

# Classification of Periodontal Diseases – Old is Gold or New is Bold? A Survey Study in Egypt



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## Abstract

**Background:** A consensus was reached for a new classification system for periodontal and peri-implant diseases and conditions and was proposed by a group of world experts in 2017. Since then, there have been ongoing debates among periodontists regarding the application of the new classification. This study aims to shed light on the current understanding of the new classification among Egyptian periodontists. **Methods:** This cross-sectional survey study was performed using an anonymous manually distributed questionnaire in various universities in Egypt. The validated questionnaire included 15 questions – 13 multiple choice questions with a Likert scale and two open ended questions, in addition to demographic data of the participant. Qualitative data were presented as frequencies and percentages, and binary and ordinal logistic regression analyses were performed. **Results:** The clarity of the new classification was the only significant predictor for satisfaction. An increase in clarity scores was directly associated with an increase in satisfaction scores (odds ratio = 5.521, 95% CI = 2.198 – 8.844, P-value = 0.001). Only 24.2% of the participants actually applied the new classification. There was a high approval rate on the introduction of “health on reduced periodontium” and the classification of peri-implant conditions. However, there was a huge dissatisfaction with applying the staging and grading system as well as the omission of aggressive periodontitis. **Conclusions:** This survey has identified important gaps between theory and practice and bridging these gaps by revising the controversial points would help develop a clearer, simpler system for clinicians to improve patients’ oral health.

**Keywords:** Classification; periodontal diseases; periodontitis; peri-implantitis

## Introduction

For many decades, different periodontal classification systems have been proposed with the purpose of grouping diseases into distinct categories based on scientific data.<sup>1-3</sup> The main goal has always been to reach a correct clinical diagnosis and subsequently apply the most appropriate treatment. Moreover, with the development of each classification system, a cascade of studies was performed to provide a structured framework for better understanding of the etiology and pathogenesis of different periodontal diseases in order to clear any knowledge gaps. This is in addition to encouraging new treatments modalities to evolve which addressed the proposed

disease categories.<sup>4</sup> Hence, a flash back in the history of classification of periodontal diseases is crucial to understanding where we stand today (Figure 1).

The 1999 International Workshop for Classification of Periodontal Disease and Conditions assented to a detailed classification of periodontal conditions. Over 40 gingival diseases were plotted under two main categories: plaque induced and non-plaque induced gingivitis. This is in addition to seven main categories of disease including periodontitis as a manifestation of systemic diseases, chronic periodontitis instead of adult periodontitis, and aggressive periodontitis as a substitute for early onset periodontitis, which was considered the

