

STUDIES ON ALBINISM IN THE SOUTH AFRICAN NEGRO

I. INTELLECTUAL MATURITY AND BODY IMAGE DIFFERENTIATION

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Summary. Twenty-eight South African Negro albinos have been tested for intellectual maturity and body image boundary characteristics and a comparison made with carefully matched normally pigmented controls. The albinos were found to be more intellectually mature than the controls but the control group showed slightly more diffuse body image boundary differentiation than the albino group.

Introduction

Barnicot (1952) showed that the incidence of oculocutaneous albinism in the Lagos area of Nigeria was 1 in 5000, four times commoner than in the Caucasoid populations of Europe. An incomplete survey in the Ciskei and Transkei regions of South Africa, carried out by the late Dr George Oettlé (1963) showed that the incidence was probably even higher there (1 in 3759) than in Nigeria. A report from the Congo (now Zaire) (Gigase (1962) personal communication to Oettlé, 1963) suggested that the condition was not as common there: none in 50,000 people in the Kivu area.

The high incidence of albinism in, at least, parts of Africa is perhaps difficult to explain when the albino, living in tropical and sub-tropical regions, would appear to be at such an obvious selective disadvantage compared with his normally

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pigmented fellow-men. His chances of developing a squamous-cell carcinoma are at least 10 times as great as American Whites (Oettlé, 1963).

Although suspected of being a heterogeneous condition for many years, it is only in the last decade that oculocutaneous albinism in man has been shown to occur in three varieties, distinguishable on the basis of clinical, biochemical and morphological characteristics. These have recently been summarized by Witkop (1971) and the varieties are known as tyrosinase negative (*t-*), tyrosinase positive (*t+*) and yellow mutant (*ym*).

The relative ease with which the various types of oculocutaneous albinism can now be delineated, together with the suspected extremely high incidence of the condition in South Africa, has encouraged us to embark upon an investigation into a number of aspects of this interesting genetic condition.

Preliminary results of our survey in the large complex of Negro townships in Johannesburg indicate that the incidence is about 1 in 4000. The detailed results of this investigation will be published in due course (Kromberg & Jenkins).

The objects of the present communication are two-fold. First, it reports the degree of intellectual maturity attained by a sample of Negro albinos. Second, it attempts to analyse body image boundary differentiation in the same sample.

Our first area of concern, namely intellectual maturity, was suggested to us by the existence of anecdotal evidence that albinism may be associated with mental retardation. Such anecdotal evidence is suggested in the case report of Segers (cited by Stewart & Keeler, 1965). On the other hand, Beckham (1946) using a bigger sample than Segers of albino Negro boys and girls found that differences in intelligence between this group and a group of their siblings did not approach significance. In a later study, Stewart & Keeler (1965) concluded: 'There was no evidence to support Segers' findings that mental retardation is related to albinism, if Moon-child albinism is genetically identical with the albinism common to other populations.' Their sample consisted of six albino and six brown control San Blas Indians. The authors expressed a hope that later studies with bigger samples would help resolve existing doubts in this area.

Previous work by Manganyi (1972) suggested the possible significance of cultural factors in the socialization and development of body image. The findings of that study as well as the results reported here are part of a broadly conceived exploration of the sociology of the body image. We adopt the view that the psychological significance of being black, for example, has psychic implications beyond the quality of blackness; that, in effect, affect the body image in very fundamental ways since the body is 'a point of view' (Merleau-Ponty, 1962). The body is a way of 'being-in-the-world', of experiencing the subjective and objective world: of saying who one is.

It needs no gainsaying that albinism must in itself constitute a very complex mode of being-in-society. In conditions where skin colour is a fundamental societal concern, theirs must be a state of utter marginality. For these and other reasons,

we considered that the body image must constitute an important area of concern. The exploratory nature of the study suggested to us a very fertile possibility for the generation of hypotheses for further study.

Our study was designed to test the following hypotheses:

- (1) Albinos are intellectually less mature than normally pigmented controls.
- (2) Albinos are less differentiated in terms of their body image boundary characteristics compared with normally pigmented control subjects.

Materials and methods

Sample

We had planned to study a sample size of 40 albino children in the Negro residential areas of Soweto, Johannesburg. Methodological considerations ultimately reduced our final sample size to 28; there were seventeen boys and eleven girls. All the children except one were attending ordinary Government schools. The one, a 12-year-old girl, attends a school for the blind but her visual acuity was R6/60 L6/60. None of the others had visual disturbances severe enough to require special educational facilities and none had attended hospital or clinic on account of disabilities caused by their albinism.

The controls were 28 boys and girls (matched for sex) living in the same area and included in the sample if they fell in the same age and school categories as the test subjects.

The two groups were comparable. For the albino group, the mean age was 11.8 years ($SD \pm 2.7$) with a range of 7–16 years and for the control group of subjects it was 11.9 years (± 2.4) with a range identical with the test subjects. The mean number of years of formal education for both the albinos and for the control group of subjects was 4.5 years (± 2.3).

Procedure

The Draw-A-Person Test was used to assess intellectual maturity and sophistication of body concept. This test has been used by psychologists and anthropologists in various cultural settings where no standardized tests existed as an index of intellectual development in children. Standard procedure requires the production of two human figure drawings, a male and female.

