

Psychological Profile & Quality of Life in Patients with Stress and Immune Mediated Oral Lesion. An institutional based study.

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Abstract

Aim: The aim of the study is to evaluate the level of anxiety and depression among the patients with immunological and stress related oral lesions reported to the outpatient department.

Material and method: Total 50 random patients were included in the study who visited our department, out of which 32 patients were males and 18 patients were females, who complained of having mucosal lesions or burning sensation in the oral cavity. They all were given a questionnaire form with 14 alternate questions on anxiety

and depression which was in two different languages (English & Hindi).

Scoring: Total score: Depression (D) Anxiety (A). (0-7) = Normal, (8-10) = borderline, (11-21) = abnormal.

Result: Our study shows significant increase in oral lesions in patients with anxiety and depression. Patients with depression having aphthous ulcers (normal-1, borderline abnormal-5, abnormal-13) and lichen planus (normal-4, borderline abnormal-7, abnormal-20) having p-value of 0.045. Patients with anxiety having aphthous ulcers (normal-1, borderline abnormal-3, abnormal-15)

and lichen planus (normal-2, borderline abnormal-3, abnormal-26) having p-value of 0.041.

Conclusion: Study shows positive correlation between psychological disorders associated with anxiety and depression with conditions like aphthous ulcers and oral lichen planus.

Keywords: Anxiety, Depression, HAD scale, Aphthous ulcer, Oral lichen planus.

Introduction

The term mental disease is employed to explain clinically recognizable pattern of psychological behavior symptom or behavior causing acute or chronic unhealthiness, personal distress or distress to other (Akranavičiūtė D and Ruževičius J,2007). Oral health contributes to general health, self-worth & quality of life & although oral health may have a low priority within the context of mental disease, the impact of mental disease and its treatments in oral health must be addressed (Karadag E and Solpuk N, 2018). WHO defines quality of life (QOL) as a private purpose-aligned cultural and value system by which an individual lives, relative to their aims, hopes, living standards and interests (Vincent SD and Lilly GE, 1992).

Anxiety: Rollo May in 1950 described the anxiety because the feeling of pressure towards adaptation regarding loneliness or that the individual isn't liked or disliked whereas depression may be a common mental disturbance that presents with depressed mood, loss of interest or pleasure, decreased energy, feelings of guilt or low self-worth, disturbed sleep or appetite, and poor concentration (Woo SB and Sonis ST, 1996).

Proven psychologically mediated oral lesion: Recurrent aphthous stomatitis (RAS): The worldwide distribution, high frequency and decreased quality of life generated by recurrent aphthous stomatitis have resulted during a batch of research into the etiology and efficient therapy of this disease (Ship et al, 2000). On the other hand, other factors

which may be responsible for the appearance or exacerbation of recurrent aphthous ulcers are previous case history, immunity problems, stress, anxiety, hypersensitivity, trauma and psychological problems (Casiglia JM, 2002).

Oral Lichen Planus: The cause is unknown, but it's classified as an autoimmune disease which can be precipitated or exacerbated by psychosocial stress. Emotional factors are evidenced by higher frequency of psychiatric symptoms, low quality of life, higher level of hysteria and immunocompromised condition (Scully et al, 2003). The Hospital Anxiety and Depression Scale (HADS) were devised 30 years ago by Zigmond and Snaith to live anxiety and depression during a general medical population of patients (Snaith RP, 2003).

The aim of the study is to gauge the extent of anxiety and depression among the patients with immunological and stress related oral lesions reported to the outpatient department and to compare that among individuals. The objective of the study was to correlate depression and anxiety with the clinical diagnosis and also to assess their quality of life.

Material & Method

Subjects who were 18 years or above, oriented to time and place and person having immunological or stress related mucosal lesions were included in the study. However patients who were already on medication for any psychological problems were excluded from the study.