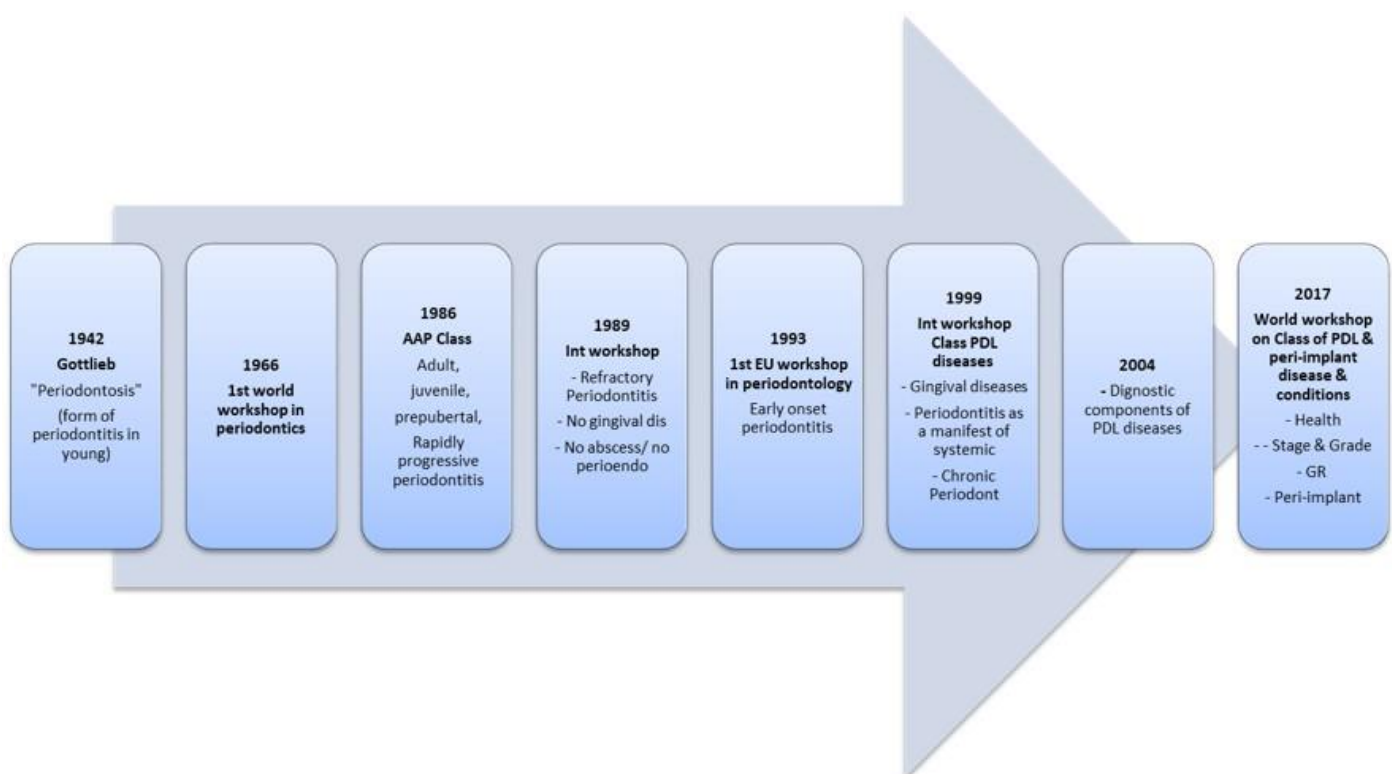
umbrella of all former types of periodontitis affecting young patients, namely: juvenile, prepubertal, and rapidly progressive periodontitis.<sup>2-6</sup>

The 2017 periodontal classification aimed to update the 1999 classification. It was developed in the “World Workshop on The Classification of Periodontal and Peri-implant Diseases and Conditions” co-presented by the American Academy of Periodontology and the European Federation of Periodontology. The most highlighted update was the grouping of the formerly distinguished forms of periodontitis, chronic and aggressive, under a single category using a new staging and grading system for periodontitis.<sup>2</sup> This is in addition to a new classification for gingival recession substituting the widely used Miller’s

classification.<sup>7</sup> The workshop also developed a new category to include peri-implant health and diseases such as peri-implant mucositis and peri-implantitis.<sup>8</sup>

The 1999 classification of periodontal diseases, which had been used for almost two decades, needed to be updated based on new knowledge on pathophysiology and clinical findings of different periodontal diseases.<sup>2,4,8</sup> Applying new knowledge and a new system is always faced with certain challenges, which include the awareness level, the technical difficulties, the feasibility of application, and the size of the gap between theory and practice. Therefore, this study was designed to assess the level of awareness and knowledge of the new periodontal classification among periodontists.

**Figure 1.** Periodontal classification timeline



## **Materials and Methods**

The present study was approved by the Research Ethics Committee of the Faculty of Dentistry of Beni-Suef University (ID #FDBSUREC/27022019/AM) and was conducted in full accordance with the World Medical Association’s Declaration of Helsinki 1975 (revised in 2003). The questionnaire was anonymous with no personal identification data. Completion and submission of the questionnaire was

considered an approved informed consent to participate in the study by the Research Ethics Committee.

