

Schizophrenia: Another Long Term Follow-up in Canada

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Bland and Orn (1978) have reported on the results of 45 first admission schizophrenics whose treatment was begun about fourteen years earlier. All 90 schizophrenic patients admitted to an Alberta mental hospital in 1963 were examined. Fifty of these patients were selected for the study, while 40 were excluded because they did not meet the stated diagnostic criteria. Another five were dropped because they were found not to be first admissions, one died, and one had killed himself before the study ended. There is no indication that diagnoses were changed during subsequent admissions, but this may be due to the rigorous original selection. Forty-three patients, less than half the original total, were followed-up for the next 14 years. At least half of the follow-up group received tranquilizers during this period. We are not told how many of these patients received electro-shock (ECT).

Fourteen years later one-half of these 43 patients were managing well with either no or only some residual disabilities. One-quarter were markedly or moderately disabled, while the rest were wholly disabled

when all the follow-up criteria were used.

During the 14 year follow-up the 43 patients averaged 15 percent of the time, or rather more than two years apiece, in the hospital. The authors concluded that the results showed an improvement on some earlier studies which found that only one-third of the schizophrenics were well while two-thirds were chronically ill. Psychiatric Capsule and Comment (1979) was even more optimistic stating that "the course and outcome seem to be more favorable than they were 25 or 30 years ago." It may be that Bland and Orn's failure to report these less cheering studies, which indicate that outcome in schizophrenia has changed little during the last 20 years, encouraged this optimism. Some of these studies can be found in Kahan (1971). In this report Kahan compared the efficacy of all commonly used treatments. Mosher and Feinsilver (1971) in a review article concluded that only about 23 percent of discharged schizophrenics were able to work productively.

Schizophrenics in England responded to neuroleptic medication as they do in U.S.A. and Canada. Johnson (1976) completed a two year prospective study on 140 schizophrenic patients admitted to hospital following a relapse. Every one had one previous episode. They were all started on long-acting phenothiazine medication. This is recognized as the most effective way of

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ensuring medication and is a better test of efficacy than using oral medication which can be avoided more readily. Eighty-three percent were still on medication two years later. One of the 140 killed himself. From the group on continuous medication 37 percent relapsed and 21 percent were readmitted. Eleven required electroconvulsive treatment. At the end of the study 25 percent were going through rehabilitation programs, 5 percent were totally unfit, 15 percent were unemployed and 3 percent were in hospital. Half of the group who were working were fit only for jobs well below their premorbid potential. Over 80 percent of the group lived with relatives who rated 37 percent as making a good adjustment and 50 percent a poor adjustment. It is likely none of the patients living with relatives made a good recovery since living with relatives is no longer considered a hallmark of well being. Johnson's data is similar to the data presented by Bland and Orn and to the Hoffer and Osmond comparison group.

A different type of comparison was reported by Bockoven and Solomon (1975). One hundred patients discharged in 1947 and followed for five years were evaluated and compared with 100 patients discharged from the same hospital 20 years later and followed five years. They concluded "The most unexpected finding of this study is that the outcome of schizophrenic patients at Solomon Center today is not very different from that reported twenty years ago for schizophrenic patients at Boston Psychopathic Hospital. These considerations lead us to question the part played by psychotropic drugs in prolonging dependency." It is clear these authors do not share **Psychiatric Capsule and Comment's** optimistic conclusion. We are not surprised by the increased dependency generated by tranquilizers. It is unlikely a tranquilized patient can be productive, the basis of independency.

Long term follow-up studies are one of the best ways of determining the nature and extent of recovery from schizophrenia and other enduring illnesses. Unfortunately, there are few such studies lasting for a decade or more. Bland and Orn must be commended for adding to our meager stock of knowledge about this vitally important topic.

Oddly enough they do not refer to a ten year follow-up study done by Hoffer and Osmond (1964), using very similar patients from the same geographical area and published 14 years earlier in the same journal as their paper. Because this study has some unusual features not found in the Bland and Orn work it seems appropriate to contrast and compare the two, which cover the period 1952 to 1978, a vital slice of psychiatric history and clinical practice.

