Modified Psychological Scale for Prosthodontic Patients

Nadira A Hatim
BDS, MSc (Prof.)

Department of Prosthodontic
College of Dentistry, University of Mosul

Monia MN Kandil
BDS, MSc (Asst. Lect.)

Department of Prosthodontic
College of Dentistry, University of Mosul

Elham Kh Al-Jamas
BDS, PhD (Prof.)

Department of Psychology
College of Medicine, University of Mosul

ABSTRACT

Aims: To aid the dentist in a more precise method for psychological and neurotic assessment of his patients, especially the edentulous; and to isolate those who may refuse the complete denture wearing for psychological reasons.

Materials and methods: The study was conducted to include one hundred members, who agreed to participate in it. They were collected randomly from Dental College of Mosul University, and a Dental Health Center at Mosul City. Members were asked to answer these questionnaires: Eysenck Personality Inventory; Hamilton Anxiety Scale; and Mental Health Questionnaires. Statistical analysis of questioner was done according to percentage, and prevalence.

Results: The data collected from these scales undergone statistical and correlation analysis to show the frequency and prevalence for each question and the most effective components to introduce new psychological case–sheet, briefed what most important psychological factors that could investigated by the dentist.

Conclusions: A modified psychological scale was accomplished for edentulous patients. The results also revealed that the general somatic sensory symptoms, autonomic nervous symptoms, insomnia and gastrointestinal symptoms; represented the most effective factors on the stress development, especially in the geriatrics.

Key words: Psychological Scale, edentulous, denture, anxiety.

INTRODUCTION

There is a major need for basic dental health education in psychiatric applications, and vice versa; to improve liaison between mental health and dental services, also to tackle problems that faced each department.

The evaluation of patient who requires any form of dental treatment should begin at the earliest stage of meeting with him. Psychotherapists and practicing physicians have recognized the co–morbidty of psychological and physical disorders. Rates of mood and anxiety disorders are higher among medical patients. The prevalence of psychiatric morbidity at Iraq community was found in a study done by Hasan, to be a
Higher than the psychiatric morbidity which was found in United Kingdom.

For this reason the dentist should interest with the human being to home that tooth is attached and assesses his psychological condition.\(^5\)

The effect of psychological problems may be appeared obviously in the oral health condition i.e. anorexia nervosa and bulimia nervosa, which cause erosion and caries.\(^6,7\)

In most denture problems the dentists must become more conversant with psychiatric subjects and should learn to recognize abnormal behavior and direct patients with such abnormalities to the proper authorities for care, and modified his behavior to avoid some oral manifestations or diseases, such as: dryness of the mouth, unusual tastes, burning of the tongue and palate. Senile atrophy may also affect tissues in and around the mouth. Gagging with dentures is a phenomenon almost completely psychogenic in nature, although gagging should be treated psychiatrically; also bruxism, Temporo–mandibular joint dysfunction, gingivitis, and inflammatory reactions under dentures.\(^8,9\)

Smith and others\(^10-12\) showed that the satisfaction with complete denture highly correlated to patient's personality, neuroticism and his anxiety level.

**MATERIALS AND METHODS**

One hundred members diagnosed using the basic method of dental examination.\(^13\) They were invited to participate at this research, after the checking their suitability of the research criteria, continued until completing the questions, then included in the statistic analyses. This sample was divided into Dentate group (control group): Males and females were taken from the community, their age (20–60) years of old, and the number included was (25) members.

Completely Edentulous Group: Seventy five members (males & females) were included in this group and indicated for a prosthodontic replacement. This group was categorized into three categories, and each consists of (25) members:

a) This group was related to completely edentulous that undergoes prosthodontic treatment under comfortable, soothing, stress–less circumstances; they aged (50–85) years. This sample was from the Dentistry College / Mosul University.

b) Completely edentulous that treated in the Dental Educational Health Centre at Mosul City. They were between (50–85) years of old.

c) Completely edentulous, refused the prosthodontic replacement for different reasons. They are collected from Mosul community, their ages between (50–85) years.

Each member asked to answer some inventories to determine his psychology and personality traits. The questionnaires were used, include:

1. Eysenck Personality Inventory (EPI): This test was submitted by Hans Eysenck (1978), to evaluate personality traits\(^14\). It modified and briefed at 1980.