The questionnaire was designed by the authors and pilot tested on a group of 12 periodontists for validation. Afterwards, adjustments were made to ensure a clear and comprehensive version of the questionnaire. The questionnaire had a cover letter explaining the nature and purpose of the survey and comprised 15

**Figure 2. Questionnaire**

**Questionnaire**

*Administrative data:*

- Age \_\_\_\_\_ Gender      M       F

- Position/Degree: \_\_\_\_\_

- Years of practice \_\_\_\_\_ Flow of patients \_\_\_\_\_ per day

- Setting of practice (university/hospital/private practice/other \_\_\_\_\_)

Have you heard about the new classification for periodontal diseases?

Yes

No

If yes, please answer the following questions by choosing a number where each represents:

**1. Strongly disagree** 2. Slightly disagree 3. Neutral 4. Slightly agree **5. Strongly agree**

Or **1. Very poor** 2. Poor 3. Fair 4. Very good **5. Excellent**

Or **1. Very dissatisfied** 2. Dissatisfied 3. Neutral 4. Satisfied **5. Very satisfied**

Or **(DK) Don't know:**

		<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>DK</u>
1.	How would you rate the clarity of the new classification?						
2.	Have you applied the new classification at your clinic?	No					Yes
3.	What do you think of adding this item to the new classification "clinical health on a reduced periodontium?"						
4.	What is your opinion of the definition of a periodontitis case?						
5.	How would you rate the staging and grading process in periodontitis?						
6.	What is your opinion of replacing "aggressive periodontitis" with a higher stage and grade on a periodontitis scale?						
7.	Is the staging and grading of periodontitis applicable in the day to day dental clinic?						
8.	Are the systemic diseases affecting the periodontium (and vice versa) clearly covered in the new classification?						
9.	What is your opinion of replacing Miller's classification of gingival recession with the new classification of Cairo et al. in addressing mucogingival conditions?						
10.	Is the implant health and disease incorporation into the new classification useful?						
11.	Do you think the prognosis and treatment planning of periodontal cases will differ in relation to the new classification?						
12.	Is the new classification user-friendly for periodontists and general practitioners regarding their patients flow?						
13.	How satisfied or dissatisfied are you with the overall new classification scheme?						

14. What are the advantages of the new classification?

\_\_\_\_\_

\_\_\_\_\_

15. What are the limitations of the new classification?

\_\_\_\_\_

\_\_\_\_\_

Other comments:

\_\_\_\_\_

\_\_\_\_\_

*Thank you for your time.*

questions addressing the fundamental modifications of the new classification. The first six statements of the questionnaire were descriptive in nature addressing the participant's demographics, and the seventh was a question on whether or not the participant was aware of the new periodontal classification. Only those who were aware of it were asked to proceed to 13 multiple choice questions using the Likert scale, ranging from "strongly disagree" to "strongly agree" or from "excellent" to "poor", in addition to an "I don't know" option.<sup>9</sup> There were also three open ended questions for further comment at the end of the questionnaire (Figure 2).

All questionnaires were manually distributed to periodontists and postgraduate students enrolled in master's and PhD programs at the Periodontology Department of a number of public and private universities in Egypt, namely Cairo University, Ain Shams University, Al-Azhar University, Beni-Suef University, Misr International University, University of Modern Sciences and Arts, Modern University for Technology

and Information, and Ahram Canadian University. The responses were collected over a period of eight weeks.

