

Modified Psychological Scale for Prosthodontic Patients

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الخلاصة

الأهداف: تهدف الدراسة إلى مساعدة طبيب الأسنان في طريقة أكثر دقة لتقييم مرضاه الذين يعانون من حالات نفسية وعصبية من فاقدني الأسنان ، وعزل أولئك الذين قد يرفضون ارتداء طقم أسنان كامل لأسباب نفسية. **المواد وطرائق البحث:** أجريت هذه الدراسة لتشمل مئة من المرضى ، الذين وافقوا على المشاركة في البحث. العينة جمعت بشكل عشوائي من كلية طب الأسنان في جامعة الموصل ، وصحة الأسنان في مركز مدينة الموصل. وطلب من المرضى الرد على هذه الاستبيانات : (Eysenck) الشخصية الجرد ، والقلق (مقياس هاملتون) ، والصحة النفسية (الاستبيانات). التحليل الإحصائي والسؤال المطروح هو القيام به وفقا لنسبة مئوية ، وانتشاره. **النتائج:** إن البيانات التي تم جمعها من هذه الجداول الإحصائية والتحليل أظهرت علاقة التردد وانتشاره لكل سؤال و استنتاج ورقة جديدة، معظم المكونات النفسية لتقدم موجرا لأهم العوامل النفسية التي يمكن التحقيق بها من قبل طبيب الأسنان. **الاستنتاجات:** تم استنتاج مقياس الحالة النفسية للمرضى فاقدني أسنان. وأظهرت النتائج كذلك إن الأعراض الجسدية العامة والحسية ، والأعراض العصبية اللاإرادية ، والأرق وأعراض هضمية ؛ تمثل أهم العوامل الفعالة في إظهار الإجهاد ، وخاصة في طب الشيخوخة.

ABSTRACT

Aims: To aid the dentist in a more precise method for psychological and neurotic assessment of his patients, especially the edentulous; and to isolates 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 effectible 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 gastro-intestinal symptoms; represented the most effective factors on the stress development, especially in the geriatrics

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

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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.⁽¹⁾

The evaluation of patient who requires any form of dental treatment should begin at

the earliest stage of meeting with him.⁽²⁾ Psychotherapists and practicing physicians have recognized the co-morbidity of psychological and physical disorders. Rates of mood and anxiety disorders are higher among medical patients.⁽³⁾ The prevalence of psychiatric morbidity at Iraq community was found in a study done by Hasan,⁽⁴⁾ 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, Temporomandibular 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.⁽¹⁵⁻¹⁷⁾

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 "Minnesota 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).

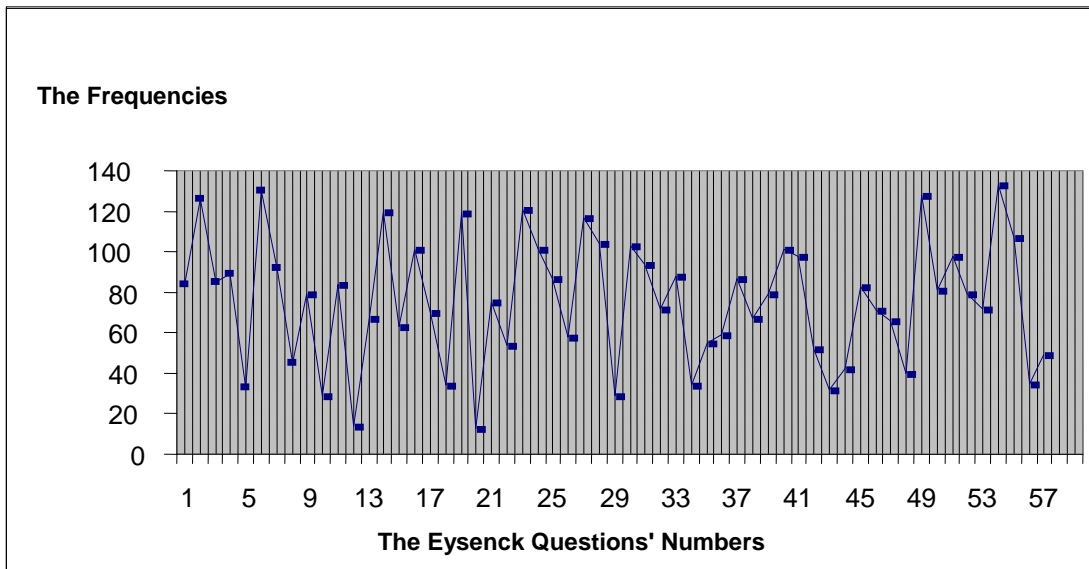


Figure (1): The frequency and prevalence degree for each question of Eysenck Personality Scale.

