Assessment of the Awareness of Dental Professionals Regarding Identification and Management of Dental Patients with Psychological Problems in Routine Dental Operatory: A Survey

Deepak Gupta[1], Soheyl Sheikh[1], Rashmi NC[2], Amit Aggarwal[1], Rahul Bansal[1]

[1]Department of Oral Medicine and Radiology, M.M. College of Dental Sciences and Research, Mullana, Ambala, Haryana, India.
[2]Department of Conservative Dentistry and Endodontics, M.M. College of Dental Sciences & Research, Mullana, Ambala, Haryana, India.

Abstract

Objective: The oral cavity is location for different conditions of local and systemic origin; many of them with controverted and or multifactorial etiology, where the psychogenic factors constitute an important variable to be considered. Keeping this in mind, this paper aims to assess the awareness of dental professionals of the role of psychological factors in certain dental conditions. Further the competency of the concerned dental professional was also evaluated in managing such cases.

Materials and methods: A random sample of 250 Dental Practitioners (DPs) was chosen from Punjab state dental council list. A cross-sectional survey was carried out using telephonic interviews as well as self-administered & structured postal questionnaires. A total of 223 dental practitioners were analysed by their responses, resulting in an overall response rate of 89.2%. Results were analysed using Chi square analysis.

Result: A significant number of dental practitioners agreed to the fact that dental diseases could be extensively associated with psychological problems. Further they also encountered & should be concerned with identification of such patients. In contrast to post graduates (P.G), a significant number of general dental practitioners (G.D.P) tend to ignore psychological problems of the dental patients. Further both G.D.P's & P.G's advocated that unnecessary dental treatment may be administered to such patients. Henceforth their skills have to be improved to handle such cases.

Conclusion: Orientation & education of dental professionals is required regarding dental patients with psychological problems. Introduction of psychology as a separate subject is also necessary with emphasis on oral psychosomatic disorders.

Key words: Psychopathology, psychological, awareness, stomatopsychology, dental professionals

Introduction

Although the eyes may be the window to the soul, the mouth is a window to the body's health. The state of the oral health can offer lot of clues about the overall health. Sometimes the first sign of a disease shows up in the mouth. So there is a need to learn more about this intimate connection between oral health and overall health.

Dentistry has evolved from a single science profession into a profession consisting of multiple specialities. With advances in the knowledge and equipment, dental professionals are now involving themselves in a various fields of medical sciences as well.

Historically, the conditions now called psychological disorders have been poorly understood. As a consequence, these illnesses still are highly stigmatized in society. In the last few decades, however, a great deal has been learned about the characteristics, causes and treatment of these disorders. Although a large percentage of such people can now be effectively treated with psychotherapy and/or medication, about 30% or more of these cases are either undiagnosed or left untreated [1-3].

In recent years, much has been reported in literature on the relevance of Psychology in dentistry. It cannot be argued that there are a significant number of patients reporting to the dental office with complaints, signs and symptoms primarily of psychological in origin [4]. Such patients consistently complain of a symptom that he or she interprets as abnormal but the dentist or the physician can find no convincing physical explanation for the same. This has emerged as one of the most difficult problems faced in clinical practice these days and presents as a challenge for the dental professionals to deal with such patients.

Whether these conditions were ignored or misinterpreted in the early years of dentistry or whether these conditions are actually increasing these days; but there is no denying to the fact that stress has increased in the past two decades, due to multiple factors [4].

Studies have shown that symptoms of anxiety and depression are common in the community [5]. In a study of 10,000 adults in the UK, Meltzer et al. [6] found a 16% point prevalence of psychiatric morbidity, of which mixed anxiety and depressive disorders at 8% were the most common. In primary medical care settings the prevalence of total psychiatric morbidity is substantially higher [7], in the order of 23-25%. Friedlander et al. [1] stated that dentists should be concerned with the identification of patients with depression due to its extensive association with dental disease. Studies have found that dental fear may represent an underlying phobia or trait anxiety. Stress associated with financial strain that manifests as depression are significant risk indicators for more severe periodontal disease [8]. Out of patients with facial pain syndromes, 57% have a psychological illness. Burning Mouth Syndrome (BMS) is also thought to have psychological disorders as one of its origins, and the sensation of oral dryness might be a psychophysiological expression of depression [5].