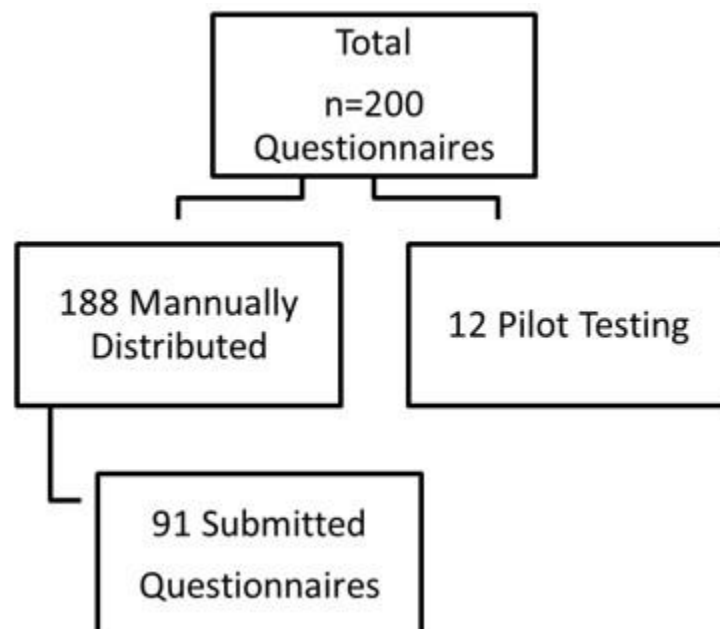
Numerical data were presented as mean and standard deviation (SD) values. Qualitative data were presented as frequencies and percentages. Binary logistic regression analysis was performed to determine significant predictors for the new classification application. Ordinal regression analysis was performed to determine significant predictors of satisfaction with the new classification. The significance level was set at  $P \leq 0.05$ . Statistical analysis was performed using computer software.<sup>a</sup>

## Results

### I. Response Rate and Piloting

The questionnaire was distributed to 12 periodontists for validation and whose responses were not included within the study results. It was subsequently distributed to 188 participants, 91 of whom responded, giving a response rate of 48.4%. (Figure 3).

**Figure 3.** Questionnaire distribution



### II. Demographics

The present study was conducted on 91 periodontists, 52 of whom were females

(57.1%) and 39 males (42.9%). The mean  $\pm$  standard deviation values for age were  $31.2 \pm 5.2$  years with a minimum of 25 and a maximum of 52 years, and a 95%

<sup>a</sup> IBM® Statistical Package for Social Sciences (SPSS®) for Windows (Version 23.0. Armonk, NY: IBM Corp.)

confidence interval (CI) (30.1 – 32.3) years. As regards the educational level, 40.7% were master's degree students, 31.9% were master's degree holders, 7.7% were PhD students, 12.1% were PhD holders, and 6.6% did not report their educational level. Regarding employment, 36.3% were university staff members only, 7.7% had a private dental practice only, 4.4% worked at a hospital, 1.1% worked at the National Research Center, 5.5% had hospital and private work, 25.3% had university and private work, and 1.1% had university and hospital work.

### III. Questions Regarding the New Classification of Periodontal Disease

All participants had knowledge about the new classification of periodontal disease. However, only 24.2% of participants applied it in their clinical practice. The clarity of the new classification had been viewed as very poor/poor by 34% of participants while it was considered very good/excellent by 29.7% of the participating dentists (Table 1).

About 55% of participants agreed on the addition of "clinical health on a reduced periodontium" item to the new classification. Defining a patient as a periodontitis case was agreed/strongly agreed upon by 33% of participants and opposed by 26.4% of participants. The staging and grading classification for periodontitis was

considered very good/excellent by 40.7% of participants and considered very poor/poor by 27.5% of them. Replacing "aggressive periodontitis" with a higher grading on a periodontitis scale was strongly/slightly disagreed upon by 47.3% of participants, while 30.8% slightly/strongly agreed upon this replacement. The applicability of staging and grading of periodontitis in day to day dental practice was strongly disagreed upon by 14.3% of participants, while 7.7% strongly agreed on its applicability (Table 1).

The clarity of covering systemic diseases affecting the periodontium in the new classification was slightly/strongly agreed upon by 35.2% of participants while 26.4% strongly/slightly disagreed upon it. Replacing Miller's classification of gingival recession with a new classification addressing mucogingival conditions was slightly/strongly agreed upon by 38.5% of participants, while 19.8% strongly/slightly disagreed upon this replacement (Table 1).

The usefulness of implant health and disease incorporation into the new classification was disagreed upon. About 36.3% of participants slightly/strongly agreed that the prognosis and treatment planning of periodontal cases will differ in relation to the new classification while 33% strongly/slightly disagreed with that assumption (Table 1).

