were more prevalent among immigrants than among native Israelis ($P < 0.01$ by the summary chi-square method, controlling for the effects of age and sex). This difference was striking among persons aged 20–29 years, the group into which fell 55 per cent of the native Israelis in the sample. Of the 50 Israel-born men and 50 Israel-born women in this age-group, four per cent and 28 per cent respectively had high scores; whereas among the 64 foreign-born men and 113 foreign-born women, the corresponding rates were 25 per cent and 53 per cent. The difference was slight among persons aged 30–44 years, and could not be tested in older age-groups for lack of numbers. This difference between natives and immigrants was not dependent upon educational level or education-occupation concordance; it remained significant when effects connected with educational level and discrepancies between educational and occupational ranks (as well as age and sex) were, in turn, controlled in the analysis ($P < 0.05$ and < 0.01 respectively).

Among the immigrants, no consistent differences in the prevalence of high CMI scores were found (controlling, in turn, for educational level and for educational-occupational discrepancies) between persons born in Europe, America and South Africa; North Africa; and Asia.

No consistent differences in the prevalence of high scores were found between persons immigrating at different times. The number

of very recent immigrants was too small to permit of a detailed study of this group.

No association was found between marital status and CMI scores.

DISCUSSION

The prevalence rate of high CMI scores in this sample is higher than in various population samples and outpatient groups studied in the United States and Britain (Table 7). However, it cannot be concluded that the prevalence of ill-health in this population is relatively high. Although, as noted previously, raised CMI scores appear to be of fair validity as indicators of emotional disorder, the findings may reflect other factors, such as culturally determined differences in the perception and reporting of symptoms. Studies in the United States have pointed to differences between Jewish and other groups in their reactions to pain¹⁹ and in their readiness to adopt the sick role when ill.^{20,21} In a CMI study of apparently healthy United States Army inductees, higher scores were found

TABLE 7. PREVALENCE RATES OF HIGH CMI SCORES: COMPARATIVE DATA FOR VARIOUS SAMPLES IN THE UNITED STATES AND BRITAIN

	<i>Men</i>	<i>Women</i>
Job applicants, cigarette factory, New York (14)	0% (205)	4% (201)
New employees, New York Hospital (15)	3% (152)	5% (307)
Ostensibly healthy persons, New York City (15)	10% (282)	30% (328)
Army inductees, New York City (16)	12% (2176)	—
Persons registered in a London general practice* (17)	16% (89)	36% (98)
Persons consulting a general practitioner, London (18)	17% (76)	33% (94)
Medical and surgical outpatients, New York (15)	23% (2107)	44% (3014)
Population sample, Jerusalem neighborhood (present study)	33% (428)	56% (542)

The sample size is shown in parentheses after each rate.

* The proportion with scores of over 30, comments written on the form being taken as positive responses.

among men of Jewish and Italian parentage than among those of British, Irish or German parentage.²² Although the validity of the CMI has been demonstrated in Jerusalem,³ its validity may not be identical with that in overseas populations. It has been stressed that the CMI and similar health questionnaires are, for such reasons, of limited value in comparative health studies in divergent cultures.^{2, 23, 24}

We are on firmer ground in ascribing health significance to the associations found with social class, status inconsistency and nativity. In the validity study performed locally, it was found that age, sex, educational level, occupational grade and region of birth had little influence upon validity, with two exceptions. First, high scores were more frequent among older persons than among younger persons who, in their physicians' judgment, were of a similar health status. This suggests that the present finding of a rise with age in the prevalence of high scores may not mean, or may exaggerate, an association between age and disorder. This possibility is, however, of little relevance to the interpretation of the other associations noted, since age, as well as sex, was as far as possible controlled in the analysis. Secondly, there was evidence that persons in occupational grade 4 might tend to have lower scores than persons of a similar emotional health status in higher occupational grades. Such a tendency, however, could not produce the association found in the present study, between high scores and low occupational grade. Also, it could not produce the results shown in Table 4, which provide the main basis for the association with status inconsistency.

In the light of these considerations, and the weight of the evidence supporting the validity of the CMI as an indicator of emotional disorder, the positive findings in the present study can be fairly confidently interpreted as indicating the following relationships with emotional disorder in this population.

1. Emotional disorders are commoner among persons of a lower social status, as measured by educational level or by occupational grade. This relationship was marked among younger adults. The relationship was clear among immigrants, but not among native

Israelis. Among foreign-born persons, it appeared to be independent of the region of birth.