In this study, every subject was required to produce a third drawing (self-portrait, drawing C) in addition to the male and female figures (drawings A and B). One hundred and sixty-eight drawings were collected and analysed on the basis of two well-known scales. The first is Harris's (1963) scale for intellectual maturity and this requires a scoring of each drawing on a points basis related to the presence or absence in a drawing of specific features such as body parts (eyes, pupils, hands, neck, etc.) and aspects such as body part proportion. There are 73 scoring points for male figures (Man Scale) and 71 for female figures (Woman Scale). Harris's

test manual provides tables for the conversion of raw scores into standard scores—on the basis of the subject's sex and age.

The second scale used in the analysis of the data is Witkin *et al.*'s (1962) Sophistication of Body Concept Scale. This is a five-point scale intended to assess human figure drawings from the most sophisticated to the most primitive. The level of sophistication is determined by clearly stated criteria reflecting form level, identity and sex differentiation, and level of detailing. Form level refers to whether the figure shows a definite shaped body outline such as ovals, rectangles or straight lines, etc. Identity and sex differentiation refer to whether role assignment in terms of sex, clothing and features is adequate or inadequate. Level of detailing refers to general detailing of figure with respect to body parts, clothing, etc.

The sophistication of body concept scale is used to study the 'sense of separate identity', which may be understood through the exploration of the body image or concept which is a mental representation of an individual's physical self. It is known that in individual development, the body concept is progressively experienced as having definite limits (boundaries) which help an individual to experience himself as more or less segregated (differentiated) from his environment.

A fuller description of the scales and the technique used in the analysis of the protocols may be found in Harris (1963) and Witkin *et al.* (1962).

Two independent judges scored the drawings, scoring A and B separately and then taking the average standard score (in the case of Witkin's scale) for the final analysis. Drawing C was scored independently by the same two judges. The inter-judge correlation coefficients were calculated and the following results obtained:

(i) for the intellectual maturity scale: for the albino group the correlation coefficient for drawing A was 0.94, for drawing B 0.90 and for drawing C 0.92; for the control group for drawing A 0.94, for drawing B 0.96 and for drawing C 0.93;

(ii) for the sophistication of body concept scale: for the albino group the correlation coefficient for drawings A-B was 0.90 and for drawing C 0.88; for the control group for drawings A-B 0.85 and for drawing C 0.85.

Results

The results of the intellectual maturity measure are shown in Table 1 and they reveal that, with the exception of the values for drawing C, there were significant differences between the albino and control group of subjects. The albinos as a group showed a slightly higher level of intellectual maturity thus reversing the suggested direction of the difference between the two groups. The self-portrait results are very interesting and are discussed more fully below.

The results relating to the body image boundary differentiation are presented in Table 2.

Table 1. Intellectual maturity in albinos and controls*

Drawing	Albinos†		Controls†	
	Mean value	SD	Mean value	SD
A	85.5	16.7	80.7	13.4‡
B	85.6	17.1	82.7	14.3‡
C	83.9	14.3	82.8	12.8

* See text for explanation.

† $N = 28$, for each group.

‡ Difference significant at the 2% level.

Table 2. Sophistication of body concept in albinos and controls*

Drawing(s)	Albinos†		Controls†	
	Mean value	SD	Mean value	SD
A-B	3.0	1.4	3.2	1.1‡
C	3.0	1.3	3.1	1.0

* See text for explanation.

† $N = 28$, for each group.

‡ Difference significant at the 2% level.

The mean values for the body concept sophistication demonstrate that there was a significant difference in level of body image boundary differentiation negating our predicted direction.

Discussion

We pointed out earlier that anecdotal evidence suggested a possible relationship between albinism and mental retardation. This was not in the least supported by our findings. In our sample, the albinos performed slightly better than the control group of subjects. It seems to us that the conclusion arrived at by Keeler (1964), is pertinent in this regard. He wrote then:

'The IQ of Moon-child albinos that we studied is not in the mentally retarded range, but they do suffer psychiatrically. The Moon-children led an abnormal life, restrained in many activities by their physical condition. They are largely rejected by the opposite sex. The inability to compete physically often leads them to sedentary and intellectual pursuits. Because of their weakness and rejection they develop anxieties to which they react by over-compensation or by regression.'

Our findings on intellectual maturity should not be considered to suggest that albinos have higher IQs than normal control subjects. What the findings demonstrate is that albinos have intellectual status well within the normal range. We take

the view that the slightly better performance of the albinos in our sample is related to the compensatory mechanisms suggested by Keeler.

The body image boundary differentiation results are intriguing. We had expected that the albinos would, as a result of their special position in African society, have body boundaries characterized by less definiteness as compared to the control group of subjects. It is important to point out that both groups expressed body concepts which were really intermediate between relatively well differentiated and diffuse ones. But the body concepts of the control group of subjects were more diffuse; more in the direction of indefiniteness than those of the albinos.

We understand this finding to suggest a very real possibility that the body image results may be an artifact of the intellectual maturity dimension, and thus were subject to the same dynamic mechanisms which probably accounted for our results in that respect. Of more interest are the data relating to the self-portrait in Table 1.

Here we find that the albinos had more problems creating a self-portrait than they did with the other two renderings. The control group, on the other hand, fared better with the self-portrait than with the other two drawings. There is in this observation a very vivid suggestion that the albinos found themselves confronted with a negative self-evaluation (identity) and were unable significantly to contaminate their projections.

Since the possibility of diffuse body boundary features appears to be a consistent possibility in the populations we study, we are continuing to interest ourselves in this problem. It seems that there are socio-cultural situations which tend to nourish the development of diffuse body boundary characteristics. Should this be so, it is a very serious matter indeed since the body image boundary has been found to be related to many varied areas of personality functioning.

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