2. Hamilton Anxiety Scale “Anxiety Scale” (HAM–A): The scale was introduced by Max Hamilton (1959) and measures the severity of some psychological symptoms, such as: anxiety, tension, depression and others.\(^17-19\)

3. Mental health Scale "Minisota scale with multi–sides test" (MMPI): Which is a scale used in different psychological purposes, as well as other medical related problems, such assessment the prosthodontic rehabilitation process.\(^20\) Modified to give the final picture specified to Iraqi society by Sa’eed.\(^17-21\)

The data collected was undergo statistical analysis and for better understanding, histograms had been drawn to show the percentage, to find the frequency and prevalence for each question used at these scales

**RESULTS**

The 100 members that are accepted to be involved in this study had an age mean equal to (55.96) years. They were employed under series of psychological scales, to evaluate their personality traits and psychological condition.

The frequency and prevalence for each question used at these scales, as explained in Figures (1–3).
Figure (1): The frequency and prevalence degree for each question of Eysenck Personality Scale.

Figure (2): The frequency and prevalence degree for each question of Hamilton Anxiety Scale.
Also by helping the Factor Analysis Method for the Hamilton Anxiety Scale, because only this scale has components were suitable for such type of analysis (Table 1).

Table (1): Factor analysis and Variable Communality percentage for Hamilton anxiety scale

| Factors         | Variance | % of variables |
|-----------------|----------|----------------|
| Factor 1        | 2.6218   | 0.187          |
| Factor 2        | 2.2531   | 0.161          |
| Factor 3        | 1.9248   | 0.137          |
| Factor 4        | 1.5401   | 0.110          |
| Factor 5        | 1.3270   | 0.095          |
| Factor 6        | 1.0986   | 0.078          |
| Communality     | 10.7654  | 0.769          |

| Variables                  | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Communality |
|----------------------------|----------|----------|----------|----------|----------|----------|-------------|
| Anxious mood               | 0.024    | 0.771    | -0.266   | 0.074    | -0.243   | 0.301    | 0.821       |
| Tension                    | 0.427    | 0.689    | -0.074   | 0.043    | -0.221   | 0.294    | 0.800       |
| Fears                      | 0.286    | 0.176    | -0.143   | 0.136    | 0.041    | 0.842    | 0.863       |
| Insomnia                   | 0.626    | 0.422    | -0.198   | -0.072   | -0.114   | 0.137    | 0.645       |
| Intellect                  | 0.047    | 0.119    | 0.061    | 0.834    | -0.194   | 0.210    | 0.797       |
| Depressed mood             | 0.281    | 0.772    | -0.237   | 0.235    | -0.043   | -0.147   | 0.810       |
| Somatic general (muscular) | 0.450    | 0.336    | -0.251   | 0.450    | -0.121   | 0.125    | 0.612       |
| Somatic general (sensory)  | 0.782    | 0.185    | -0.101   | 0.193    | -0.044   | 0.191    | 0.731       |
| Cardio – vascular system   | 0.373    | 0.202    | -0.797   | 0.056    | 0.001    | 0.041    | 0.820       |
| Respiratory system         | 0.053    | 0.275    | -0.799   | 0.099    | -0.259   | 0.151    | 0.817       |
| Gastro – intestinal system | 0.524    | 0.072    | -0.473   | 0.120    | -0.519   | 0.115    | 0.800       |
| Genito – urinary system    | 0.419    | 0.036    | -0.296   | 0.653    | -0.046   | -0.141   | 0.712       |
| Autonomic system           | 0.665    | 0.115    | -0.235   | 0.116    | -0.390   | 0.111    | 0.689       |
| Behavior at interview      | 0.188    | 0.284    | -0.128   | 0.229    | -0.811   | -0.076   | 0.848       |

Note: The darkest cells represent the factor fullness models which had the highest values.
The psychological scale has been introduced briefly what the most important and frequent psychological factors that investigated (Figure 4).

KAN*Dental Inventory (KANDI)

| الأسالة | الدائم | أحياناً | نادراً |
|---------|-------|--------|--------|
| هل تعاني من صعوبة في النطق أو مشاكل تنشوية مربوط بنبوات النثر؟ | 1 | 2 | 3 |
| هل تعاني من طفح (محم) الأسنان أو السفك عليها يرقي؟ | 4 | 5 | 6 |
| هل تفضل الابتكار عن ممام الأشخاص المحيطين بك؟ | 7 | 8 | 9 |
| هل تحاول الحصول على أي شيء يعجبك ويأتي وسيلة ممكنة؟ | 10 | 11 | 12 |