Further we have to agree that no one chooses to have a

Corresponding author: Dr. Deepak Gupta, MDS, Department of Oral Medicine & Radiology, M.M. College of Dental Sciences & Research, Mullana, Ambala- 133207, Haryana, India, Tel: 09896671281, e-mail: drdeepak_26@rediffmail.com

mental disorder. Admitting to mental illness is not the same thing as admitting to any other serious health issue. This type of psychological attitude is more prevalent in developing countries as people consider it as a social stigma being considered as a mentally ill. Further many studies have concluded that even after known stress/depressive factors involved, patients are quite reluctant to be referred for psychological assessment [5]. Referral to a psychologist or a psychiatrist often results in more suspicion than support. Hence patients must be educated by their dentists regarding the role of psychological factors involved in such diseases so as to check the misconceptions regarding these diseases.

But to the contrary, till date, little is known about the presence of anxiety and depression amongst primary dental care patients [5]. Although reports have shown that dentists are able to recognize psychological problems in their patients, there is an apparent lack of training in dentists to assist their patients with such problems [5]. Keeping this in mind, this study was done to assess the awareness amongst various dental professionals regarding association as well as involvement of various psychological factors in oral diseases, the importance they attach to it and the way they deal with such patients.

Materials and Methods

A random sample of 250 Dental Practitioners (DPs) was chosen from Punjab State Dental Council list by simple random sampling method. These practitioners included those involved in academics and research. Thus the study sample consisted of postgraduates (Master of Dental Surgery), graduates/General dental practitioners (Bachelor of Dental Surgery) and other registered dental practitioners. The "Other category" included those who have done their dental degree from abroad and were involved in dental practice in India.

The responses were collected by either telephonic interviews or by postal questionnaires. In total 94 DPs agreed to a telephone interview thus resulting in a response rate of 37.6%. A key reason given for not being able to participate in a telephone interview was lack of time. In an attempt to gain the opinion of the rest of these DPs (n=156), a semi structured postal questionnaire, based upon the questions included in the telephone interview, was sent with a reply paid envelope. This approach resulted in the return of 129 questionnaires, representing 82.69% response rate. Thus the overall response from the eligible sample of 250 DPs was 89.2%.

The data derived from the telephone interviews was superior to the questionnaire responses due to the ability to explore the DPs replies. Nonetheless, the questionnaire allowed the provision of additional opinions which otherwise would have been missed, and enabled verification of the telephone interview data.

During the telephonic interviews with DPs, the required questionnaires were filled by the interviewer itself. Each individual's response was scrutinised to identify key issues, concepts and themes.

All the rest 156 DPs were given a printed list of structure questionnaires in English (*Tables 1-6*). To maximize the response, a letter was enclosed, which emphasized the importance and confidentiality of the survey. Non-responders were followed-up with a maximum of two further mails. Questionnaires were either sent by speed post, courier or delivered in person. After filling the questionnaire list, the dental practitioners returned the list by post. The results were then analyzed.

All demographic data and the quantitative data obtained via the questionnaires returned by DPs were analysed by SPSS for Windows V15. Frequencies and cross-tabulations were performed.