COMPARISON OF THE STUDIES

Our study also consisted of 43 schizophrenic patients, but since they were treated in 1952 to 1953 none received tranquilizers during their first admission, but half were given electroshock (ECT). Since Bland and Orn's patients were admitted in 1963 most, if not all of them, probably received tranquilizers, for this was then the standard treatment for schizophrenia in Canada.

Our 43 cases consisted of 16 patients who were given niacin, Vitamin B3, in doses of three grams per day by mouth for 33 days, and a comparison group of 27 patients who received other treatments available then but not niacin; half of both our groups also received ECT.

Hoffer and Osmond's Two Groups

Our Vitamin B3 group consisted of every schizophrenic admitted to the Monroe Wing Psychiatric Ward of Regina General Hospital who received the niacin treatment, then early in its development. The vitamin was given for 33 days. For our comparison group we took every schizophrenic patient admitted and treated from January 1, 1952, till July 31, 1953, who was not in the B3 project. We increased the time period to enlarge our sample. These patients received standard treatment only, which did not include tranquilizers because they were not then available in Western Canada.

In the vitamin group, eight were first admissions while eight had had one previous admission; one of those eight had been in the hospital for over 5,000 days. Of

the comparison group, 22 were first admissions, four had had one previous admission, and one had had three. The vitamin treated patients were a little more chronic than our comparison cases.

Bland and Orn's Group Compared With Our Two Groups

These were all first admissions, those with previous admissions being excluded; the Saskatchewan patients were therefore more chronic than Bland and Orn's and so might be expected to have a poorer prognosis. Our comparison group had only eight males out of 27; since it is generally believed that women with schizophrenia do better than men we might expect this group to do better than either Bland and Orn's people, or our own niacin cases in which males and females were equally distributed.

All three groups had the same mean age. Only half of the Saskatchewan groups were acutely ill; presumably all the Alberta patients were, but this is only a guess for no data is given with respect to the duration of the illness before their first admission to a hospital.

There was one other major difference. The Alberta patients were kept in the hospital much longer for their first admission than those from Saskatchewan. Between 1950 and 1965, mental hospitals usually kept their patients much longer than did psychiatric wards in general hospitals. This is not a serious difference since the length of first admissions seems to have little bearing upon final outcome. In the 1950's, mental hospitals had longer first admissions but fewer readmissions, while psychiatric wards had shorter first admissions and more frequent readmissions. This resulted in the 'revolving door' still found in many psychiatric wards and hospitals today.

Follow-up Criteria

Hoffer and Osmond used 'hard' criteria for evaluating outcome. They concluded that no one could argue with hospital admission statistics. They assumed that psychiatric wards and admitting physicians are seldom

frivolous and would only admit patients who they believed needed to be admitted. That is patients in hospitals are as a class, while in the hospital, sicker than when in the community. The number and duration of admissions can be used as a measure of outcome and response to treatment. They had other evaluative data as well, such as clinical condition, symptomatology, etc., but decided against using this 'softer' data.

Bland and Orn also used readmission data but employed other criteria for measuring the condition of their patients. They concluded as a result of their findings that 21 percent were well according to psychiatric examination while 30 percent functioned well but suffered mild problems, 37 percent were normal by social criteria and 30 percent by economic criteria. However, when all these three sorts of data were combined only 16 percent of the whole group rated well in all categories. About 16 percent did very badly, 42 percent were in between and 40 percent had the best outcome. Table 1 shows the readmission data for all three groups, that is the two Saskatchewan groups and the Alberta group.

As this table shows, in the 1952 comparison group ten out of 27 were never readmitted, five out of 27 were readmitted only once, so that 15 out of 27 were readmitted once or less in the ten year follow-up. During Bland and Orn's fourteen year follow-up only nine out of 43 were never re admitted while 20 out of 43 were readmitted once or less.

