

NAIL-BITING IN SUBNORMAL PSYCHOPATHS

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In the course of clinical assessment and testing of Rampton male patients, it was noted subjectively that a large proportion of them appeared to be severe nail-biters. This oral habit has long been associated with tension, 'nervous' disposition, and maladjustment to life. Opinions such as those expressed by Sammon (1965) about the widespread incidence of this symptom in normal adults, have often been aired without the support of factual evidence. It may be true that the pressures of modern civilization are creating more personality problems than before, because of the increasing speed and complexity of social existence. It is not, however, scientific to postulate such a relationship without adequate data to supplement it. Very few studies of this habit have been made in adult populations, and the statements about its mental implications are flatly contradictory in many instances.

Research with American children (Malone and Massler, 1952) and English children (Birch, 1955) indicates that nail-biting is linked to enuresis, and is extremely common in random samples taken from normal school populations. Ten per cent of children attending ordinary schools are estimated to be neurotic or maladjusted (Burt, 1952; Long, 1941), so that the figures of 40%—60% quoted for children who bite their nails in the ordinary community is far in excess of the abnormal personalities inherent in the group structure. The incidence appears to be lowest in the under five year old group, where thumb-sucking predominates (Koupernik, 1964). From six to thirteen the incidence rises steadily to a peak of 65% (Birch, 1955) in school-boys, and declines again to around 45% about age sixteen.

Anderson (1959) stated that 38% of the students in a Manhattan High School bit their nails, though only 22% did so severely. The suggestion is, that as the adolescent period comes to an end, there is a *continual reduction in the numbers of people biting their nails*. It might be expected that fully mature adults would have an even smaller incidence of the habit pattern.

Only two reports could be found that quoted actual figures for normal adults. Lowry (1965) reviewed the statistics for Air Force personnel and found that 37% of a sample of American Air Force recruits (N=500) habitually and currently bit their fingernails. Another five-hundred recruits who had been referred to a psychiatric unit for investigation showed an incidence of 57% nail-biters. This difference was statistically significant ($P < .001$). When this study was compared with a wartime study of over 2,000 Naval recruits (Pennington and Mearin, 1944), it was discovered that the wartime recruits bit their nails significantly less than the peacetime ones (23% against 37%). There was no obvious explanation for this apparent paradox, since enlistment standards were lower during the war. This means that between 20% and 40% of apparently healthy recruits for the American Armed Forces can be expected to bite their nails. No figures were found for the general population of America, nor for normal British adults. These figures do support the concept of a declining incidence in adults to some extent, though it would appear to flatten out at maturity, and run at a higher percentage level than might otherwise have been anticipated. One major factor, which was not mentioned in the Lowry study, was the average age of wartime recruits. Presumably, older men would be accepted during the war, but not during a non-combatant period. If the wartime recruits were significantly older, this would provide a possible explanation for their lower incidence in nail-biting.

The only British figures discovered for an abnormal adult population were those provided by Craft et al. (1962). 54% of young psychopaths (mainly in the 15-25 year range) bit their nails. This compares with the figure of 57% in unstable American Air Force recruits quoted above. Craft's norms are not directly comparable with the Rampton percentage because of the age difference between his group and the present one. The incidence in older psychopaths may be expected to be somewhat lower than for younger ones.

The pathogenesis of nail-biting is attributed to many different factors, and the habit is interpreted as an accompaniment to varied abnormal mental conditions. Kanner (1948) associates the habit with exclusively psychopathic characteristics. Soulayrac and Shentoub (1962) attribute to it masturbatory overtones that disappear, in normal people after a certain stage of maturation, but which persist in mental retardates and psychotics. Koupernik (1964) sees the habit as the product of an unresolved Oedipal conflict issuing in a self-mutilatory attitude with fixation at the oral stage of development. As a pure habit, he sees little difference between it and other oral practices such as kissing, smoking and chewing tobacco. All serve the function of reducing nervous tension. Nail-biting is differentiated from the other habits because it involves hostile treatment of one's own body, implying that the person to some extent regards his own flesh as alien.

It was felt that the subject was worth exploring further in a sample of English abnormals, since it might provide another useful means of delineating the problems posed by Rampton offenders.

METHOD

A year's sample of Rampton male patients was studied as the abnormal group (N=87). This number represented the patients admitted from June 1965 till June 1966. They were closely observed on the Admission Ward by the Charge Nurses, and the presence or absence of the habit noted.

All patients received a Wechsler Verbal I.Q. test and a behavioural rating from the Charge Nurses on the Admission Ward. An Eysenck Personality Inventory was administered to as many were judged to be intellectually capable of responding (I.Q. more than 60).