2. Emotional disorders are associated with a discrepancy, in either direction, between educational and occupational status, the individual's statuses being measured in relation to persons of his own age and sex. This association was not apparent among younger persons (aged 20–29 years). The age-sex groups in which the association was strongest were those with the least congruity between the educational levels and occupational grades of their members. The association was not dependent upon ethnic differences (region of birth); it was not apparent among native Israelis, of whom, however, the sample included few above the age of 29 years.

3. There is probably more emotional disorder among immigrants than among natives. This difference was marked among younger adults (aged 20–29 years) and was independent of educational level and education-occupation concordance.

Studies elsewhere have provided findings which in some respects are similar and in others dissimilar to these. For example, in the Midtown Manhattan Study a strong relationship was found between impairments of mental health and a low socio-economic status.^{25, 26} The association was, however, independent of age, and was equally manifest among natives and immigrants. Other studies of population samples have yielded conflicting findings concerning relationships with social status.^{25, 27}

Jackson, in a study of a United States national sample, found that certain patterns of inconsistency between educational, occupational and ethnic status were associated with high scores in response to a questionnaire concerning "psycho-physiological symptoms".²⁸ He noted that among women, symptom rates were high where the educational status was high and the husband's occupational status low, but not where the discrepancy was in the reverse direction; whereas among men, symptom rates were high only when the occupational status was high and the educational status low. In a study of managerial workers in a United States corporation, Christenson and Hinkle found less illness and disability among college graduates who had been hired as managers, than among

high-school graduates who had risen from the ranks, despite similarities in the physical and occupational aspects of their present life situation.²⁹ In Pittsburgh, King and Cobb found that positive replies to a set of questions concerning joint complaints were more commonly provided by persons with a discrepancy between their levels of education and family income, than by persons without such discrepancies.³⁰ In conflict with such findings are those among Detroit factory workers, whose mental health was related to their education and occupation, but not to the congruity of these factors.³¹ Reports on the Midtown Manhattan Study do not specifically deal with status inconsistency. However, a relationship was found between mental health impairment and a disparity in socio-economic status between the individual and his father; the most impairment was found among downwardly mobile persons, and the least among upwardly mobile persons.²⁵ In other studies which have considered the father's status, emotional disorder has been found to be associated with upward mobility.^{32,33}

Conflicting findings have also been reported regarding comparisons of the mental health of natives and immigrants. Two other recent Jerusalem studies have found evidence of less disturbance among natives.^{4,34} On the other hand, a study (not yet fully reported) of new immigrants to Israel living under bad conditions in transit camps in 1949–50 found that the proportion with “positive personal adjustment” (a feeling of well-being and security) was similar to that among a cross-section of the entire population, and among members of kibbutzim (communal settlements) in 1954.³⁵ In the Midtown Manhattan Study, more impairment was found among immigrants than among natives; but this difference disappeared when age and socio-economic status were taken into consideration.²⁵ Other studies have yielded conflicting findings.³⁶

Varying etiological explanations can be offered for the associations found in the present study. The relationships noted may be reciprocal: not only may immigration, for example, possibly contribute to the development of emotional ill-health, but emotionally disturbed persons may be more prone to migrate. In addition, the relationships may be secondary to other factors—the association

with foreign birth, for example, may reflect traumatic experiences outside Israel. Clearly, etiological conclusions cannot be established. However, the findings can provide a basis for inferences which may provide guide lines for further studies in the Israeli setting. Such inferences will accordingly be drawn, based upon current theoretical formulations concerning interactions between sociocultural phenomena and mental disorder.^{27,37} It is recognized both that these inferences provide, at best, an incomplete picture of the processes affecting the mental health of the population studied, and that alternative inferences might be equally justified.

It is suggested, first, that inconsistency between educational and occupational statuses plays an etiological role in the production of emotional ill-health in this population. It has been suggested that the basic problem of status inconsistency may be that frustrations and uncertainties are produced as a result of conflicting expectations—conflicts in the individual's expectations of himself and of others, and of others' expectations of him—which may, in some individuals, find their expression in disturbed mental health.²⁸ The person with inconsistent statuses may be regarded, in Lenski's words, as "a particular type of marginal man."³⁸ Among other effects, such conflicts may result in frustrations in social relationships.^{39,40} Moreover, in the case of a high educational and low occupational status, there may be a perceived discrepancy between the individual's aspirations and his occupational achievements.