If we measure the time spent in hospitals this was 12.9 percent for our pre-tranquilizer patients and 15 percent for their post-tranquilizer group. One suicide occurred in each of these groups which as the table shows reflects the high suicide rate among schizophrenics which we first reported twelve years ago (Osmond and Hoffer 1967, 1978). It is now generally accepted (Freedman, Kaplan and Sadock, 1975, Trotter, 1975, Tsuang and Woolson, 1977, Winokur and Tsuang, 1975) that suicide occurs only a little less frequently among schizophrenic patients than among manic depressives. Since schizophrenic patients are usually

younger when they kill themselves, the loss of "living time" is greater.

There is little evidence from these figures to indicate that the outcome of schizophrenia has improved since we completed our ten year follow-up in May, 1963.

Interesting as these figures are when both are compared with the niacin group they become of much greater significance.

Twelve out of 16, 75 percent, of the niacin

group were not readmitted in the ten year follow-up, three more had only one admission, so that 15 out of 16 compared with 15 out of 27 and 20 out of 43 for two comparison groups had one admission or less. While the pre-tranquilizer and post tranquilizer group spent 12.6 and 15 percent of their time in hospitals respectively, the niacin patients spent 0.9 percent, none killed themselves.

TABLE 1
Comparison of Follow-Up Results

Year Treated Year Evaluated	Hoffer and Osmond		Bland and Orn	
	1952 1962	1963 1977	1963 1977	1963 1977
GROUP	NIACIN	CONTROL (ECT)	TRANQUILIZER	
Number	16	27	43	
Number Readmitted				
0	12	10	9	
1	3	5	11	
2-5	1	7	17	
6+ more	0	5	6	
a) 0 and one year combined	15	15	20	
b) 2+ more	1	12	23	
Time in Hospital	0.9%	12.6%	15%	
In years	1.4	34	87+	
Suicide	0	1	1	
Suicide Rate	0	2.1/1000/yr.	1.7/1000/yr.	

It seems unlikely that the favorable effect of the vitamin can be ascribed to differences in diagnosis. In 1952, at the Monroe Wing in Regina all schizophrenics were diagnosed by their psychiatrists after consultation with the clinical director. Most of the patients were diagnosed by psychiatrists not connected with research. In accordance with this particular unit's policy Bleuler's criteria were used. In every case there was evidence of visual or auditory disturbances, often both. These perceptual disturbances were accompanied by severe thought disorder. Similar criteria seem to have been used in Alberta.

DISCUSSION

Our comparison group fared much the same as its Alberta counterpart whose members became ill a decade later. This suggests there is no compelling evidence

that the outcome of early schizophrenia, using conventional means, has improved during the last 15 years. However, there is nothing to indicate that the outcome has worsened, which, in view of recent criticisms of psychiatry, should be noted with relief.

Niacin, although given only for 33 days without other vitamins and in doses which are now considered moderate, produced a significant effect. Half of this group received ECT, but then so did half of our comparison group. Bland and Orn did not discuss the use of ECT upon their patients.

In the final paragraph of their ten year follow-up Hoffer and Osmond wrote this; "there can be no a priori reason why massive nicotinic acid should not alter the outcome of schizophrenia. Apart from prejudice or sheer inertia, it is worth trying because it meets one of the major requirements of any treatment, that of 'doing the sick no

harm.' Two thirds of those who develop schizophrenia are more or less crippled by it and return to hospitals for periods ranging from a few weeks to several years. Our study suggests that at least half of the crippled two thirds may be well if given nicotinic acid and some of the others will be helped. We think that these young people who are doomed to be in and out of mental hospitals for most of their lives, have a right to be given nicotinic acid even if medical men are skeptical. Nothing can be lost and as we have shown, belief or skepticism seems to have very little bearing on the effects of this treatment."