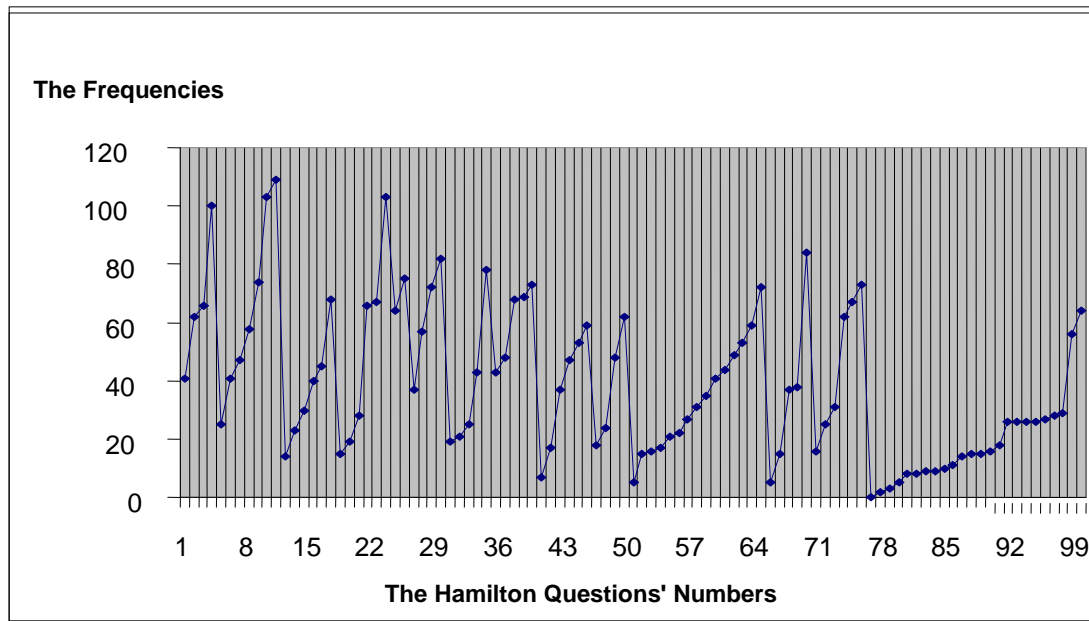


Figure (2): The frequency and prevalence degree for each question of Hamilton Anxiety Scale.

