# The Different Realization of Discourse Analysis in Translating Dentisty Abstracts into Arabic

**Mohammed Nihad Ahmed**<sup>(1)</sup>

#### الملخص

تم توجيه هذه الدراسة إلى تحليل الخطاب في مجال طب الأسنان والذي طبق على خلاصات المترجمة إلى البحوث مع ترجماتها. أبرزت الدراسة الوظائف الخطابية الموجودة في تلك الخلاصات المترجمة إلى النص الهدف، فركزت فيها على المعطيات التي تتضمن نماذج تركيبية في قرائنها السياقية. فمن خلال الوصف المتنوع للخطابات، أشارت الدراسة إلى عدة مسائل قيد المناقشة. لقد كانت طبيعة الدراسة وصفية أكثر من أن تكون معيارية في تركيزها على قضايا الترجمة، وما على المترجم أن يقوم به خلال ترجمة الخطاب في مجال طب به خلال ترجمة الخطاب في مجال طب الأسنان الذي يكتب لأغراض البحث الأكاديمي يتميز بكونه خطاباً مباشراً و رسمياً وبسياقات علمية بحتة. ومن ناحية أخرى يجب على المترجم أن يتميز بقدرات ماهرة مع خبرة احترافية من أجل علمية بحتة. ومن ناحية أخرى يجب على المترجم أن يتميز بقدرات ماهرة مع خبرة احترافية من أخل بناء الخطاب الهدف بصورة ناجحة ومفهومة، بالرغم من أن المترجمين – أطباء الأسنان أنفسهم يملكون باعاً متميزاً في فحوى ونوع النص الذي يشرعون بترجمته. بينما يعجزون نوعاً ما عن نقل النص الأصلي إلى التركيب المناسب في الخطاب الهدف وهذا ربما يرجع إلى نقص الخبرة في تركيب النطاب المقارن بين اللغتين الإنكليزية والعربية لأجل التوصل إلى ترجمة ناجحة في اللغة الهدف.

#### **Abstract**

This study is directed towards the analysis of dentistry discourse, applied to the published paper abstracts with their translations. The study pointed out the discoursal functions projected in the paper abstracts that are rendered into the TL; it spotlights the randomly selected data that contains structural patterns in their contextual domains. Throughout the representation of the multifarious elaboration of the discourses, the study noted several issues under discussion. The nature of this study is descriptive rather than prescriptive in terms of the translation issues and what the translator has to do in rendering the dentistry discourse. The study

Received: 17/8/2004 Accepted: 13/10/2004

<sup>(1)</sup> Assistant Lecture, Dentisty College/ Dept. of Basic Sciences.

concluded that the dentistry discourse, which is written for academic purposes, has a property of being direct, formal and that follows purely scientific techniques. The translator therefore should be skillful, having professional know-how in order to construct the target discourse in a successful and comprehendible way, despite that fact that the dentists-translators themselves have adequate experience of the subject matter of the text typology they embark on. Yet they, to some extent, could scarcely render SL into the suitable construction on TL discourse and that could be due to the lack of the contrastive discoursal structures between English and Arabic in order to realize a more successful rendering in the target language.

# 1. Introduction

Nearly, all accounts of language structure set forth, since classical antiquity have relied essentially on the notion of the sentence. Different criteria for the sentence have persisted without being explicitly stated as decisive rather than unifying features of proper standards. Hence, sentence is an abstract pattern consisting of a number of positions filled with certain elements stated as SVOCA as in the following example:

1. This study (S) was undertaken to elucidate (V) the effect of fixed orthodontic appliance (C) on the microbial composition of dental plaque (A) (Al-Sayagh, Al-Hamdany and Barhawy, 2002:201) (\*).

وضعت هذه الدراسة لتوضيح تأثير جهاز التقويم الثابت على الجراثيم الفموية الموجودة في الصفيحة الجرثومية.

The above English sentence consists of certain structural patterns. The first position is filled with the S (Subject), while, the second one is filled with V (Verb), the third one filled with the C that is compliment,

<sup>(\*)</sup> The following examples will be taken with their translated abstracts that are published in the dental journals themselves. The researcher himself henceforth will not render these examples in this study.

the fourth one is with A (Adverb) (Qirk et al, 1972: 167; C.f. Aziz, 1989:195; Aziz and Lataiwish, 2000:29).