This end piece to that earlier paper is far more pertinent today than when it was written because there is now evidence from studies using techniques only developed recently that niacin and other vitamins act on the central nervous system in ways which seemed unlikely a few years ago. For instance niacinamide has been shown to have benzodiazepine-like effects in animals (Mohler, Pole, Cumin, Pieri and Kettler 1979), while ascorbate has recently been credited with a central action similar to halo-peridol (Tolbert, Thomas, Middaugh and Zemp 1979; Thomas and Zemp 1977). Since niacin, ascorbate and other water soluble vitamins are much less toxic than either major or minor tranquilizers, and since the evidence that tranquilizers improve the long term outcome of schizophrenia is poor, it is time for those treating newly diagnosed schizophrenia to consider niacin, niacinamide, ascorbate, and other mega vitamins seriously. We have never suggested that major tranquilizers have no place in psychiatry; they have an important part to play, having reduced suffering and saved lives. As with other powerful medicines, their benefits must be balanced against a variety of side effects among the most distressing of which are the fairly frequent tardive dyskinesia, akathisia and the fortunately much less frequent but even more distressing akinetic mutism.

Fifteen years ago our ten year follow-up received little attention, which was understandable since that was the heyday of tranquilizers. Today when, as has so often happened before, a widely used remedy has be-

come a source of iatrogenic disease, it would be less understandable and inexcusable if our colleagues failed once again to notice these and other findings which indicate that means are available to change the course of early schizophrenia for the better.

This is hardly an academic matter; our comparison group of 27 patients spent 34 years in the hospital, while Bland and Orn's 43 patients were hospitalized 86 years. A total of 70 patients then spent 120 years in hospitals. What would have happened had these two comparison groups been given niacin and responded to it as did our original 16 who spent a total of 1.4 years or one month apiece in hospitals? The two comparison groups would have spent 2 and a half and 7 and a half years in the hospital respectively and about 110 years of hospital treatment would have been saved. Psychiatric patients today cost at least \$20,000.00 a year, so the very small expenditure on vitamins, a few ten thousands at most, might have saved over two million dollars. This does not touch on the loss of productivity caused by young adults being in hospitals for years on end, or the anguish of our patients and the sufferings of their families, but then these have no cash value.

Our Saskatchewan patients were a mixture of acutely ill and those who were more or less chronically unwell. Neither we nor Bland and Orn were able to seek out patients before they reached hospital, yet our findings and those of many others have shown that patients have often been ill for many months or years before their first admission.

The vague hopes and sometimes pretentious statements of those who favor a preventive psychiatry have led to no general scheme of early case finding as in tuberculosis, diabetes, hypertension, cancer etc. Mental health centers and psychiatric hospitals do not seem to have early case finding, even among close relatives of schizophrenics, as a routine activity. Yet with diabetes, hypertension and tuberculosis this is done frequently. There is good reason for this omission; early case finding is

of little use unless a safe, cheap treatment is available which produces no more discomfort than the incipient illness.

Bland and Orn's paper and those of many others (Kahan 1971) show that tranquilizers are unsuitable for this preventive role: first, because there is no evidence that they reduce the chances of long term illness or even impede its progress; second, because as has often been shown, the major tranquilizers have a variety of side effects which are often inconvenient, sometime alarming, and occasionally dangerous. It seems unlikely that well or at least still functioning people would agree to take these substances if given an opportunity for informed consent. Since many of those most in need of early treatment are at school or college, the fact that many people find tranquilizers make learning more difficult would be an added disadvantage.

Orthomolecular treatment, which includes megavitamins, taking mineral and other nutritional substances, avoiding "junk" foods, a tension reducing regime, combined with a careful monitoring for potential illness using the HOD and EWI tests (Hoffer, Kelm, and Osmond 1975, El Meligi and Osmond 1970), biochemical tests such as that for krypto-pyrrole (Pfeiffer 1975) represent a feasible preventive approach. Early case finding and preventive treatment of this kind should receive serious consideration, particularly since no other is available.

Preventive psychiatry, with the exception of the seldom discussed elimination of general paresis and the pellagra psychosis, has been more a matter of high sounding slogans and great expectations than policies and practical programs. There have been vague schemes for producing an ideal mother-child relationship, or building a better world. While no one can object to such activities, there is no evidence that this would prevent schizophrenia. These schemes for general betterment can now be replaced by modest programs aimed at vulnerable people. These might include first order relative • of those known to be affected with schizophrenia, counselling services in schools, colleges and juvenile courts where so many young sufferers of schizophrenia first came to notice and so would be accessible to early treatment.