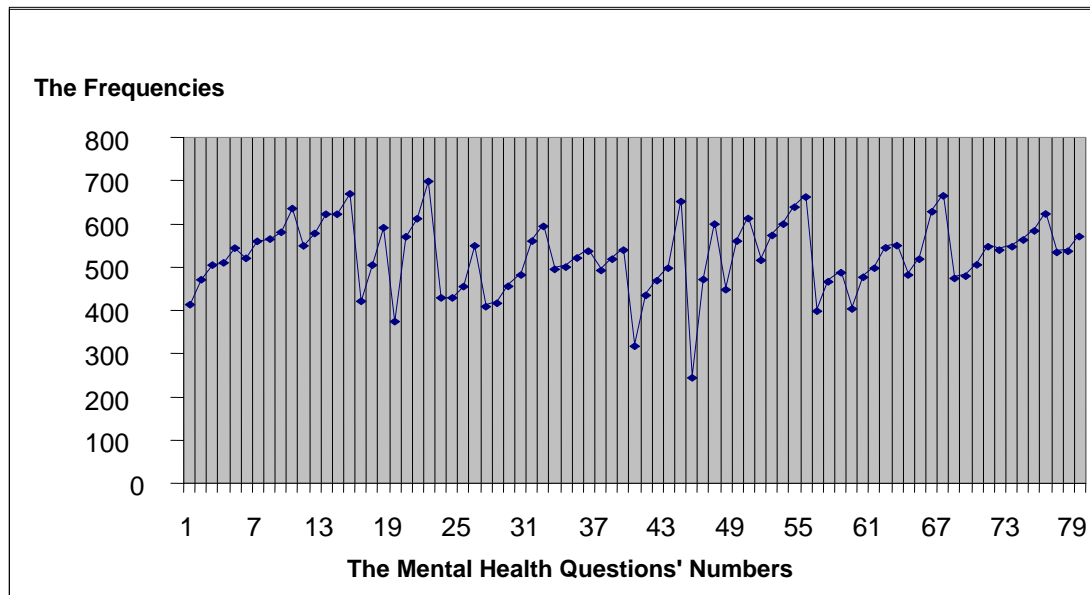


Figure (3): The frequency and prevalence degree for each question of Mental Health Scale.

Also by helping the Factor Analysis Method for the Hamilton Anxiety Scale, be-

cause only this scale has components were suitable for such type of analysis (Table 1).

Table (1): Factor analysis and Variable Communnality 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	
Communnality	10.7654		0.769	

Variables	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Communnality
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 (muscula	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)

الاسم	السن
المهنة	الجنس

الاسئلة التي ستجيب عنها تعبر عن أمور عامة تحدث لنا جميعاً أو نشعر بها من وقت لآخر، أرجو أن تكون دقيقاً وسريعاً في الإجابة لأننا نريد استجابتك الأولى، وبعد قراءتك لكل فقرة اختر بدقة الإجابة المناسبة والتي تؤيدها وهي (دائماً، أحياناً، نادراً) ولا تترك أي فقرة بدون إجابة ولكم جزيل الشكر والتقدير

السؤال	الأسئلة	دائماً	أحياناً	نادراً
1	هل تعاني من صعوبة في التنفس أو أي مشاكل تنفسية مرتبطة بنوبات التوتر؟			
2	هل تعاني من طحن (سحق) الأسنان، أو الصك عليها بقوة؟			
3	هل تفضل الابتعاد عن معظم الأشخاص المحيطين بك؟			
4	هل تحاول الحصول على أي شيء يعجبك وبأي وسيلة ممكنة؟			
5	هل تشعر بالضعف والوهن والتعب؟			
6	هل تتجنب الأعمال التي تحتاج منك إلى دقة وانتباه؟			
7	هل ترفض إيجاد بديل أو معوض لهدف ضروري لك في حالة عدم استطاعتك تحقيقه؟			
8	هل تحس بالرضا عن نفسك والسعادة ولم تشعر يوماً بالثورة أو الغضب؟			
9	هل تعتقد أن الآخرين هم سبب معظم المشكلات التي تواجهك؟			
10	هل تتوقف وتفكر كثيراً قبل الإقدام على أي شيء؟			
11	هل تعاني من الصداع المرتبط بنوبات التوتر التي تتعرض لها؟			
12	هل تتجنب أن تكون علاقتك بالأصدقاء أو المحيطين بك قوية؟			
13	هل تشعر بالضيق والغضب إذا ما أُجيب طلبك بالرفض؟			
14	هل تعاني من الأرق أو النوم المتقطع؟			
15	هل تجد صعوبة في تكوين رأي خاص بك بعيداً عن آراء الآخرين؟			
16	هل تعاني من الرياح (الغازات) أو سوء الهضم؟			
17	هل تشعر بعدم القدرة على حل معظم المشاكل التي تواجهك وتحتاج للآخرين في حلها؟			
18	هل تشعر بأنك شخص غير محبوب؟			
19	هل تستيقظ باكراً وبدون سبب؟			
20	هل تأخذ الأمور عادةً بدقة وحرص بالغين وتبتعد عن البساطة والعفوية؟			
21	هل تجد صعوبة في التعلم من أخطائك السابقة؟			
22	هل تشعر بالقلق أو التوتر معظم الأحيان؟			
23	هل أنت من النوع المزاجي (يتعكز مزاجك ويصفو بسرعة)؟			
24	هل تعاني من احباطات مؤلمة في حياتك؟			
25	هل تعتقد أن كل عاداتك طيبة ومرغوب فيها؟			
26	هل تعاني من عدم القدرة على تحديد أفكارك و أهدافك بوضوح؟			
27	هل تفضل عدم الخروج من المنزل وملاقة الناس كثيراً؟			
28	هل تعاني من صعوبة الاسترخاء والراحة؟			
29	هل تتصرف بما يعجبك دون اهتمام بالنتائج؟			
30	هل تشعر بالتعاسة دون سبب واضح؟			
31	هل تعاني من تسارع أو اضطراب في ضربات القلب؟			
32	هل تعتقد أن نظرتك للأمور بعيدة و لا تتفق مع الواقع (خيالية)؟			
33	هل تحس بضيق أو ثقل على الصدر؟			
34	هل تتجنب أي تغيير جديد في نمط حياتك؟			
35	هل تبتعد عن حل النزاعات بين الآخرين؟			
36	هل تعاني من صعوبة في تذكر بعض الأحداث (سرعة النسيان)؟			
37	هل تفضل أن يكون لك عدد قليل من الأصدقاء بشرط أن يكونوا مخلصين لك؟			
38	هل ترتبك وتنتور أثناء مواجهتك للمواقف المحرجة التي قد تتعرض لها؟			