Within this grammatical patterning, the sentence expresses a meaningful entity. According to the pioneer theories of language, the meaning of the sentence is determined by the proposition, which is expressed by the sentence itself. The above exempting sentence describes a state of affairs in the external world. Several texts in these registers are written in which the dental health is assessed from a socio-medical environment (field); as processed by a medical academic for semi-specialists readers (tenor) and as written to be within the conventions of academic writing (mode). The analysis can possibly be conducted on a large samples of texts, that consequently form the basis for establishing a special language known as medical register constituting a recognized area of expertise within translator training and testing (Hatim and Mason, 1990:56).

The translating process, as in the following structure, requires a locating equivalent terminology in the appropriate field and realizing TL expression in the suitable tenor and mode:

2.The results indicated that <u>the flexure of basicranium</u> has a detectable effect on <u>facial divergence</u> in a sample of young Iraqi adults in Mosul city, <u>to investigate the pattern of facial divergence of the sample</u> and to reveal the <u>sex difference</u> in facial divergence (Al-Hamdany, 2002: 249).

أظهرت النتائج أن انحناء قاعدة الجمجمة له تأثير ملحوظ على التباعد الوجهي في عينة مكونة من البالغين العراقيين في مدينة الموصل وللتقصي عن نموذج التباعد الوجهي لهذه العينة، ولإظهار أي اختلافات في التباعد الوجهي لكلا الجنسين.

Each discoursal construction expresses a certain state of affairs and coveys a certain message or datum to the receptors. The reader would infer the underlying intention on the part of the writer to show the diagnostic and the detection of the case-study and the goals of the research. It is noted that, a form of strategy is detectable through transferring that information. The writer may follow variant shifts in

translating the scientific matters from one language into another, for every scientific language has its own discoursal templates to elucidate the process of standardizing the register. The expression **sex difference** is however not necessarily کلا الجنسین as a contextual meaning of the equivalent terminology.

## 2. Scientific Translation

Translation in general is defined as the process of transferring the meaning from one language into another. Several studies conducted on the concept of translation, the factors that make it more accessible to the TL receptors. Translation is a difficult business and the translator has an awesome task towards the translating from one language into another, i.e., the cultural scientific ideologies that this entails (Asmar, 1996:500; Farghal and Shunnaq, 1999: 1).

Hence the scientific translation is that task of conveying the scientific language into another one. The main aim is to render the information in a language into another language. It bears many criteria in its content: that translator should be competent bilingual because this type of translation is direct and less artistic than the literary one. The most important property of this type is that the translator should pay much more attention to the content rather than the form (Qasim, 2003:61).

The scientific translation, the subject matter, the ideas, data and the bulk of the discourse have the priority over the stylistic and figurative functions. The main task here is that the translator has to be accurate, delicate, well experienced in transferring those ideologies of the ST into TL.

# 3. The Concept of Sentence, Text and Discourse

The multi-level of the entity relationships of the text is the actual system to the generalized concept of the text, but the sentence is fundamentally, the full-sized construction that contains the precision of the conceptual structure in its own units, i.e., the elements of the virtual systems of language construction. Sentence is purely a grammatical entity that can be defined in terms of the syntactic discourse analysis. As we noticed, the sentence is the main element

delineated within the structure; a number of sentences are structured with each other within the syntactic, semantic and logical connectivity that will form a sort of textuality that grammatically consists of constraints imposed upon abstract sentence structures overridden by context-dependent motivations. Hence, text can be elaborated appropriately to a situation of occurrence and enrolled by context to refer to a certain state of affairs (de Beaugrande, 1981:9; Brown and Yule, 1983:6).

In recent years, several linguists have attempted to uncover the syntactic regularities in the text under its own variations, conditions, motivations and interceptions. These attempts are crystallized to form that acute branch of studying language, which is discourse analysis (DA). It recognizes semantics as playing a primary role in the organization of the linguistic phenomena. Via (DA), meaning is perceived as the driving force of language and is found even in linguistic phenomenon that are often considered to be merely syntactic, semantic and logical inferences (Janda, 1993:308). As in:

3. This study was designed to evaluate the relationship between the occurrence of the root surface caries and a subject's dental health habits such as frequency of tooth brushing and the use of other cleaning aids such as chewing stick and dental floss in the adult population aged 30-70 years in Mosul City (Al-Sayegh, 2002:176).