Our colleagues Dr. Cynthia Bisbee and Dr. R.

Mullaly (Osmond et al., 1978) have already developed a well tried method for teaching patients how to become responsible. This has been used successfully with very ill schizophrenic patients and will probably be even more effective with those not yet gravely damaged.

Over the years, we have accumulated some clinical evidence suggestive, but not conclusive, that megavitamins, other nutrients and procedures used in orthomolecular psychiatry are particularly effective in what can be termed the subclinical, preclinical, prodromal or precursive phase of schizophrenia (Hoffer and Osmond 1976). Patients have written extensively about this aspect of their disease; Thomas Hennell's (1976) notable book **The Witnesses** has a vivid description of the ebb and flow of his developing illness.

Our modest resources combined with long standing and vocal opposition from the psychiatric establishment (Task Force Report #7, 1973) has made it impossible to undertake systematic sustained studies of this kind. We have, however, been able to treat a few selected cases in this very early phase because parents and other relatives who have themselves suffered from schizophrenia, having recovered with megavitamins, have been anxious for members of their families developing this illness to be treated as early as possible.

Medicine is being held far more accountable today than it was fifteen or twenty years ago, so it would be imprudent to neglect these findings. With a growing distrust of all authority, some members of the public are less convinced than in the recent past that medicine is a benevolent and altruistic institution. The refusal to examine and test a simple, inexpensive and innocuous treatment which might reduce the recurrence of early schizophrenia and be a useful agent for prevention in very early cases would be likely to increase suspicion and lessen public trust in psychiatry. Few would relish this misfortune which could only harm our patients, their families, the public and our profession.

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Editors' Note

This paper examines two long-term follow-up studies of schizophrenic patients. One, covering the decade 1952 to 1962 was done by us; the other by Drs. Bland and Orn lasted for the fourteen years from 1963 to 1977. Follow-up studies of such duration are rare and one must make full use of them. Since both these papers had appeared in Acta Psychiatrica Scandinavica, it seemed to us only proper that this one too should be published in that journal. However, the present editor of the Acta Psychiatrica Scandinavica received this paper boorishly, suggesting that we send a one page letter instead, which we consider an absurd idea for such an important topic. We therefore decided to publish the full paper here.

If one compares our earlier evidence with that provided by Bland and Orn which they did not do, their belief that prospects for schizophrenic patients have improved somewhat during the last few decades is not sustained. A comparison between our ten year and their fourteen year follow-up shows that when conventional methods have been used, there is little difference between the two groups. False optimism encourages complacency.

More important, when Bland and Orn's cases and ours which did not receive niacin are compared with our sixteen cases who received niacin it is obvious that both groups fared much worse. The new Canadian study thus quite inadvertently supports our earlier findings.

Letters to the Editor

To The Editor:

I have long admired John Ott, and encourage all my patients to increase the availability of ultra violet, and to be aware of their light environment.

After seeing him demonstrate a kinesoid method of evaluating the effect of pink and yellow light I immediately purchased pink, amber, green, and grey sunglasses. A routine part of my neurological examination is hand strength measured by dynamometer, and reaction time. I have examined several score patients in a random schedule of no glasses, pink, amber, grey and green. There is absolutely no difference between and among the hand strength or reaction time demonstrated in any condition.

Moreover, I have been unable to find any patient who can resist a firm push of the arm, held at 90 degrees out from the body. Assuming that my own personal strength (or that of naive lab assistants I used in this study) is too great, I have used a large number of small women and children as pushers and with no exceptions I have not had a subject who can resist and hold the arm at extension. Like radiesthesia or medical dowsing the kinesoid method of pressure against the extended arm is a splendid example of self hypnosis of an eager operator and a naive subject. I will cheerfully undertake to convince an audience that the pressure exerted is real, and

the resistance overwhelming. However, the dynamometer is less suggestible.