The reliability of the qualitative data analysis was enhanced by the independent investigation of the responses by a team approach. The team comprised of two Oral Medicine and Radiology experts who had a thorough experience of psychosomatic disorders, and one clinical psychologist. From this, level of agreement was assessed. The validity of the

Table 1. *Questionnaires designed to assess the role of dentist in identifying dental patients with psychological problems and results.*

S.No	Question	Yes			No
1.	Dentists should be concerned with identifying dental patients with psychological problems.	199 (89.23%)			24 (10.76%)
		GDP	**PG**	**Others**	
		109(93.96%)	68(94.44%)	22(62.85%)	
2.	Dental conditions /diseases of patients could be extensively associated with, or caused by psychological problems.	188(84.30%)			35 (15.69%)
		GDP	**PG**	**Others**	
		99(85.34%)	67(93.05%)	22(62.85%)	
3	Have you encountered dental patients with psychological problems?	151(67.71%)			72 (32.28%)
		GDP	**PG**	**Others**	
		82(70.69%)	51(70.83%)	18(51.42%)	

Table 2. *Questionnaire regarding presentation of patients with psychological problems and results.*

S.No.	Presentation	Total number of Subjects
1.	Dental anxiety/ fear	131(58.74%)
2.	Anxiety/depression due to life events	98 (43.94%)
3.	Behavior suggesting psychological disorders	127 (56.95%)
4.	Diagnosed psychological disorders	39 (17.48%)
5.	Severe mental illness	68 (30.49%)

***Table 3**. Questionnaire regarding measures taken for management of patients with psychological problems and results.*

S.No.	Measures taken	Total No. Of Subjects	GDP	PG	Others
1.	Treat physical abnormalities and ignore the psychological problem of the patient	78 (34.97%)	59(50.86%)	09(12.50%)	10(28.57%)
2.	Provide basic treatment and treat the psychological cause of disease	77 (34.52%)	25(21.55%)	48(66.66%)	04(11.42%)
3.	Allocate extra time to the patient and "listen him out" and refer him to a dental specialist	45 (20.17%)	22(18.96%)	10(13.88%)	13(37.14%)
4.	Refer him to his medical doctor	15 (06.72%)	08(06.89%)	2(02.77%)	05(14.28%)
5.	Refer him to a psychiatrist	08 (03.58%)	02(01.72%)	3(04.16%)	03 (08.57%)
Total		**223**	**116**	**72**	**35**

***Table 4.** Questionnaires designed to assess the role of dentist in identifying dental patients with psychological problems and results.*

S.No	Question	Yes			No
1.	Do you agree that unnecessary dental treatment may be administered to the patient in absence of any physical abnormality, in order to satisfy such patient's unusual requests, so that it may possibly work as a placebo?	95 (42.60%)			128 (57.39%)
		GDP	**PG**	**Others**	
		56 (48.27%)	28 (38.88%)	11 (31.42%)	
2	Do you feel that dental practitioner's skills have to be improved to help handle such cases?	187(83.85%)			36(16.15%)
		GDP	**PG**	**Others**	
		96(82.75%)	67(93.05%)	24(68.57%)	
3	Do you feel that medical practitioners are better qualified to assess the patient's mental health?	76(34.08%)			147 (65.91%)
		GDP	**PG**	**Others**	
		40(34.48%)	20(27.77%)	16(45.71%)	
4	Do you feel that adequate communication is lacking between dental practitioners and medical practitioners/psychiatrists as regard referred cases?	185(82.96%)			38 (17.04%)
		GDP	**PG**	**Others**	
		97(83.62%)	61(84.72%)	27(77.14%)	

***Table 5**. Questionnaire regarding the reason for lack of communication between dental and medical practitioners and results.*

S.No.	Reasons	Total No. Of Subjects	GDP	PG	Others
1.	Dental practice not in vicinity of medical practice	23(10.31%)	8	9	6
2.	Referring the patient to psychiatrist is a social stigma for the patients	145(65.02%)	87	44	14
3.	Lack of appreciation of professional roles	49 (21.97%)	18	17	14
4.	Dental practitioner thinks medical practitioners/psychiatrists inadequate	06 (02.69%)	03	02	01
Total		**223**	**116**	**72**	**35**

findings was ensured by adopting forced consensus approach to standardise the data collection.