 $\frac{\dot{\hat{c}}ddr^{*}}{d}$  هذه الدراسة لمعرفة مدى  $\frac{\partial}{\partial t}$  تسوس جذور الأسنان وعلاقته بسلوكية الشخص من حيث صحة الفم والأسنان (عدد مرات استعمال فرشاة الأسنان،إضافة إلى استعمال وسائل تنظيف ما بين الأسنان مثل استعمال المسواك والخيوط السنية من العمر 70-0 سنة في مدينة الموصل/ العراق.

In this respect, the major components of the discourse analysis are to be taken as the comparative functional mapping criterion into consideration. In the above example, the source text structure started up with the passive transformation. In the target text, starting with the same passive structure. Arabic in general tends to make use of the active voice rather than passive voice. Another important point here is that the lexical item تواجد normally refers to the concept of passions and love, while in the source text **the occurrence** refers to the concept of existence and happening in a given situation. We have to mention that the original text contains the spatial sphere of the discourse **in Mosul City**, but in the rendered version of the TL text the translator used a redundant or an over translation by using مدينة الموصل/ العراق and vice versa, the translator should use Iraq in the English as source text rather than Arabic target text. Thus, the use of the lexico-grammatical information has a distinct representation within the context. It provides a conceptual framework of a skeletal structure for the textual material that is specified within the discourse (C.f. Janda, 1993:308; Menacere, 1994:205).

The theoretical orientation of discourse analysis is to focus on the rules of sequence of the units of text typology. On the discoursal level, the text typology can be observed as an individual configuration of the relational dominance obtained among elements. They are among the surface text, the textual world, the shared knowledge patterns and the situation of occurrence. As a result, these dominants are powerfully affecting the preferences of translating, restructuring, arranging and mapping options during the re encoding process of the text (C.f. de Beaugrande, 1981:10, Janda; 1993: 310; 2000:7; El-Shiyab, 1994:233). As in the following:

4. <u>It was concluded</u> that dental health behavior influences root caries occurrence and that caries on root surface is <u>associated with</u> poor dental health habits (Al-Sayegh, 2002: 176).

يُستنتج من هذه الدراسة أن سلوكية صحة الفم والأسنان تؤثر في تواجد تسوس جذور الأسنان و إن تسوس الأسنان متوافق مع عادات صحة الفم و الأسنان السيئة.

In this case, the tense of the underlined source structure is in the past, but in the target text is in the present. Hence, it can be rendered as أُستنتج Another point here is that it is

preferable to render (associated with) into متوافق مع rather than متوافق مع المتوافق المتوافق مع المتوافق ا

# 4. Informative Function of Discourse

On the basis of the Buhler's functional / theory of language, Newmark (1988:39) gives a brief account of the main characteristics of the functions of the informative text. It is per se an external situation: the facts of the topic, reality outside language, including reported ideas, theories, thoughts, suggestions... etc. The typical informative texts are concerned with any topic of the knowledge i.e. they are focusing on the information inside these ideas of the text that could be scientific explanations rather than the variegation of the textual matters. Whilst, in the literary texts, the expressive identity of the text has its own value and prior importance (Newmark, 1988:39; El-Shiyab, 1994:234).

The format of the informative function is often standard: textbooks, technical reports, an article in newspapers, scientific papers. abstracts ...etc. The nature of the informative function is that non-emotive, technical style and standardized terminology for academic papers, it is characterized by using passive constructions, present and perfect tenses. It is a literal language, Latinized vocabulary, no figures of speech, jargon, and multi-noun compounds with empty verbs. The scientific text is a part of specialized language. The grammatical properties are the use of passives, the movement of the clause patterns, present tense and thematization often terms are coined and re coined and old terms which have gained some currency are replaced by new and more correct ones i.e. the name is accepted by the people who use it Aziz and Lataiwish, 2000:102). As in:

5. The vinillin material was prepared in this study by the use vanillin 2%. Two microorganisms were selected to examine the antimicrobial activity of the vanillin against dental carries. These microorganisms are Streptococcus mutans and Lactobacilli; both

are isolated from the dental plaque on the carries surface and from saliva (Qassab-Bashi, 2002:158).

تم تحضير فانيلين نقي (٢٪)، وكذلك نوعين من البكتيريا المسببة لتسوس الأسنان، تم جمع العينات من أسطح الأسنان المتسوسة ومن اللعاب.