The study was conducted in the Department of Oral Medicine and Radiology, Babu Banarasi Das College of Dental Sciences, Lucknow, Uttar Pradesh, India, after approval by Institutional Ethical Committee. Total 50 patients participated within the study in which 32 were males and 18 were females. On the basis of clinical examination patients were screened for oral lichen planus (reticular, erosive & mixed type) and recurrent aphthous

ulcer. Once the diagnosis was made, patients were explained about the questionnaire form and after the willingness of the patients they were asked to participate and fill the questionnaire. Evaluation of hysteria and depression levels was done by the assistance of Hospital anxiety and depression scale (HADS). The vision of the HADS score is its simplicity, speed and simple use. It assesses both anxiety and depression levels, which commonly coexist (Shah et al, 2009). Anxiety often precedes depression in response to stressors, and

identifying high or rising anxiety before depression allows health practitioners to advise an early intervention measures while the affected remains at work (Tawil et al, 2009). The questionnaire form with 14 alternate questions on anxiety and depression was made available in two different languages (English & Hindi) to the patients. The questionnaire was comprised of seven alternative questions each for anxiety and depression (Huber MA, 2004).

Hospital Anxiety and Depression Scale (HADS)

Tick the box beside the reply that is closest to how you have been feeling in the past week. Don't take too long over you replies: your immediate is best.

D	A	D	A
	I feel tense or 'wound up':		I feel as if I am slowed down:
3	Most of the time	3	Nearly all the time
2	A lot of the time	2	Very often
1	From time to time, occasionally	1	Sometimes
0	Not at all	0	Not at all
	I still enjoy the things I used to enjoy:		I get a sort of frightened feeling like 'butterflies' in the stomach:
0	Definitely as much	0	Not at all
1	Not quite so much	1	Occasionally
2	Only a little	2	Quite Often
3	Hardly at all	3	Very Often
	I get a sort of frightened feeling as if something awful is about to happen:		I have lost interest in my appearance:
3	Very definitely and quite badly	3	Definitely
2	Yes, but not too badly	2	I don't take as much care as I should
1	A little, but it doesn't worry me	1	I may not take quite as much care
0	Not at all	0	I take just as much care as ever
	I can laugh and see the funny side of things:		I feel restless as I have to be on the move:
0	As much as I always could	3	Very much indeed
1	Not quite so much now	2	Quite a lot
2	Definitely not so much now	1	Not very much
3	Not at all	0	Not at all
	Worrying thoughts go through my mind:		I look forward with enjoyment to things:
3	A great deal of the time	0	As much as I ever did
2	A lot of the time	1	Rather less than I used to
1	From time to time, but not too often	2	Definitely less than I used to
0	Only occasionally	3	Hardly at all
	I feel cheerful:		I get sudden feelings of panic:
3	Not at all	3	Very often indeed
2	Not often	2	Quite often
1	Sometimes	1	Not very often
0	Most of the time	0	Not at all
	I can sit at ease and feel relaxed:		I can enjoy a good book or radio or TV program:
0	Definitely	0	Often
1	Usually	1	Sometimes
2	Not Often	2	Not often
3	Not at all	3	Very seldom

Please check you have answered all the questions

Scoring:

Total score: Depression (D) _____ Anxiety (A) _____

0-7 = Normal

8-10 = Borderline abnormal (borderline case)

11-21 = Abnormal (case)

Result

Continuous data were summarized as Mean ± SD (standard deviation) whereas discrete data (categorical) in number (n) and percentage (%). Association of depression and anxiety with age and sex were assessed by chi-square (χ^2) test whereas clinical diagnosis was assessed by using one – way Anova. A two-tailed ($\alpha=2$) probability (p) less than 0.05 ($p<0.05$) was considered statistically significant. Analysis was performed on SPSS software (Windows version 17.0).

The demographic characteristics (age and sex) of subjects is summarized in Table 1. The age of subjects ranged from 18-63 yrs with mean (\pm SD) 36.04 ± 12.83 yrs and median

Table 1: Basic characteristics of subjects

Basic characteristics	No. of subjects (n=50) (%)
Age (yrs):	
<25	11 (22.0)
25-35	14 (28.0)
35-45	12 (24.0)
45-55	6 (12.0)
≥ 55	7 (14.0)
Sex:	
Female	18 (36.0)
Male	32 (64.0)
Clinical diagnosis:	
Aphthous ulcer	19 (38.0)
Lichen planus (erosive)	5 (10.0)
Lichen planus (reticular & erosive)	4 (8.0)
Lichen planus (reticular)	22 (44.0)

The age, sex and clinical diagnosis of subjects were summarized in number (n) and percentage (%).