Results

Out of 250 subjects selected 96 (38.4%) were males and 154 (61.6%) were females. The two hundred twenty three questionnaire- answers on the Performa were analyzed thus giving a total response rate of 89.2%. Most of them were in private practice (51%) while only 28% were involved in teaching in various dental colleges. 21% of the practitioners were employed in multispecialty hospitals. Out of these were: Graduate doctors or General Dental practitioners (GDP) – 116 (52.01%); Post-Graduate doctors (MDS) – 72 (32.28%); Others (Registered Dental Surgeons) – 35 (15.69%). Out of 223 DP's 199 (89.23%) were of the view that dentists should be concerned with identification of dental patients with psychological problems. Questionnaires with results are tabulated in *Table 1-6*. Further, 188 (84.30%) out of 223 believed that dental conditions could be extensively associated with psychological problems. A significant number of DPs also encountered dental patients with mental health/psychological problems. Most of such patients present with dental anxiety (58.74%) and behaviour regarding mental illness (56.95%) (*Table 2*).

Table 3 summarises the current procedure adopted by GDPs. Significant number of GDPs interviewed (50.86%) treated physical abnormalities and ignore the psychological problem of the patient (p=<0.0001). On the contrary, as compared to GDPs (21.5%), a significant number of P.G's advocated to provide basic treatment and treat the psychological cause of disease.(p=<0.0001). Further they were not of the view to refer such patients which they suspected of having mental health problems (p=<0.0001). Only 8 out of 223 subjects referred their patients to a psychiatrist while 15 referred to medical practitioners. 42.96% of the dental professionals admitted to administering unnecessary dental treatment in order to satisfy patient's unusual requests (*Table 4*). Significantly higher number of PG's (93.05%) feels that

Table 6. *Questionnaires designed to assess the role of dentist in identifying dental patients with psychological problems and results.*

S.No	Question	Yes			No
1.	In such patients, do you think dental practitioners handle the physical problems better and that they ignore the psychological factor?	159(71.30%)			64 (28.70%)
		GDP	**PG**	**Others**	
		89(76.72%)	52(72.22%)	18(51.42%)	
2.	Do you feel that the dental patient may become reluctant to accept referral when informed that he may have a psychological problem?	169(75.78%)			54 (24.21%)
		GDP	**PG**	**Others**	
		84(72.41%)	58(80.55%)	27(77.14%)	
3	Who do you think is the patient best referred to? **a)** Medical practitioner **b)** Psychiatrist (Say no in case you think dental specialist can manage such cases)	**a)** 61(27.35%), **b)** 51(22.87%)			111 (50%)
		GDP	**PG**	**Others**	
		a) 34 (29.31%) **b)** 22 (18.96%)	**a) 17** (23.61%) **b)** 18 (25%)	**a)** 10 (28.57%) **b)** 11 (31.42%)	
4	Do you think that follow up of the patient is beneficial?	197(88.34%)			26 (11.65%)
		GDP	**PG**	**Others**	
		99(85.34%)	70 (97.22%)	28(80%)	

dental practitioner's skills have to be improved to handle such cases with psychological problems. (p= 0.043).

Further majority of them (185 out of 223 i.e. 82.96%) felt that there should be development of a referral role for patients suspected with psychological problems. 83.85% felt that general dental practitioner's skills have to be improved to help handle such cases and 82.96% felt that there is lack of adequate communication between dental practitioners and medical practitioners as regard to the referred cases.

Table 5 enumerates the reason for lack of communication between dental and medical practitioners/psychiatrists. 65.02% of the dental professionals here of the view that referring the patient to a psychiatrist is considered as a social stigma which is the most important reason for lack of communication between dental and medical professionals/ psychiatrists. G.D.P's significantly advocated this as compared to P.G's & others (p=0.0439).

Table 6 summarises the role of dentist in identifying dental patients with psychological problems. 75.78% of the dental professionals believe that dental patient may become reluctant to accept referral when informed that he may have a psychological problem. 50% of the dental practitioners think that dental specialists can manage such cases as compared to referring them to medical practitioners (27.35%) or psychiatrist (22.87%). Also, PG's (97.22%) and GDP's (85.34%) believe that follow up of such patients is beneficial (p= 0.017).