**Table 1.** Frequencies (n) and percentages (%) of responses to questions about the new classification for periodontal diseases

Question	n	%
<b>1) Clarity of the new classification:</b>		
a. Very poor	5/91	12
b. Poor	20/91	22
c. Fair	35/91	38.5
d. Very good	17/91	18.7
e. Excellent	10/91	11
f. Don't know	4/91	4.4
<b>2) Have you applied the new classification at your clinic?</b>		
a. Yes	22/91	24.2
b. No	59/91	64.8
c. Don't know/No answer	10/91	11
<b>3) What do you think of adding this item to the new classification: "clinical health on a reduced periodontium?"</b>		
a. Strongly disagree	5/91	12

b. Slightly disagree	13/91	14.3
c. Neutral	18/91	19.8
d. Slightly agree	19/91	20.9
e. Strongly agree	31/91	34.1
f. Don't know	5/91	5.5
<b>4) What is your opinion of the definition of a periodontitis case?</b>		
a. Strongly disagree	9/91	9.9
b. Slightly disagree	15/91	16.5
c. Neutral	30/91	33
d. Slightly agree	14/91	15.4
e. Strongly agree	16/91	17.6
f. Don't know	7/91	7.7
<b>5) How would you rate the staging and grading process in periodontitis?</b>		
a. Very poor	8/91	8.8
b. Poor	17/91	18.7
c. Fair	24/91	26.4
d. Very good	21/91	23.1
e. Excellent	16/91	17.6
f. Don't know	5/91	5.5
<b>6) What is your opinion of replacing "aggressive periodontitis" with a higher stage and grade on a periodontitis scale?</b>		
a. Strongly disagree	25/91	27.5
b. Slightly disagree	18/91	19.8
c. Neutral	15/91	16.5
d. Slightly agree	18/91	19.8
e. Strongly agree	10/91	11
f. Don't know	5/91	5.5
<b>7) Is the staging and grading of periodontitis applicable in the day to day dental clinic?</b>		
a. Strongly disagree	13/91	14.3
b. Slightly disagree	20/91	22
c. Neutral	25/91	27.5
d. Slightly agree	21/91	23.1
e. Strongly agree	7/91	7.7
f. Don't know	5/91	5.5
<b>8) Are the systemic diseases affecting the periodontium (and vice versa) clearly covered in the new classification?</b>		
a. Strongly disagree	7/91	7.7
b. Slightly disagree	17/91	18.7
c. Neutral	27/91	29.7
d. Slightly agree	15/91	16.5
e. Strongly agree	17/91	18.7
f. Don't know	8/91	8.8
<b>9) What is your opinion of replacing Miller's classification of gingival recession with the new classification of Cairo et al. in addressing mucogingival conditions?</b>		
a. Strongly disagree	4/91	4.4
b. Slightly disagree	14/91	15.4
c. Neutral	23/91	25.3
d. Slightly agree	12/91	13.2
e. Strongly agree	23/91	25.3
f. Don't know	15/91	16.5

<b>10) Is the implant health and disease incorporation into the new classification useful?</b>		
a. Strongly disagree	6/91	6.6
b. Slightly disagree	10/91	11
c. Neutral	21/91	23.1
d. Slightly agree	19/91	20.9
e. Strongly agree	19/91	20.9
f. Don't know	16/91	17.6
<b>11) Do you think the prognosis and treatment planning of periodontal cases will differ in relation to the new classification?</b>		
a. Strongly disagree	11/91	12.1
b. Slightly disagree	19/91	20.9
c. Neutral	20/91	22
d. Slightly agree	19/91	20.9
e. Strongly agree	14/91	15.4
f. Don't know	8/91	8.8
<b>12) Is the new classification user-friendly for periodontists and general practitioners regarding their patients flow?</b>		
a. Strongly disagree	25/91	27.5
b. Slightly disagree	22/91	24.2
c. Neutral	18/91	19.8
d. Slightly agree	12/91	13.2
e. Strongly agree	4/91	4.4
f. Don't know	10/91	11
<b>13) How satisfied or dissatisfied are you with the overall new classification scheme?</b>		
a. Very dissatisfied	10/91	11
b. Dissatisfied	21/91	23.1
c. Neutral	24/91	26.4
d. Satisfied	18/91	19.8
e. Very satisfied	8/91	8.8
f. Don't know	10/91	11