(1) Ages of the patients

The average age of the patients was 26.1 (Standard deviation 7.5) years.

(2) Incidence of nail-biting in patients

Table I shows that the incidence in patients equates almost exactly with that of American Air Force recruits (Lowry, 1965).

TABLE I			
Incidence of nail-biting in British subnormal psychopaths, and American normals.			
	<i>N.B.</i>	<i>Non/N.B.</i>	<i>Totals</i>
Patients	33 (38%)	54 (62%)	87 (100%)
Air Force Recruits (American)	185 (37%)	315 (63%)	500 (100%)
No significant differences			
N.B.=Nail-biters Non/N.B.=Non-nail-biters			

(3) Ages of nail-biting, and non-nail-biting patients

There was no significant difference between the ages of the two groups of patients formed by the criterion of nail-biting ($CR=0.822$). The nail-biters were about a year younger on average (25.5 years; Standard deviation=7.45, compared with 26.9 years; Standard deviation=7.70), but it could not be maintained that age was directly related to the habit in patients.

(4) W.A.I.S. and E.P.I. scores of nail-biting, and non-nail-biting patients

No significant intellectual differences in Verbal ability were found between the groups, though the nail-biters were slightly lower on average than the non-nail-biters (73.8; Standard deviation=12.9, compared with 75.2, Standard deviation=11.9; $CR=-.50$). Similarly, both groups closely resembled each other in E.P.I. scores (see Table II). There would appear to be no significant connection between

TABLE II

Comparison of E.P.I. scores in nail-biting and non-nail-biting patients. (Five N.B. and eight Non/N.B. were incapable of answering the E.P.I.)

Patients	Neuroticism		Extroversion		Lie Scale		Total
	X	S.D.	X	S.D.	X	S.D.	
N.B.	10.9	4.79	11.3	3.7	4.4	2.24	28
Non/N.B.	10.0	5.75	11.6	3.6	4.2	2.05	46

No significant differences

TABLE III

Comparison of E.P.I. scores of severe nail-biters and moderate or occasional nail-biters in Rampton patients (separated at the median).

(a) Neuroticism Scores

	<12	>11	Totals	
Severe Nail-biters	9	9	18	No significant difference.
Non-severe Nail-biters	5	5	10	
	14	14	28	

(b) Extroversion Scores

	<12	>11	Totals	
Severe Nail-biters	10	8	18	No significant difference.
Non-severe Nail-biters	4	6	10	
	14	14	28	

(c) Lie Scale Scores

	<5	>4	Totals
Severe Nail-biters	6 (33%)	12	18 (64%)
Non-severe Nail-biters	8 (80%)	2	10 (36%)
	14	14	28 (100%)

Chi-square=3.89 (with Yates' correction), $P=.05$

the presence of the habit, and basic personality structure or symptomatology as revealed by the two dimensions of Extroversion and Neurosis in the questionnaire administered. It is perhaps useful to note that the nail-biters *were* higher in Neuroticism score than the others, but neither group differed from the general population means quoted in the handbook.

Consideration was given to nail-biters alone. It was found that those rated severe and habitual did not differ from the moderate or slight nail-biters in Neurosis and Extroversion scores. But there was a significant difference in the Lie Scale distributions. Severe nail-biters obtained much higher scores than the non-severe nail-biters. (see Table III). They were obviously a great deal more defensive about admitting common personality weaknesses and moral weaknesses than the others. Since a high Lie Scale score is negatively associated with Neuroticism score (see Section 9), the implication is that the severe nail-biters should perhaps have obtained a higher Neuroticism level than they reported for themselves.

It is of interest to note that 64% of the nail-biting patients at Rampton in fact possess a severe and habitual form of the habit.

(5) Sources of Admission of Nail-biters and non-Nail-biters

An analysis was made of the figures representing the various institutions or Courts of Law from which patients had been transferred to Rampton. Table IV displays the resultant breakdown in terms of the two criterion groups of patients.

TABLE IV

Comparison of the sources of Admission in nail-biting patients and other patients (N=33).

	<i>Nail-biters</i>	<i>Non-nail-biters</i>
Local Hospitals	10 (30%)	17 (31%)
H.M. Prisons	9 (27%)	8 (17%)
Courts of Law	11 (33%)	27 (50%)
Approved schools or other Inst.	3 (9%)	2 (2%)
	<hr/> 33 (100%)	<hr/> 54 (100%)

Interestingly, the nail-biters show a fairly regular tripartite division in the source of their referrals among (a) regional subnormality hospitals; (b) Her Majesty's Prisons; and (c) Courts of Law (with only remand experience in prison whilst awaiting either trial or psychiatric exemption from standing trial). By contrast, 50% of the non-nail-biting patients came directly from Courts of Law. This does not necessarily mean that the latter group have had no institutional experience prior to their court appearance, but possibly the incidence of such experience will be somewhat lower amongst non-nail-biters.