Discussion

The practice of dentistry is becoming more complex and challenging. Changing socio demographic patterns, busy life schedules, knowledgeable healthcare consumers, rapid technical advances and the information 'explosion' all place greater demands on clinical decision making. Psychiatric disorders are frequent in patients presenting to dentists. Though psychiatric consultation in dental practice is still in its infancy, the contribution of behavioural sciences in management of psychosomatic symptoms in patients presenting to dental specialists was early recognized [9].

Psychological states influence all the body processes by three different mechanisms including neural, hormonal and immunologic [10]. Under the influence of stress, there is alteration of neurotransmitters & hormones inside the body which leads to translation of an emotion to either psychosomatic disorder or somatoform disorder. Psychosomatic disorder involves real physical illness that is largely caused by psychological factors like stress and anxiety [10]. These disorders can initiate or aggravate lesions in the oral cavity like lichen planus, pemphigus, aphthous stomatitis, bullous pemphoigoid, ANUG, lip licking cheilitis, Stevens Johnson's syndrome and cicatricial pemphigoid [11]. Somatoform disorders involve apparent physical illness without any organic basis to them. These constitute orofacial pain, burning mouth syndrome and temporo-mandibular disorders [11].

Further there have been many reports suggesting that psychological stress can alter one's immune function and increase susceptibility to physical diseases [10-14].

Dental professionals should be concerned with identification of patients with psychological problems as highlighted by this study as they often encounter dental patients with such problems. Recognizable psychopathology is seen in up to 30% of patients attending dental clinics [3] and this often goes undetected and hence untreated. Further, in contrast to GDPs & others, it was seen that dental specialists (post graduates), often recognize patients who present with complaints of emotional disturbance in patients in dental practice which includes oral dysaesthesia, atypical facial pain and other atypical syndromes [12]. Increasing attention needs to be given to identify and appropriately treat somatoform disorders, more so, as they constitute one-third to one-half of referrals to any psychiatry service [13]. These are the manifestations of underlying emotional disturbance and not due to a clearly identifiable physical cause. Specialist is considered better as compared to general dental practitioners in terms of skills and knowledge for such patients as highlighted by this study (*Table 1*). Early and appropriate recognition of such emotional distress would benefit both the individual and the health service [15].

There is a sufficient record of transition of stress sensitivity of an individual to depressive states as the association between daily life stress sensitivity of an individual and development of depression later on is well proved [7]. Depression on the other hand will be the second highest cause of disease burden globally by 2020 [16,17]. Also, most of the patients who present with psychological disorder to a dental professional

present with anxiety and depression due to life events or with physical manifestations of underlying emotional disturbances as proved in this study (*Table 2*). Hence, dentists should spend a considerable amount of time in identification and treatment/ referral of patients who present with psychiatric disorders. So, dental professionals can also join hands with medical professionals in the global society to combat psychiatric morbidity.

In contrast to P.G's, most of the G.D.P's (50.86%) treat the physical abnormalities of the patients and ignore the associated psychological problem. Henceforth it can be stated that P.G's were significantly better equipped to consider psychological problems of the patient (p=<0.0001). This was later proved by the fact that significant number of P.G's (66.66%) (p=<0.0001) advocated for the treatment of psychological cause of the disease as compared to others & G.D.P's. Very less number of dental practitioners advocated to allocate extra time to listen to the patient & refer him to a dental specialist. The "others" category were significant making more referrals to dental specialist & medical practitioners (*Table 3*). The present study found that the referral to the psychiatrist in dental patients is limited and that too was due to non-response to conventional treatment. Most of the patients were reluctant to accept referrals to psychiatrists. This is because the persons labelled as mentally ill are perceived with more negative attributes and rejection regardless of their behaviour [18-21]. Earlier studies, which have tried to identify factors leading to psychiatric referral among patients on medical wards, have pointed to non-compliance and disturbed behaviour as being of importance [22]. An interesting finding was the high prevalence of patients with a diagnosis of Burning Mouth Syndrome (BMS) or oral dysaesthesia, which is an uncommon presentation in general psychiatry [23,24].