I think such reports are a danger to Orthomolecular medicine and critical notice must be taken. I am now undertaking animal and human experiments in the pink room.

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To The Editor.

I would like to comment on Dr. George von Hilsheimer's letter of 13, December, 1979, and offer several suggestions that I hope may be helpful in clarifying the problem of his not being able to find any difference in the hand strength or arm muscle of any of a large number of his patients wearing pink, amber, green or grey sunglasses.

Normally, I find many people - and especially men of a husky build who play tennis, squash or exercise a reasonable amount -have sufficient muscle strength in their arms so that they would be able to resist the downward push of a small child.

The fact that Dr. von Hilsheimer is not able to find any difference in the strength of any of his patients, I believe, indicates he apparently must have missed the part of my

lecture and demonstration in which I stress that the muscle test does not always work.

If there are any ordinary fluorescent lights turned on in the area where the test is being conducted, the person's muscles will already be in their weak condition and then will not show any further difference between wearing the different colored glasses. Therefore, all gaseous discharge lights that include not only fluorescent but also sodium vapor and mercury vapor must be turned off during the test. In fact, the muscle test may be used to show the loss of strength caused by fluorescent lights and demonstrate the need for full spectrum radiation-shielded fluorescent fixtures, as no loss of muscle strength occurs under this new, improved lighting.

The person being tested will have full muscle strength outdoors in natural daylight, but ordinary window glass or eyeglasses that stop the transmission of the normal amount of ultraviolet in outdoor daylight will noticeably weaken the muscles.

Any battery operated wrist watch must be removed and placed at a distance of at least five feet from the person being tested, as these watches also grossly weaken muscle strength. Other electronic devices, such as battery operated hand-held calculators, must be at least 20 feet away, and the ordinary, most common type of smoke detector, that uses a radioactive type of material or a negative ion generator, must be at least 50 feet from the subject being tested. The distance for microwave ovens varies from six to fifty feet or more, depending on the model and what is in the oven. Black and white T.V. but not color (at least as far as loss of muscle strength is concerned) video display terminals, including many new type children's toys that use them, certain radiation type medical monitoring equipment and burglar alarms, automatic radio type garage door openers and hearing aids are all also on the list of electrical devices that cause gross loss of muscle strength and very likely other human health and behavioral problems that are influenced by electromagnetic radiation.

The distances apply vertically as well as horizontally, so that smoke detectors two or

three floors above or below must be considered. If either the person being tested or doing the test is wearing clothing of synthetic material, such as polyester or imitation vinyl-leather, the muscle strength will be grossly weakened so that there will be little further difference in strength noticed from wearing the different colored lenses, whether the fluorescent lights are on or off.

Preliminary tests using a new type blood pressure dynamometer also show a similar loss of strength in the heart muscle, which has many far-reaching implications.

I am further pleased to advise that I was invited to spend two days at the central clinic of the National Institutes of Health in Bethesda, Maryland, and demonstrate the effects of wearing different colored sunglasses and the difference between ordinary fluorescent lights, turned on and off, as well as the new type of full spectrum radiation-shielded fluorescent tubes and fixtures, by Russell Jaffe, M.D., Ph.D., Senior Staff Scientist, CCS, CPD, CC.

On 6 December, 1978, Dr. Jaffe wrote me on official stationery of the Department of Health, Education, and Welfare, National Institutes of Health, confirming the difference in muscle strength resulting from the wearing of different colored sunglasses and different types of fluorescent lights. His letter of confirmation was included with an article of mine entitled "The Dual Function of the Eyes," published in the June 1979, Volume 21, No. VI issue of The Southern Journal of Optometry.

I therefore respectfully recommend that Dr. von Hilsheimer carefully checks the area where he conducts the muscle test on his patients for any of the electronic devices or other conditions mentioned above that must be considered before so positively concluding that, "Like radiesthesia or medical dowsing the kinesoid method of pressure against the extended arm is a splendid example of self hypnosis of an eager operator and a naive subject."

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