The etiological role here ascribed to status inconsistency does of course not gainsay the possible role of additional processes in explaining the findings. The association found may be secondary to other factors—there may be patterns of behavior or experiences which are associated with, or which contribute to, both social mobility (in either direction) and disturbed mental health. Of relevance here is Christenson and Hinkle's finding that two groups of managerial workers in a United States corporation who differed in their educational levels differed in many aspects of their past experiences, present life situations, and habits.²⁹

The association with status inconsistency was not found among adults aged under 30 years, or among Israel-born persons. The

latter exception is of uncertain significance, as the sample included few Israel-born persons aged 30 years or more. If it is nevertheless meaningful, it may indicate that to native Israelis, their positions in the educational and occupational hierarchies have less emotional import than they do to immigrants. This may be an effect both of ideological considerations, and of their greater stability of experience in a single sociocultural framework. Weinberg, discussing his psychiatric study of a group of immigrants to Israel, stresses the "danger of uprootedness"—the immigrant "does not obtain his place in the hierarchy of the community as a matter of course. . . . He has to prove himself and to establish his position in the new environment."⁴¹ It is of interest, in this connection, that in a recent study of anemia in Jerusalem, an association with occupational grade was found among the wives of European immigrants, but not among the wives of men born in Israel. The possibility was suggested that "the occupational grading . . . may have different meaning for native-born Israelis than for immigrants of different countries."⁵

The absence of an association with status inconsistency in the younger age-group may reflect the fact that in this group there was least discrepancy between education and occupation. Or it may be that younger adults, who see their lives before them, attach less importance to present discrepancies between their education and occupational status. Both educational and occupational achievements may be more important as auguries of future achievements. This may partly explain the associations found with educational level and occupational grade in the younger (but not the older) age-group. Here too, the absence of a clear association with education in the small sample of young native Israelis suggests that social status may have less emotional significance to them than to immigrants. It must be stressed that these inferences do not, of course, gainsay the role of other factors, such as those investigated in the Midtown Manhattan Study,²⁶ in explaining the observed relationship with social status.

In line with the above suggestions, it is further suggested that the higher rate of emotional disorder observed among immigrants may

largely be a reflection of conflicting expectations. The process of sociocultural change to which immigrants are exposed may result in the development of role conflicts and of discrepancies between their aspirations and the prospects of their attainment. Cassel and Tyroler, writing of urban-rural migration, observed, "recent sociocultural change will raise the probability of incongruity between the culture of the migrant and the social situation in which he lives. Such incongruities as occur will place excessive adjustive burdens on the social groups in which the migrant interacts and on the personality systems of individual migrants. Insofar as these stresses are not absorbed by the small group systems and/or the personality system, recent migrants . . . are likely to manifest increased rates of psychological, somatic and social ill health."⁴² While the evidence for such an influence of sociocultural change is far from unequivocal,³⁶ it is of interest that of the studies which have supported it, two have used the CMI: in one, a study of factory workers in a small city in North Carolina, it was found that "first generation" workers (the sons of farmers) tended to have higher scores than "second generation" workers (the sons of factory workers);⁴² in another, a small study of Indian adolescent girls in South Africa, it was found that high scores were associated with discrepancies in traditionalism between the girls and their mothers.⁴³ The role here ascribed to cultural change does, of course, not negate the possible role of other factors resulting in or from, or otherwise associated with, migration.

The processes here postulated can, clearly, not be considered in vacuo. Their effects must be markedly influenced by the culture and social structure of the society, as well as by the biological and other attributes of the persons studied. As noted above, there are differences between the present findings and those elsewhere, as well as among the findings of investigators elsewhere. In some contexts, culture change may be disruptive; in others, it may be relatively free of disruptive effects.^{44, 45} The reactions of immigrants may, as Shuval showed in her study in Israel, be influenced by their ideology, by their past experiences, and by situational factors.⁴⁶ The influence of status or status inconsistency may be conditioned

not only by the status system of the society, but by the individual's immediate social milieu—the statuses of those with whom he interacts,⁴⁷ his group membership, the quality of his relationships, and so forth.

A delineation of the sociological features of present-day Israeli society, and of this neighborhood in particular, lies beyond the scope of the present study. What, for example, is the degree of sociocultural “disintegration” in this society? Leighton and his co-workers have shown that a disruption of the interrelationships between the patterns of social interaction in a community may be associated with a raised prevalence of psychiatric disorder.⁴⁸ What are the “integrative” and “disintegrative” processes in the Israeli setting, and what is their relative strength? Such questions require sociological study.