In above example, it is noted that brevity and clarity are delimited in the SL into the TL, because the translator's main aim is to convey the information to the TL receptor via using the most familiar syntactic structure and terminology in an understandable way. But that may be at the expense of the meaning of the discourse. The TL type contains many neglected items on SL. First of all, the concept of microorganisms does not necessarily refer to bacteria only. The translator does not render Streptococcus mutans and Lactobacilli that are المكورات و العصيات السبحية. Thus, the translator has to be aware of explaining the constituents of the SL into TL.

Basing on the medical stylistic templates of the language. Newmark, 1988:153 suggests the following types:

- a. Academic: This includes transferred Latin and Greek words associated with academic papers as in: periodontium, Mucosa, Endedontia, Isthmus, glossplegia, granuloma, stomatitis...etc.
- b. Professional: formal terms used by experts as in: surgical impression, pit and fissure sealant, periodontal disease, crown and bridge, decay, resections, cephalometric, etc.
- c. Popular: layman vocabulary that may include familiar alternative terms as in: transplant, two-piece implant, polishing, reattachment, stippling, etc.

Thus, the scientific discourse has a property of being a specialized meaningful entity that expresses a state of affairs as being facts and habits, methods, conclusions and results. It is not easy however to make absolute generalizations about the diverse and register of the scientific texts, because it spells over into diagrams,

histograms, schedules, graphs, tables, illustrations and figures. One of the constituents making a criterion as an essential template of the scientific or technical discourse is that technology is an escalating and volatile exponentially that is escorted with an innovation of terminology (Newmark, 1988:153; Aziz and Lataiwish, 2000:117). Consider the following text:

6. The results of the study revealed that subjects with <u>RSC</u> in the young age group (30-39 years) claimed to brush their teeth once day and twice a day or more, whereas subjects with <u>RSC</u> in the old group (60-69 years) claimed to brush their teeth infrequently. Statistically, the difference between subjects with and <u>without RSC</u> was <u>significant for all age groups</u> (Al-Sayegh, 2002:176).

أظهرت نتائج الدراسة أن الأشخاص المصابين بتسوس جذور الأسنان من الفئة العمرية (٣٠-٣٩) سنة ادعوا بأنهم يقومون باستخدام فرشاة الأسنان مرة و مرتين أو اكثر يوميا، بينما ادعى المصابون من الفئة العمرية (٦٠-٦٩) بأنهم يستخدمون فرشاة الأسنان بصورة غير منتظمة. لا يوجد اختلاف إحصائي بين الأشخاص المصابين و غير المصابين بتسوس جذور الأسنان بالنسبة إلى كافة الفئات العمرية.

To sum, the concept of discourse in general is defined as a suprasegmental unit of language in use, i.e. that unit of language which is higher than sentence and has an interception with the context of situation to express a state of affairs. Hence, in the use of the dentistry discourse, it is merely a branch of the scientific language including medical dental stylistic register for referring to certain case. As in the above example, The use of abbreviations has a property of being the most important criterion in the medical dentistry discourse as in:

7. In this study, a total of 36 patients who need endodontic surgery for upper anterior teeth were participated. Patients

divided randomly into 2 groups, group (A) <u>in which each</u> patient received a <u>supplementary anterior</u> and <u>middle superior alveolar nerve block injection (AMSA) and infiltration anesthetic (supra – periosteal) injection of total 4.25 ml. of anesthesia solution (Al-Sultan, 2002:379).</u>

شارك في هذه الدراسة ٣٦ مريض يحتاجون إلى عمليات معالجة لبية جراحية لأسنان علوية أمامية. قسم المرضى إلى مجموعتين، المجموعة " أ " وكل مريض فيها أعطي تخدير حاجز للعصبين الأمامي و الوسطي العلوي السنخي إضافة إلى التخدير بالارتشاح موضعياً بكمية مخدر هي ٤.٢٥ مل زايلوكائين ٢٪ مع ادرينالين.

- This type of stylistic function within the medical dentistry discourse can affiliate to the use of economy in time and space for understanding the TL discourse itself.

# 5. Transformation of Clause Patterns in English and Arabic

The simple sentence contains one clause only. There are particular slots within the structure of the sentence that can be filled with elements. The elements within the construction of the sentence are the subject and verb. Arabic may differ from English in the element bricks of the sentence structure.