Approximately half of the participants (51.7%) strongly/slightly disagreed that the new classification is user-friendly for both periodontists and general practitioners in terms of patient management, in comparison to 17.6% of participants who considered it user-friendly. Regarding overall satisfaction with the new classification, 34.1% of participants were dissatisfied/strongly dissatisfied with the new classification, 28.6% were satisfied/strongly satisfied, 26.4% were neutral, and 11% did not know (Figure 4).

#### IV. Significant Predictors of the New Classification Application

A binary logistic regression model was constructed using application of the new

classification (yes/no) as the dependent variable, while age, gender, degree, setting, and clarity of the new classification were the independent variables. None of the independent variables were found to be statistically significant predictors for applying or not applying the new classification.

#### V. Significant Predictors of Satisfaction with the New Classification

An ordinal regression model was constructed using satisfaction with the new classification (strongly dissatisfied, dissatisfied, neutral, satisfied, strongly satisfied, do not know) as the dependent variable, while age, gender, degree, setting, clarity, and application of the new classification were the independent variables. The results showed that clarity of

the new classification was the only significant predictor for satisfaction with the new classification. An increase in clarity scores was directly associated with an increase in satisfaction scores (odds ratio =

5.521, 95% CI = 2.198 – 8.844, P-value = 0.001). An increase of one clarity score (e.g. from very poor to poor) is associated with a 5.5-fold increase in satisfaction scores.

**Figure 4.** Pie chart representing overall satisfaction with the new classification for periodontal diseases among the study participants



## **Discussion**

Periodontitis is a multifactorial inflammatory disease, that represents a major worldwide problem due to its high prevalence and its impact on patients' quality of life. Therefore, different classifications have been continuously proposed over the past decades to help reach a correct diagnosis.<sup>1,2,8</sup> With the recent understanding of periodontal disease pathogenesis and bacterial etiology as well as peri-implant diseases and conditions, a new classification for periodontal diseases and conditions was proposed in the "2017 World Workshop on the Classification Periodontal and Peri-implant Diseases and Conditions." The new classification was guided by recent research and robust scientific evidence, but whenever faced with a lack of sufficient data, lower level evidence and expert opinion were inevitable.<sup>8</sup>

In this regard, our survey aimed to assess awareness and clinical application of the new classification among periodontists in different academic institutes and clinical practices. To the best of our knowledge, this is the first report in literature addressing this topic. The questionnaire was distributed to

188 dentists and was completed by only 91, giving a response rate of 48.4%. This might be due to a lack of motivation, a busy academic life making it difficult to complete volunteer tasks, and perhaps also a lack of clinical application of the new classification by many periodontists.

In an attempt to probe any confounders that might have affected the awareness level of dental practitioners, the authors investigated age, sex, academic degree, years of clinical experience, and affiliation of the participants.<sup>9</sup> However, all were insignificant predictors for the application of the new classification. This can be explained by the academic background of all participants, which allows exposure to any recent updates in the field.

All participants had heard about the new classification in detail. However, only 24% of them applied it. This could be attributed to the initial resistance to change if the question about clarity was not raised. However, there was a relatively high negative response of 34% to the question addressing the clarity of the new classification.