It is of interest that the findings suggest that ethnic factors play little part in the epidemiology of emotional disorder in this neighborhood. This may be because few of the subjects were recent immigrants; most had lived in the Israeli “melting-pot” for over five years, and over half for ten years or more. By contrast, Shuval found that one of the most striking impressions to emerge from her study of recent immigrants in 1949–50 was “the generally high salience of the ethnic group. . . . There was hardly a problem in which differential ethnic patterns of attitude and behavior did not emerge. . . .”⁴⁶ Status and status inconsistency, on the other hand, appeared to play a significant role. In this connection, it is of interest that Shuval recently stated, “Despite the fact that Israel may be characterized as a generally open society, upward mobility has not been a dominant value in the culture. . . . Although in recent years it is coming to occupy an increasingly important place in the value system, it is still not a principal motivating factor in conditioning most behavior.”⁴⁶

A further word must be added on the CMI and its interpretation. The CMI is a better measure of broad than of narrow dimensions of health. It is of relatively little value as an indicator of specific diseases, psychiatric or other,^{3,49} but of more value as an indicator of general emotional health status. It appears of value,

also, as an indicator of general health. Relationships have been described with physicians' appraisals of overall health³ and functional capacity,⁵⁰ with work absenteeism,¹⁴ and with the number of sick calls.¹⁶ This wide scope and lack of specificity may lend the questionnaire special advantages for a study such as this. Hinkle and his co-workers have shown that when persons perceive their life situations as stressful, they tend to suffer from clusters of illnesses of all types and all "causes".^{51, 52, 53} They conclude that "man's relation to his social environment appears to have small influence upon the form which illnesses will take. . . ." ⁵¹ It may well be that a tool such as the CMI, which covers a variety of symptoms and disturbances, is for this reason of special value in such studies. Possibly the implications of a CMI study go beyond specifically emotional health, to general, overall health.

In conclusion, what are the implications for future epidemiological studies in this field? If such studies are to incorporate tests of specific hypotheses of the kind postulated above, they must include direct measures of variables which may enter into these hypotheses, such as level of aspiration, perceived movement towards goals, and degree of acculturation, as well as better measures of social status and health than those used in this study. Such studies should also include a careful delineation of the relevant features of the socio-cultural context. These considerations underline the need for multidisciplinary studies, with the participation of behavioral scientists.

SUMMARY

A health questionnaire survey was performed among 970 persons, comprising a random sample of the adult population of a predominantly immigrant neighborhood of Jerusalem, in 1962-64. The instrument used was the Cornell Medical Index (CMI), which studies in the United States, Britain and Israel have shown to be of fair validity as an indicator of emotional disorder.

The prevalence rate of high CMI scores (30 or more positive

responses to the questionnaire) was 33 per cent among the men and 56 per cent among the women. The rate rose with age.

Using statistical technics which controlled the effects of age and sex, it was found that the occurrence of high scores was related to social status, status inconsistency, and nativity. Among younger adults, high scores were commoner among persons of a lower status, as measured by educational level or by occupational grade. This relationship was independent of ethnic factors. High scores were associated with a discrepancy, in either direction, between educational and occupational status, the individual's statuses being measured in relation to the educational levels and occupational grades of all persons in his age-sex group. In higher occupational grades, high scores were associated with low educational levels; and in the lower occupational grade, with high educational levels. The association with status inconsistency was not seen among younger adults. The association was not dependent upon ethnic differences. High scores were more prevalent among foreign-born persons than among the smaller sample of native-born Israelis studied. The relationships with social status and status inconsistency were not apparent among natives. Among immigrants, no consistent relationships were found between the occurrence of high scores and the region of birth or date of immigration.

The findings are interpreted as indicative of associations between emotional disorder and social status, status inconsistency, and migration. Inferences are drawn concerning the underlying etiological processes, with emphasis upon the possible influence, in this population, of status inconsistency, discrepancies between aspirations and achievements, and cultural change. It is suggested that the implications of the findings may extend beyond emotional disorder, to general or overall ill-health.

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ACKNOWLEDGMENTS

I am indebted to Dr. E. Peritz for his statistical advice.

This study is based upon data collected in the course of a study of the epidemiology of rheumatoid arthritis, supported in part by the U. S. National Institutes of Health, and directed by Professor E. Adler.