Outcome measure

The distribution (normal/borderline abnormal/abnormal) of depression and anxiety among recruited subjects is summarized in Table 2. Of total, 5 (10.0%) subjects had

34 yrs. Further, among subjects, 18 (36.0%) were females and 32 (64.0%) males.

Further, among patients, total 4 clinical diagnosis were estimated, 19 (38.0%) were with aphthous ulcer, 5 (10.0%) with lichen planus (erosive), 4 (8.0%) lichen planus (reticular & erosive), and 22 (44.0%) the maximum with lichen planus (reticular) (Table 1).

normal depression, 12 (24.0%) borderline abnormal and 33 (66.0%) abnormal.

Similarly, 3 (6.0%) subjects had normal anxiety, 6 (13.0%) borderline abnormal and 41 (81.0%) abnormal.

Table 2: Distribution of depression and anxiety among recruited subjects

Outcome measure	No. of subjects (n=50) (%)
Depression:	
Normal	5 (10.0)
Borderline abnormal	12 (24.0)
Abnormal	33 (66.0)
Anxiety:	
Normal	3 (6.0)
Borderline abnormal	6 (13.0)
Abnormal	41 (81.0)

Correlation

($p > 0.05$) depression between the groups ($\chi^2 = 3.44$, $p = 0.179$) i.e. also not differed significantly.

A. Depression

The distribution (normal/borderline/abnormal) of depression according to age, sex and clinical diagnosis is summarized in Table 3 and Table 3.1 and also shown in Fig. 1.

Further, comparing the distribution of depression among different clinical diagnosis groups, using one – way Anova test shows p-value of 0.045, i.e. differed significantly.

Comparing the distribution of depression between different age groups, χ^2 test showed similar ($p > 0.05$) depression among the groups ($\chi^2 = 10.64$, $p = 0.223$) i.e. did not differed significantly.

In conclusion, depression may not found to be associated to age and sex but it is significantly associated with the diagnosis.

Similarly, comparing the distribution of depression between two gender groups, χ^2 test further showed similar

Table 3: Distribution of depression according to age and sex

Variable	Depression			χ^2 value	P value
	Normal (n=5) (%)	Borderline abnormal (n=12) (%)	Abnormal (n=33) (%)		
Age (yrs):				10.64	0.223
<25	0 (0.0)	4 (33.3)	7 (21.2)		
25-35	4 (80.0)	3 (25.0)	7 (21.2)		
35-45	1 (20.0)	1 (8.3)	10 (30.3)		
45-55	0 (0.0)	2 (16.7)	4 (12.1)		
≥55	0 (0.0)	2 (16.7)	5 (15.2)		
Sex:				3.44	0.179
Female	0 (0.0)	4 (33.3)	14 (42.4)		
Male	5 (100.0)	8 (66.7)	19 (57.6)		

Table 4: Distribution of depression according to clinical diagnosis

Variable	Depression			F value	P value
	Normal (n=5) (%)	Borderline abnormal (n=12) (%)	Abnormal (n=33) (%)		
Clinical diagnosis: Apthous ulcer	1 (2.0)	5 (10.0)	13 (26.0)	10.27	0.045
Lichen planus (Reticular, erosive & mixed)	4 (8.0)	7 (14.0)	20 (40.0)		

The distribution (normal/borderline abnormal) of depression according to age and sex summarized in number (n) and percentage (%) and compared by χ^2 test and for clinical diagnosis compared by using one – way Anova test.

Comparing the distribution of anxiety between different age groups, χ^2 test showed similar ($p > 0.05$) anxiety among the groups ($\chi^2 = 6.31$, $p = 0.613$) i.e. did not differed significantly.

Similarly, comparing the distribution of anxiety between two gender groups, χ^2 test further showed similar ($p > 0.05$) anxiety between the groups ($\chi^2 = 3.06$, $p = 0.216$) i.e. also not differed significantly.