Aziz (1989: 195) explains the minimal sentences that have various types of simple sentences in both languages. The (SVOCA) patterns do exist in both languages. As a result, the clause patterns in both languages have their own properties of treating the constituents of the structure i.e. they differ in their own according to the grammatical conditioning, contextual information and the structural pattering of the discoursal coherent and cohesive devices in the different languages.

## 6. Thematization in the Discourse

This term is used to refer to the study of discourse analysis of the structure of the sentences as is called thematic structure. In this respect the encoder of the message, i.e., writer or speaker identifies the relative importance of

the subject matter. Theme can possibly add something advanced to the process of communication and / or extra meaning to what has been communicated. The main delineated function of theme is to refer to the formal category "that is the left-most constituent of the sentence; it is the starting point of the utterance". In general, the concept of thematization is habitually a discoursal rather than sentential process, because the position of the elaborated item in the first will interpret all the remaining delimited patterning within the structure of the discourse (Brown and Yule, 1983: 133; Crystal, 1991:351; Haegeman and Gueroman, 1999: 522) as in the following abstract:

8. Eleven hypertensive and nine diabetic patients under treatment with appropriate therapy show oral mucosal lesions mimic linchen planus. The clinical and histological features of the lesion were studied. Stress was made on the type and distribution of the inflammatory infiltrate seen in the histologic section of the lesions. It was found that the infiltrates show features differ from the infiltrate demonstrated in conventional lichen planus (Saka and Husein, 2002: 198).

احد عشر مريضا يعانون من ارتفاع ضغط الدم وتسعة يعانون من داء السكري وهم تحت العلاج المناسب لكل منهم، ظهرت عندهم آفات في الغشاء المخاطي المبطن للتجويف الفموي للحزاز المنبسط. تم دراسة المواصفات السريرية والنسيجية وكان التركيز على نوع وانتشار الخلايا الالتهابية على الشرائح النسيجية لهذه الآفات. لقد تبين أن انتشار الخلايا الالتهابية اظهر مواصفات تختلف عن انتشار الخلايا الالتهابية للحزاز المنبسط.

In the Arabic structure, the propositional content of the pattern is expressed to asserted that the patients were eleven and they suffer hypertension and diabetics. The part of SL text (it was found) is rendered into (اقد تبین) as in the imperfect case. This sort of marked construction bears a wide range of propositional content of the implicated meaning of the TL text. The passive also can yield an unmarked use of the thematizing process as in:

9. This study was designed to investigate the relationship between root surface caries and systematic disease (diabetics, hypertension and heart problem) in the adult and elderly population in Mosul City, Iraq (Khamarko, Al-Sayegh and Makani, 2002: 220).

في مدينة الموصل/ العراق، صُممت هذه الدراسة لمعرفة العلاقة بين تسوس جذور الأسنان مع الأشخاص المصابين بأمراض جهازيه ( السكر وارتفاع ضغط الدم و أمراض القلب) عند الأشخاص البالفين والمسنين.

In this example, the translator tries to convey the commulative instructions of the coherent representation in TL. Thus, the system of thematization provides the furcated discoursal meaning as required by the textual encoder and allow the structure of the clause to be manipulated in the way that permit the focus on the parts of the message to make it as a ready-made for the TL receptors (C.f. Bell, 1991: 150).

# 7. Conclusion

This study concluded that the dentistry discourse is that type of genre that is written for the scientific purposes and is characterized by giving the communicative functions and not only the formal properties of the textual construction. Some of the dentistry paper abstracts consist of the familiar terminology especially in the field of community dentistry that may facilitate the process of simulating the community in a simplest way. Most of the translators of the dentistry paper abstracts as discourses are, as one may conclude from the TL texts usually dentists themselves which has been useful in rendering the abstracts as well as other pieces in a suitable way. However, those dentist-translators and sometimes the writers of those abstracts are less aquatinted with the various exegeses and the formal properties of the scientific discourse in its nature. A successful translation should attempt at restructuring the encoder's point of view on the basis of the embodied context of the whole situation including the technical needs. The translator should delineate his renderings in an acceptable way i.e. the translator has not to be only a bilingual mediator of the discourse but a bicultural with the technical requirements. Through discussing these paper abstracts, the study sees that the translators are successful in finding the terminology on TL, yet they require to refresh the discoursal knowledge in the field of translation.