السؤال	الأسئلة	دائماً	أحياناً	نادراً
39	هل تلاحظ تغير في عدد مرات التبول؟			
40	هل تتوتر أعصابك بسرعة ولأسباب تافهة أحياناً؟			
41	هل تتجنب مراجعة نفسك وتصرفاتك لمعرفة أخطاءك وعيوبك؟			
42	هل تحافظ على مواعيدك ولم تتأخر يوماً عن موعد أو عمل مهم؟			
43	هل تشعر بعدم الاستقرار النفسي؟			
44	هل تميل للهدوء والانزواء عندما تكون مع الآخرين؟			
45	هل تتناوب نوبات التوتر والشد العصبي أثناء المقابلات المهمة؟			
46	هل تمل وتتعب بسرعة عند مزاولتك لعمل أو جهد ما؟			
47	هل ترى أحلاماً مزعجة (كوابيس) أثناء النوم؟			
48	هل تخاف الإزدحامات و تتضايق منها؟			
49	هل تضطرك الظروف للتصرف بما لاينفق مع معتقداتك ومبادئك؟			
50	هل تشعر بقلق وخوف من الألام والأمراض؟			

Figure (4): The introduced psychological Scale KAN Dental Inventory (KANDI)

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 prosthodontic 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.

REFERENCES

1. Al-Dabbas M, Jumaian A. Dental Health of Psychiatric In-Patient in Jordan. *The Arab journal of Psychiatry*. 2005; 16(1): 78-82.
2. Heasman P. Master Dentistry: Restorative Dentistry, Pediatric Dentistry and Orthodontics. *Churchill Livingstone*. 2003; P: 125.
3. Salovey P, Rothman A, Detweiler J, Steward W. Emotional States and Physical Health. *American Psychologist*. 2000; 55(1): 110-21.
4. Hasan MS. Psychiatric Morbidity in Inpatients with Neurological Disorders in Mosul Teaching Hospital. PhD thesis, College of Medicine/ Psychiatry Specialization, Mosul University; 1994.
5. Öwall B, Käyser A, Carlsson G. Prosthodontics- Principles and Management Strategies. 1st Ed. Mosby-Wolfe. 1996; Pp: 85-95, 125-35.
6. De Moor RJ. Eating disorder-induced dental complications: a case report. *J Oral Rehabil*. 2004; 31(7): 725.
7. Willumsen T, Graugaard P. Dental fear, regularity of dental attendance and subjective evaluation of dental erosion in women with eating disorders. *Europ J Oral Scien*. 2005; 113(4): 297.
8. Tylman S, Keys D, Knutson J, Moyers R, Robinson H, Clark H. Dental care for Chronically Ill and Aged- The Year Book of Dentistry. Year Book Medical Publishers. 1964; Pp: 431-33.
9. Al-Zeid AA. The Frequency of Generalized Anxiety Disorder Symptoms in Iraqi Patients. PhD thesis, College of Medicine/ Psychiatry Specialization, Mosul University; 1995.
10. Smith M. Measurement of personality traits and their relation to patient satisfaction with complete dentures. *J Prosthet Dent*. 1976; 35: 492-503.
11. Allen PF. Teeth for Life for Older Adults. 1st Ed. Quintessence Publishing Co. Ltd. 2002; Pp: 1-7, 9-11.
12. Al-Quran F, Clifford T, Cooper C, Lamey P. Influence of psychological factors on the acceptance of complete dentures. *Gerodontology*. 2001; 18: 35-40.