Further, comparing the distribution of anxiety among different clinical diagnosis groups, using one – way Anova test shows p-value of 0.41, i.e. differed significantly.

In conclusion, anxiety may not found to be associated with age and sex but it is significantly associated with the diagnosis.

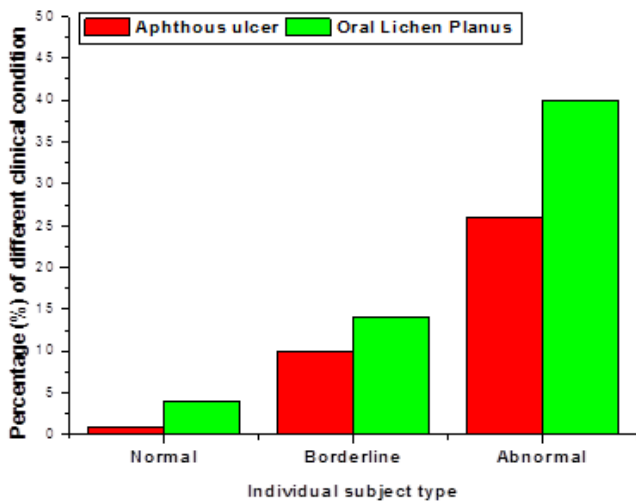


Fig. 1

B. Anxiety: The distribution (normal/borderline abnormal) of anxiety according to age, sex and clinical diagnosis is summarized in Table 4 and 4.1 and also depicted in Fig. 2.

Table 5: Distribution of anxiety according to age and sex

Variable	Anxiety			χ^2 value	P value
	Normal (n=3) (%)	Borderline abnormal (n=6) (%)	Abnormal (n=41) (%)		
Age (yrs):					
<25	0 (0.0)	1 (14.3)	10 (25.0)	6.31	0.613
25-35	2 (66.7)	2 (28.6)	10 (25.0)		
35-45	1 (33.3)	3 (42.9)	8 (20.0)		
45-55	0 (0.0)	1 (14.3)	5 (12.5)		
≥55	0 (0.0)	0 (0.0)	7 (17.5)		
Sex:					
Female	0 (0.0)	4 (57.1)	14 (35.0)	3.06	0.216
Male	3 (100.0)	3 (42.9)	26 (65.0)		

Table 6: Distribution of anxiety according to clinical diagnosis

Variable	Anxiety			F value	p value
	Normal (n=3) (%)	Borderline abnormal (n=6) (%)	Abnormal (n=41) (%)		
Clinical diagnosis:					
Aphthous ulcer	1 (2.0)	3 (6.0)	15 (30.0)	10.98	0.041
Lichen planus (Reticular, erosive & mixed)	2 (4.0)	3 (6.0)	26 (52.0)		

The distribution (normal/borderline abnormal) of anxiety according to age and sex is summarized in number (n) and percentage (%) and compared by χ^2 test and for clinical diagnosis compared by using one – way Anova test.

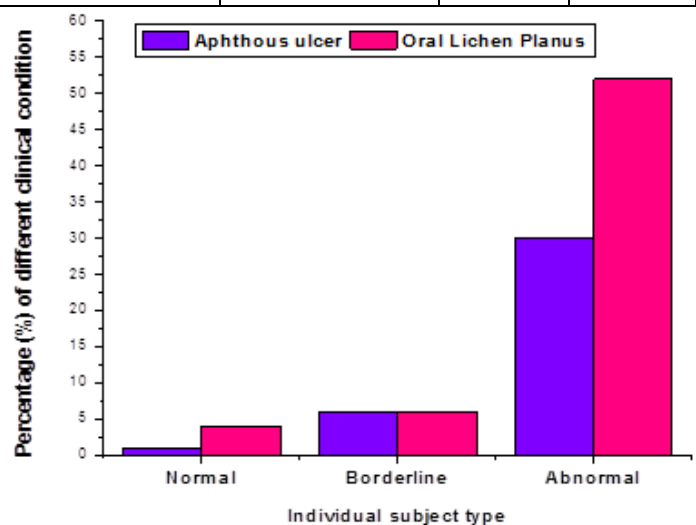


Fig. 2

Discussion

Researches on psychosomatic disorders involving pathologies in oral cavity have not shown any conclusive results yet. There is a complex relationship exists between the psychological state of person to the oral cavity. Anxiety and depression being the most common psychological problems in day to day life. According to the recent survey India is one of the most common country to have most number of the people who are stressed or having other psychological problems. This chronic abnormal mental state leads to disrupted function of hypothalamic –pituitary-adrenal (HPA) axis which leads to the symptoms.