الاستعلامات التي تتحاكي إلى حقيقة ولا تترك أي فجوة بين الجواب والتركيز والقدرة

1 | هل تعتقد أن الآخرين هم بسبب معظم المشاكل التي تواجههم؟
2 | هل تتوقع وتكرر كثير قبل القيام على أي شيء؟
3 | هل تعاني من الأصابات المرتبطة بنبوات النثور التي تتعرض لها؟
4 | هل تتحمل أن تكون علاجاتك بالإصلاح أو المحيطين بك كافية؟
5 | هل تعاني من ضيق والغضب إذا ما حصل شيء يهان؟
6 | هل تعاني من الأرق أو النوم المطط؟
7 | هل تجد صعوبة في تتبع رأي خاص بك بعد أن تعر فرآ الآخرين؟
8 | هل تعاني من التهيج (إذا أو سوء الجسم)؟
9 | هل تعاني بعد قدرة على حل معظم المشاكل التي تواجهك وتتحاكي للآخرين في

| أسئلة المتاحه | الدائم | أحياناً | نادراً |
|--------------|-------|--------|--------|
| هل تعاني من ضيق في السطح أو طفح في الأسنان؟ | 13 | 14 | 15 |
| هل تعاني من استنشاق أو التوتر عموم النثوان؟ | 16 | 17 | 18 |
| هل تعاني من نفاذية في السطح أو طفح في الأسنان؟ | 19 | 20 | 21 |
| هل تعاني من ضيق في السطح أو طفح في الأسنان؟ | 22 | 23 | 24 |
| هل تعاني من ضيق في السطح أو طفح في الأسنان؟ | 25 | 26 | 27 |
| هل تعاني من تهيج أو التوتر في الأحاسين؟ | 28 | 29 | 30 |
| هل تعاني من ضيق في السطح أو طفح في الأسنان؟ | 31 | 32 | 33 |
| هل تعاني من ضيق في السطح أو طفح في الأسنان؟ | 34 | 35 | 36 |
| هل تعاني من ضيق في السطح أو طفح في الأسنان؟ | 37 | 38 | 39 |
At Table (1) each of the general somatic sensory symptoms, autonomic nervous system symptoms, insomnia and gastro-intestinal symptoms were correlated to each other and connected to form the first effective factor. The depression symptoms, anxious mood symptoms and tension symptoms were correlated and connected to form the second effective factor.

While respiratory and cardio–vascular symptoms were correlated to form the third effective factor. The intellectual symptoms, with genito–urinary symptoms, contributed to form the fourth effective factor. General behavior during the interview represented the fifth factor by itself. At last fear symptoms, directed to represent the sixth effective factor.

**DISCUSSION**

A study made by Hall *et al.* (22) provided corroborative evidence of the need for the dentist to make an initial assessment of personality factors before starting the actual treatment.

According to the thoughts and recommendations of Basker and Davenport: (23) It should be recognized the anxious and unclear patient at the first visit, to minimize his stress, and to develop communication skills through psychological evaluating questionnaires.

Then starting seeking the reasons of the problem and concerned with helping to solve them, at both levels prostodontic and Psychologic levels. (24, 25)

To assist dentists in recognizing such problems, various questionnaires have been designed to measure characteristics of personality and the levels of anxiety. (23) Not this only, but also examines the suitability of such psychological assessments with our communities after employing them. (15)

The results of the statistical analysis showed at Figures (1–3) and Table (1); help to introduce a psychological case–sheet for investigating the dental patients’ psychological state, Figure (4).

At Table (1) the observations proved that anxiety symptoms like: Somatic general sensory symptoms, autonomic system symptoms, insomnia and gastro-intestinal symptoms were the most effective factors on anxiety level development; then followed by the somatic symptoms related to: Anxious mood, tension, cardio–vascular system, respiratory system with genito–urinary symptoms; similar to what stated by De Oliveira and Frigerio, (26) that the risk of malnutrition and digestive system problems were high for elderly wearing complete dentures, and this effect on their psychological state and anxiety appearance. The other systemic medical problems such as circulatory impairment and respiratory troubles had particular studies searching about their specific effect on anxiety developing and quality of life.

Results of this study agreed with Hall *et al.* (27) and Heydecke *et al.* (28) gave prove for anxiety development in a patient with a medical systemic diseases or disturbances.
Lindsay and Powell (29) stated the strong relation between fears and panic with high risk of serious cardiovascular disease.

CONCLUSIONS

Introducing a psychological scale, that briefed the most important and frequent psychological factors. The results also gave an idea that the general somatic sensory symptoms, Autonomic Nervous system symptoms, Insomnia and Gastro–Intestinal symptoms represented the most effective factors on the stress development for edentulous persons.

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