Most of the general dental practitioners agree that their skills need to be improved which is supported by the fact that most of the general dental practitioners administer unnecessary dental treatment to the patient in absence of any physical abnormality, in order to satisfy such patient's unusual requests (*Table 4*). Further in comparison to P.G's, G.D.P's & others significantly felt that medical practitioner is better qualified to assess patient's mental feelings. This may be attributed to due to lack of formal training regarding such cases in the dental curriculum. Lack of training in oral health for professional carers is also reported [25] in the literature and proved in this study. Training programmes for health professionals, both undergraduate and post graduate need to be urgently addressed. For the dentist, training must include a wider knowledge and understanding of the major diagnostic conditions and the potential impact of mental illness and its treatment on oral health.

The medications used to treat mental illness may interact with drugs used in dentistry. Some oral health problems arise from the manifestations of mental illness, while others may be side effects of psychiatric medications. Unfortunately, psychiatric disorders also produce reduced rates of compliance for preventive oral health care as well. So the dental professionals lag behind understanding such cases as they do not regard themselves as having a role in identifying dental patients with psychological problems.

As regards the prevalence and impact of unrecognized and untreated psychiatric disorders in patients presenting in dental practice, there follows the need for a service to address this unmet need. This would directly provide a framework for psychiatric- dental relationship and indirectly lead to better understanding of psychiatric disorders by dental specialists, which in turn will lead to early identification and referral to such a service if one exists.

Preclinical and clinical dental students have long been taught medicine and surgery. However psychological illnesses have usually been given scant attention. There is dire need for mandatory introduction of the behavioural sciences into the dental curriculum which could act as a remedy and help us to address some important problems long ignored.

Henceforth, the aim of this paper was to give an outline of the associated psychopathology in routine dental patients while highlighting the way all dental professionals handle such conditions of particular importance to practising dentist. So in a nutshell, in light of regular psychopathology in routine dental practise, a dental professional must have the knowledge of all oral disorders that are usually associated with psychiatric disorders and disturbances, or which have a significant psychological component.

It can be concluded that training in psychological counseling should be a part of the dental undergraduate curriculum. However further studies are required in this context on a larger sample. Further the introduction of psychology as a separate subject with emphasis on oral psychosomatic disorders is recommended which could separately be termed as "stomatopsychology".

References

1. Friedlander AH, West LJ. Dental management of the patient with major depression. *Oral Surgery, Oral Medicine, Oral Pathology*. 1991; **71**: 573–578.

2. Tomar B, Bhatia NK, Kumar P, Bhatia MS, Shah RJ. The Psychiatric and Dental Interrelationship. *Delhi Psychiatry Journal*. 2011; **14**: 138-142.

3. Feinmann C. The mouth, the face and the mind. Oxford: Oxford University Press; 1999.

4. Sandi C, Pinelo-Nava MT. Stress and memory: Behavioural effects and neurobiological mechanisms. *Neural Plasticity* 2007; **2007**: 78970.

5. Lloyd-Williams F, Dowrick C, Hillon D, Humphris G, Moulding G, Ireland R. A preliminary communication on whether general dental practitioners have a role in identifying dental patients with mental health problems. *British Dental Journal*. 2001; **191**: 625-629.

6. Meltzer H, Gill B, Petticrew M. OPCS Surveys of Psychiatric Morbidity in Great Britain, Bulletin No.1: The prevalence of psychiatric morbidity among adults aged 16-64, living in private households, in Great Britain, OPCS: London. London OPCS Social Survey Division; 1994.