	Nail-biters	Non-nail-biters
From Court	11 (33%)	27 (50%)
Not from Court	22 (67%)	27 (50%)
	33 (100%)	54 (100%)

Chi-square=2.304; P=>.1

The suggestion from these figures is that institutionalization may be a more prevalent factor in the patients who bite their nails, than in those who do not, but the difference is barely significant.

(6) Offence patterns in nail-biters and non-nail-biters

The two groups of patients were compared in several offence patterns common amongst Rampton males (McKerracher, Street, Segal, 1966). Table V lists the comparative incidence of the offences or misconduct present in their case histories. Only in larceny was there an acceptable level of statistical difference between the groups. A higher percentage of nail-biters had either previous convictions for larceny, or previous records of having committed acts of stealing for which they were not convicted. There was also a tendency for proportionately more of them to have committed indictable aggressive offences than non-indictable, compared with the other patients, but this was not statistically significant. A similar trend was noted in the incidence of arson offences, but again this did not reach acceptable levels of significance, largely on account of the small numbers involved. There was no difference between the groups in the *total* number of aggressive, or sexual offences committed.

TABLE V

Comparison of offences in nail-biting patients and other patients.

<i>Offences</i>	<i>Incidences of Offences Committed</i>		<i>Chi-square significance</i>
	<i>N.B. (N=33)</i>	<i>Non/N.B. (N=54)</i>	
(1) Absconding	15 (45%)	24 (44%)	No Significance
(2) Arson	8 (24%)	6 (11%)	1.753; P=.2
(3) Aggression against the person	20 (60%)	31 (58%)	No Significance
(4) Non-indictable aggression against the person	5 (15%)	24 (45%)	1.402; P=>.2
(5) Breaking & Entering	13 (39%)	17 (31%)	No Significance
(6) Drunkenness	3 (9%)	6 (11%)	No Significance
(7) Forgery	1 (3%)	0 (0%)	No Significance
(8) Larceny **	29 (88%)	33 (61%)	5.978; P=<.02**
(9) Motor-car offences stealing & driving away	4 (12%)	11 (20%)	No Significance
(10) Sexual offences of any kind	17 (52%)	28 (52%)	No Significance
(11) Severe sexual violence (rape, attempted rape, violent indecent assault)	9 (27%)	9 (17%)	No Significance

** highly significant.

(7) Enuresis in nail-biting and non-nail-biting patients

Bed-wetting is a nuisance factor in a hospital, and never fails to receive comment from the nursing staff. Information about the relative incidence of this symptom was therefore readily available from the clinical ward reports for each patient. Only two patients were persistently enuretic. One was a nail-biter, and one was not. Three patients who had wet their beds did so only as a reaction to stressful experience. Each of them showed symptoms on first arriving in the hospital, and again on transfer from the Admission Ward to another ward. These occasions were

isolated incidents, and had not recurred after the patients felt settled in the hospital. One was a nail-biter and two were not. No obvious connection could therefore be said to exist in this hospital community sample between nail-biting and enuresis.

(8) Behavioural Ratings and E.P.I. scores compared

As a check on whether the E.P.I. was in fact measuring in subnormals what it purports to measure in populations of higher intelligence, the Charge Nurses on the Admission Ward were asked to give a behavioural rating for each patient, after three weeks' observation following admission. The degree of social interaction with the other patients, and the degree of emotionality displayed, were the two aspects of behaviour concentrated on.

On the basis of the ratings, the patients (nail-biters only) were divided into (a) rather withdrawn, or extremely withdrawn, and (b) showing average or greater than average social interaction. The E.P.I./Extroversion scores were then separated at the joint median (11.1), and the results plotted against the ratings:

E SCALE	<i>Withdrawn</i>	<i>Not Withdrawn</i>	<i>Totals</i>
E.P.I. <12 (Introverted)	9	7	16
E.P.I. >11 (Extroverted)	3	9	12
	12	16	28

Chi-square=1.728 (with Yates' correction); $P < .2$

Tetrachoric correlation = +.49

There was 64% agreement between ratings and questionnaire scores and though this fell short of acceptable significance levels, there is some indication that the test is measuring extroverted attitudes as hoped. It may be that the rating system used did not closely enough resemble the E. factor assessed by the test, thus reducing the strength of the quoted relationship.