13. Zarb GA, Bolender CL, Carlsson GE. Boucher's Prosthodontic Treatment for Edentulous Patients. 1th ed. Mosby, Inc. 1997; Pp: 57-78.
14. Aluja A, Garcia Ó, Garcia L. A psychometric analysis of the revised Eysenck Personality Questionnaire short scale. *Personality and Individual Differences*. 2003; 35: 449-60.
15. الأنصاري، بدر محمد. الصورة الكويتية لإستخبار "اليزنك" للشخصية (صبيغة الراشدين). مجلة دراسات الخليج والجزيرة العربية . 2002؛ العدد 104، الصفحة: 69-113.
16. زهران، حامد عبدالسلام. التوجيه والإرشاد النفسي. الطبعة الثانية، عالم الكتب. 1982؛ الصفحة: 201.
17. Kandil MN. Psychological Assessment of the Patient pre and post the Prosthodontic Treatment. M.Sc. thesis, College of Dentistry, Mosul University. 2006.
18. Al-saffar N, Al-Nakhla N, Al-Dabbagh T, Taka M. Study of Anxiety among Female Diabetics. *Annals of the College of Medicine-Mosul*. 1980; 11(1).
19. Al-saffar N, Al-Nakhla N, Al-Dabbagh T. Are Two Psychiatrist Necessary for Conducting Hamilton Rating Scale? *Annals of the College of Medicine-Mosul*. 1981; 12(2).
20. Hall M, Hazen S, Moyers R, Redig D, Robinson H, Silverman S. Psychologic Factors Involved in Maxillofacial Prosthesis. Year Book Medical Publishers. 1980; Pp: 209-10.
21. Sa'eed YN. Constructing a scale of Mental Health for University Students According to Indicators of Minnesota-Mutiphasic Personality Inventory M.M.P.I. Ph.D. thesis, College of Education, Ibn Rushd, Baghdad University; 2003.

22. Hall M, Hazen S, Moyers R, Redig D, Robinson H, Silverman S. Ecology of the Prosthodontic Problem– The Year Book of Dentistry. Year Book Medical Publishers. 1977; Pp: 369–70, 374–75.
23. Basker RM, Davenport JC. Prosthetic Treatment of the Edentulous Patient. 4th Ed., Blackwell Munksgaard publisher. 2002; Pp: 1– 37.
24. Brammer L, MacDonald G. The Helping Relationship–Process and Skills. 8th Ed., Pearson Education, Inc. Publisher. 2003; Pp: 54–70.
25. McCabe S. The perspective of mystery: threading the connection between patient and nurse. *Perspectives in psychiatric care*. 2004; 40(1): 5–12.
26. De Oliveira TR, Frigerio ML. Association between nutrition and the prosthetic condition in edentulous elderly. *Gerodontology*. 2004; 21(4): 205.
27. Hall M, Hazen S, Moyers R, Redig D, Robinson H, Silverman S. Review of Full Denture Patients Treated in Johannesburg During 1967, 1972 and 1977. Year Book Medical Publishers. 1982; Pp: 163–64.
28. Heydecke G, Tedesco L, Kowalski C, Inglehart M. Complete Dentures and Oral Health–Related Quality of Life–do coping styles matter? *Community Dent Oral Epidemiol*. 2004; 32:297–306.
29. Lindsay SJ, Powell GE. The Handbook of Clinical Adult Psychology. 2nd Ed., Routledge publisher. 1995; Pp: 92–198, 412–56.