7. Wichers M, Geschwind N, Jacobs N, Kenis G, Peeters F, Derom C, et al. Transition from stress sensitivity to a depressive state: longitudinal twin study. *British Journal of Psychiatry.* 2009; **195**: 498-503.

8. Borges Jr. I, Moreira EAM, Filho DW, de Oliveira TB, da

Silva MBS, Fröde TS. Proinflammatory and oxidative stress markers in patients with periodontal disease. *Mediators of Inflammation* 2007; **2007**: 45794.

9. Land M. Management of Emotional Illness in Dental Practice. *Journal of the American Dental Association*. 1966; **9**: 631-640.

10. Koh KB, Lee BK. Reduced lymphocyte proliferation and interleukin-2 production in anxiety disorders. *Psychosomatic Medicine.* 1998; **60**: 479-483.

11. Brightman VJ. Oral symptoms without apparent physical abnormality- Atypical facial pain, glossodynia and burning mouth syndrome, subjective xerostomia, and idiopathic dysguesia. In: Lynch MA, Brightman VJ, Greenberg MS (Editors) *Burket's Oral Medicine Diagnosis and Treatment* (9th edn.) Philadelphia: Lippincott- Raven; 1994; 379-414.

12. Elliot GR, Eisengdorfer C. Stress and human health: Analysis and implications of research. In: Elliot GR, Eisengdorfer C (Editors) *A Study by the Institute of Medicine and the National Academy of Sciences.* New York: Springer Verlag; 1982; 271-275.

13. Herberman RB. NK cells and other natural effector cells. *Academic Press*. New York *1982.* 1-16.

14. Bertini F, Cristina Sena Costa N, Haberbeck Brandão AA, Rodrigues Cavalcante AS, Almeida JD. Ulceration of the oral mucosa induced by antidepressant medication: A case report. *Journal of Medical Case Reports.* 2009; **3**: 98.

15. Bridges K, Goldberg DP. Somatic presentations of psychiatric illness in primary care settings. *Journal of Psychosomatic Research* 1988; **32**: 137-144.

16. Murray C, Lopez AD. Alternative projections of mortality and disability by cause 1990-2020: Global Burden of Disease Study. *Lancet*. 1997; **349**: 1498-1504.

17. Rait G, Walters K, Griffin M, Buszewicz M, Peterson I, Nazareth I. Recent trends in the incidence of recorded depression in primary care. *British Journal of Psychiatry.* 2009; **195**: 520-524.

18. Link BG, Cullen F, Struening E, Shrout PE, Dohrenwend BP. A modified labelling theory approach to mental disorders: An empirical assessment. *American Sociological Review*. 1989; **54**: 400-423.

19. Socall DW, Holtgraves T. Attitudes towards mental illness: the effects of label and beliefs. *Quarterly Reviews of Chemical Society.* 1992; **33**: 435-445.

20. Arkar H, Eker D. Effects of psychiatric labels on attitudes towards mental illness in a Turkish sample. *International Journal of Social Psychiatry.* 1994; **40**: 205-213.

21. Ogunsemi OO, Odusan O, Olatawura MO. Stigmatising attitude of medical students towards a psychiatric label. *Annals of General Psychiatry.* 2008**; 7**: 15.

22. Maguire GP, Julie DL, Haw ton E, et al. Psychiatric morbidity and referral on two general medical wards. *British Medical Journal*. 1974; **1**: 268-270.

23. Abetz LM, Savage NW. Burning mouth syndrome and psychological disorders. *Australian Dental Journal*. 2009; **54**: 84–93.

24. Bogetto F, Maina G, Ferro G, Carbone M, Gandolfo S. Psychiatric comorbidity in patients with burning mouth syndrome. *Psychosomatic Medicine* 1998; **60**: 378-385.

25. Fiske J, Lloyd H. Dental needs of residents and cares in elderly peoples home and carers attitudes to oral health. *European Journal of Prosthodontics and Restorative Dentistry*. 1992; **2**: 91-95.