# References

- Asmer, M. (1996). (Review). Hatim, B. Shunnaq, A. and Buckley, R. (1995). <u>Arabic-English Translation: Practical Guide</u>. Jordan: Dar Al-Hialal for Translating and Publishing. Translatio, XV: 1,5-20.
- Aziz Y. and Lataiwish , M. (2000). <u>Principals of Translation</u>. Benghazi: Dar Al-Kutub Al-Wataneyyah.
- Aziz, Y. (1989). A <u>Contrastive Grammar of English and Arabic</u>. Mosul: Higher Education Press.
- Brown, G. and Yule, G. (1983). <u>Discourse Analysis</u>. Cambridge: Cambridge University Press.
- Crystal, D. <u>A Dictionary of Linguistics and Phonetics</u>. London: Blackwell Publishers.
- de Beaugrande, R. (1980). <u>Text, Discourse and Process</u>. London: Longman Group Ltd.
- El-Shiyab, S. (1997). "Verbal and Nonverbal Constituents in Historical Texts and Implications for Translators". In: Payatos (ed.), Nonverbal Communication and Translation, New prospective and Challenges in Literature, Interpretation and Media (p.p. 204-213). Amsterdam: J. Benjamin.
- Farghal, M. and Shunnaq, A. (1999). <u>Translation with Reference to English and Arabic: A Practical Guide</u>. Irbid: Dar Al-Hilal for Translation.
- Haegeman, L and Gueron, J. (1999). <u>English Grammar: A generative</u> Perspective. Blackwell Publishers Inc.
- Hatim, B. and Mason, I. (1990). <u>Discourse and the Translator</u>. London: Longman Group Ltd.
- Janda, L. (1993). "Cognitive Linguistics as a Continuation of the Jakosonian Tradition: the Semantics of Russian and Czech Reflexives" In: Maguire and Timberlake (eds.) <u>American Contributions to the Eleventh International Congress of Slavists in Bratislava</u>. <u>Columbus: Salavica</u>, 310-319.
- Janda, L. (2000). Cognitive Linguistics. <u>Slin. G2K Workshop</u>, http://:www.google.com

- Jaworski, A. (1998). "Talk and Silence in the Interrogation". Language and Literature, 7:2,99-122.
- Menacere, M. (1991). "Does Nonvocative Arabic Discourse?" NOVELLES DE LA FIT, X 1-2,180-187.
- Newmark, P. (1988). <u>A Textbook of Translation</u>. London: Prentice-Hall International Ltd.
- Qasim, D. (2003). <u>The Translation of Medical Discourse into Arabic</u>. Unpublished MA thesis. Mosul: Mosul University.
- Quirk, R., Greenbaum, S., Leech, G., and Svartvirk, J. (1972). <u>A</u>
  <u>Grammar of Contemporary English</u>. London: Longman Group Ltd.

# **Texts Analyzed**

- Al-Hamdany A. (2002). The Effect of Basicranial Flexure on Facial Divergence of Iraqi Adults (18-25 years) in Mosul City. In: <u>Al-Rafidain Dental Journal</u>, 2: 2(249-263).
- Al-Sayegh N. (2002). The Occurrence of Root Carries in Relation to Specific Dental Health Habits (oral Hygiene Practice) Years in Mosul City, Iraq. In: <u>Al-Rafidain Dental Journal</u>, 2: 2 (176-183).
- Al-Sayegh N., Al-Hamdany A. and Barhawy E. (2002). Effects of Fixed Orthodontic Appliance on the Microflora of Dental Plaque. In: <u>Al-Rafidain Dental Journal</u>, 2: 2 (201-213).
- Al-Sultan, F. (2002). "Anterior and Middle Superior alveolar Block Anesthesia as a Supplementary New Anesthesia Technique during Endodontic Surgery for Upper Anterior Teeth. In: In: <u>Al-Rafidain Dental Journal</u>, 2:Sp.Iss, (379-387).
- Khamarco, T., Al-Sayagh, Gh. and Makani, L. (2002). Association Between Root Surface Carries Occurrence and Systemic Diseases in Adult and Elderly Population. In: Al-Rafidain Dental Journal, 2:2(220225).
- Qassab -Bashi, T.(2002). The Effect of Vanillin (2%) on the Growth of Cariogenic Bacteria (Streptococcus Mutans and Lactobacillus). In: Al-Rafidain Dental Journal, 2:2 (158-175).
- Saka S. and Hussien A. (2002). Oral Lichenoid Reactions: A Clinico-Pathological Study. In: <u>Al-Rafidain Dental Journal</u>, 2: 2 (198-200).