A similar procedure was utilised in the comparison of degree of emotionality with Neuroticism scores separated at the joint median (11.5):

N SCALE	<i>Emotional</i>	<i>Non-Emotional</i>	<i>Totals</i>
E.P.I. >11	11	3	14
E.P.I. <12	5	9	14
	16	12	28

Chi-square=2.601 (with Yates' correction); $P > .1$

Tetrachoric correlation = +.64

There is 71% agreement between ratings and scores of Neuroticism. This again fell short of statistical significance probably on account of the small numbers involved. The trend, however, supported the assumption that the subnormality of the patients, and the slight rewording of the text had not unduly influenced the efficacy of the test in spreading patients along the two dimensions of Neuroticism and Extroversion.

(9) Intercorrelations on the E.P.I. Scales

Interestingly, the intercorrelational matrix of E.P.I. scores (for nail-biters and non-nail-biters together) suggests that the dimensions are still not completely orthogonal in an abnormal group (N=74). This corresponds with the pattern found in

earlier unpublished work on Rampton patients using the Maudsley Personality Inventory. (McKerracher, 1966).

	<i>Neuroticism</i>	<i>Extroversion</i>	<i>Lie Scale</i>
Neuroticism	+1	-.323**	-.344**
Extroversion		+1	-.186
Lie Scale			+1

**P=.01

Neuroticism is still negatively associated with Extroversion in this subnormal and psychopathic sample. It is also significantly correlated in a negative direction with lying, or general defensiveness about admitting common personality weaknesses. The relationship between lying and Extroversion scores is more tenuous, but does suggest that a defensive attitude might result in a slightly more Introverted score being obtained than is probably true of the actual personality structure of the patients.

DISCUSSION

Differences between America and Britain in culture patterns and tempo of existence make American norms unsuitable for comparison with results obtained in abnormal British groups. It is interesting that Rampton patients do not show a higher incidence of nail-biting than quoted for stable American subjects. It would seem that the incidence in hospitalised psychopaths is no greater than that expected in a specially screened sample from the normal community.

In Rampton patients there was no link between enuresis and nail-biting, nor was there any significant difference in reported neurosis, extroversion, or Lie Scale scores between those who bit their nails and those who did not. This suggests that the habit is a crystallised formation of a residual nature from which the original surge of tension and conflict have ebbed. However, the facts that (a) significantly more of the nail-biters committed cases of larceny; (b) more of them perpetrated indictable aggression offences and crimes of arson; and (c) less of them came direct from Courts of Law, do indicate that there are possible differences in offence patterns and institutional experience which have implications for personality structure.

The degree of nail-biting as a habit pattern seems to be important. Moderate and mild indulgers differ from severe cases in being less prone to prevarication in their answers during a questionnaire technique, and also in probably possessing fewer neurotic qualities. The fact that there is a slight tendency for nail-biting patients at Rampton to have committed more crimes of arson than other patients is worth remarking on, in the light of findings reported by McKerracher and Dacre (1966). There it was demonstrated that arsonists displayed greater overt personality disturbances than other patients. Severe nail-biting in Rampton patients is possibly a clinical sign of such marked personality disturbance.

It is useful to note that the E.P.I. correlates sufficiently with behavioural estimates by Charge Nurses to warrant the assumption that the slight textual changes made, to suit subnormal comprehension levels, have not drastically affected the results. It is interesting that in the amalgamated sample of nail-biters, no significant departures from the scores expected in a normal population were evident. This corroborates the E Scale findings of earlier unpublished work on Rampton patients using the Maudsley Personality Inventory, but is at variance with the M.P.I. N Scale results. In the latter instance the Rampton patients were significantly higher than the mean for the general population ($X=26.0$ of 19.9). This suggests that the E.P.I. is not so useful as the M.P.I. in discriminating Rampton patients from normal

populations on the N Scale. Perhaps if N Scale corrections based on Lie Scale scores were applied, the discriminating power of the E.P.I. would be improved.

SUMMARY

Thirty-eight per cent of a year's sample of male admissions to Rampton Hospital (N=87) were found to bite their nails. Sixty-four per cent of this number did so severely. These incidences were not significantly different from American Air Force norms based on stable recruits. From the present research findings it would seem that the practice of nail-biting 'per se' does not therefore discriminate between normal and abnormal personalities. However, for abnormal personalities resident in Rampton Hospital, there were differences between those who bit their nails and those who did not.

The nail-biting patients tended to come direct from hospitals or prisons rather than Courts of Law. They had histories of committing significantly more larceny, slightly more indictable aggressive offences, and slightly more crimes of arson than other patients. No significant differences were found in any of the E.P.I. scales between nail-biting patients and patients without habit. When nail-biting patients were considered as a separate group, it was found that severe and habitual nail-biters scored significantly higher on the Lie Scale of the E.P.I. than moderate and less severe nail-biters.

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