The etiopathogenesis of oral lichen planus considered to be multiple interactions of autoimmune, genetics and other environmental factors (Vassandacoumara and Daniel, 2017). Many researchers relate emotional factor or stress as one of the etiological factor for oral lichen planus but this was not found same for all the cases. Allen et al, 1986 did not find any significant difference in patients with oral lichen planus and other individuals and proposed that patients suffering from oral lichen planus have no other manifestations of anxiety or any other stressful events as compared to other individuals whereas Koray et al, 2003 suggested that oral lichen planus is very much closely related to stress and some kind of psychological support is also required apart from normal treatment.

Recurrent aphthous ulcer is the most commonly occurring pathological condition yet the mechanism is unknown. It affects men and women of all races, ages and geographic regions. The most common possible hypothesis regarding the pathophysiology of it is considered to be stress, anxiety, hormone or low immunity (Nadendls et al, 2015). At least 1 in 4 is affected by it, mainly during young age. There seems to be no exact treatment for the same although focus is only to reduce the severity and

symptoms of the ulcer (Natah SS et al, 2004 and Kaur D et al, 2016).

In our study 50 patients were included for which distribution of both anxiety and depression patients were measured under normal, borderline abnormal and abnormal; under depression category the number / percentage of patients were, normal 5 (10.0%), borderline abnormal 12 (24.0%) and abnormal 33 (66.0%) whereas under anxiety, it was normal 3 (6.0%), borderline abnormal 6 (13.0%) and abnormal 41 (81.0%). Correlation between the two diagnostic groups and anxiety and depression was checked by using one-way anova, which showed positive correlation and was statistically significant which is in relation to previous studies also. Our study did not show positive correlation between anxiety and depression with age and sex of the patient.

In a review by Tu TTH. et al, 2019 he emphasis on the correlation between the BMS and the treatment of that with non pharmacological methods, he also emphasize on the important role of the patient counseling and anxiety management towards improving the quality of life of the patient.

A study conducted by (Borges R and Prashant YM, 2016) concluded that anxiety tends to decrease with advancing age and females had higher incidence of episodes of anxiety as compared to the males. Another study conducted by (Suresh KV et al, 2015) found that oral lesions like recurrent aphthous ulcers, oral lichen planus and burning mouth syndrome are significantly higher in patients having anxiety and depression than control patients. Another study by (Sunita Tiwari et al, 2017) concluded that a positive relationship can be established between psychological problems and RAS, OLP and BMS. She also concluded that anxiety levels were high in patients with RAS and OLP whereas in BMS, both anxiety and depression levels were high.

According to the previous literature, we can say that psychological factors should be considered first when oral health needs to be maintained. Studies show that anxiety and depression can increase the inflammatory levels in the body leading to the various inflammatory conditions. Various studies have also confirmed this hypothesis. Our study also suggests that increase in the stress; anxiety levels or depression state could lead to the development of ulcers and / or lichen planus. Previous literature also supports that rise in the levels of anxiety and depression may lead to the development of oral pathological condition. These conditions are often associated with restlessness, lethargy, hunger loss, insomnia which should not be misunderstood by mood fluctuations.

There is considerable pain in patients with these stress related oral pathological conditions that can adversely affect their quality of life. It is very complex to analyze the relation between oral changes to the stress. Further studies are needed with larger sample size to establish relationship between anxiety, depression and immune mediated mucosal conditions.

Conclusion

Stress management interventions can improve the quality of life of patient with psychosomatic disorders by identifying the risk factor to increase their ability to cope up with the stress, along with other conventional treatment methods.

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