Clinical health on a reduced periodontium was one of the newly added definitions, which was agreed upon by 55% of participants, as it clarifies the idea of having a stable periodontium with no active disease or any signs of inflammation, which was previously problematic as to whether categorization should be under health or disease.<sup>10</sup> Such a distinction was crucial to differentiate between the need for maintenance of successfully treated patients and the comprehensive treatment required for those with active periodontitis.<sup>3,8</sup>

Despite the high support of the idea of “clinical health on a reduced periodontium,” the definition of a periodontitis case did not gain similar approval, where only 33% of participants approved. Our results reflect that there might be some difficulty in understanding the significance of using different values for clinical attachment loss (CAL) between proximal and buccal surfaces, as well as a 3 mm buccal pocket with CAL being a necessity for case definition, according to the new classification.<sup>11,12</sup>

Although 40.7% of participants rated “staging and grading” as an excellent/very good addition to the diagnosis of periodontitis, only 7.7% strongly agreed on clinically implementing its use. This might be attributed to the fact that such a time-consuming method of diagnosis is unlikely to be applied in institutions receiving mass numbers of patients. For example, the outpatient clinic of the Faculty of Oral and Dental Medicine at Cairo University may receive approximately 1,000 patients per day. This is also strengthened by the outcome of the question as to whether the new classification is user friendly or not, where 57.7% felt that it was not user friendly. Several participants found the “staging and grading” system too complicated to be used in clinical practice, and even more complicated for general practitioners. Furthermore, the possible need for several diagnostic aids besides clinical and radiographic examination, such as high-sensitivity C-reactive protein (hs-CRP), might not be feasible with lack of medical insurance and low socioeconomic standards. This is of course in addition to

their concern about the difficulty in explaining the condition to patients taking into consideration the challenge that might arise at using such phrases as “used only in case of cancer” for non-cancer patients.

Replacing aggressive periodontitis with a grading system was disagreed upon by almost half of the participants, in addition to the 22% who were not sure about its value. This raises a crucial need for further investigation in this regard. One notion adopted against the term “aggressive periodontitis” was based on the impossible accurate estimation of “rapid” progression of periodontal disease. The first claim was the inability to determine the onset of destruction without former clinical records and radiographs, and the possible occurrence of both aggressive and chronic forms of the disease at a young age. Moreover, investigating possible familial tendency is unreliable due to the possibility of undiagnosed patients or unclear reasons for tooth loss. Another claim was the inconsistency in data regarding the amounts of deposits and the severity of destruction. Hence, it was concluded that diagnosing aggressive periodontitis patients was based on a subjective interpretation of cases.<sup>4</sup> Although the fundamental criticism of the term “aggressive periodontitis” is based on the lack of objective criteria to determine the rate of disease progression, the new grading system of periodontitis is classified into grades A, B, and C reflecting slow, moderate, and rapid rates of progression respectively.<sup>12</sup>

Moreover, the current insufficient pathophysiological distinction between aggressive and chronic periodontitis does not undermine the clear clinical distinction and unique phenotype based on rate of progression, age of onset, distribution, clinical presentation, and response to treatment, which is not based solely on severity. The argument that both aggressive and chronic periodontitis both have a common end result, and therefore can be considered as a single disease, counts as an invalidation to the whole periodontal classification system because it is true for all types of periodontitis; all forms of the

disease can end in tooth loss if left untreated.<sup>13</sup>

Despite the possible overlap of certain cases between both chronic and aggressive forms of periodontitis, many participants objected to totally omitting “aggressive periodontitis” and losing the opportunity to identify its early manifestations. Instead, they suggested adding another category for borderline cases and going for further larger scale studies in this regard, in order to provide reliable evidence rather than discarding the insufficient data. Given the fact that this form of periodontitis is common in the Middle East and Africa, defining aggressive periodontitis as an orphan disease based on its prevalence in the United States does not reflect its actual load.<sup>13</sup>

The suggestion that socioeconomic factors might be related to disease susceptibility is true for almost any disease where a genotype needs certain environmental factors to be expressed, as is the case with diabetes mellitus type II for example.<sup>13</sup> Identifying those environmental factors can help in the development of preventive programs for such diseases by targeting and controlling specific environmental risk factors. A question was also raised by the participants regarding the impact of each grade on the treatment plan. In other words, would the treatment of grades B and C periodontitis require antibiotics as was the case with aggressive periodontitis?

In the new classification, systemic disorders fall under three main categories; the first includes those having a major impact on the loss of periodontal tissue by influencing periodontal inflammation, which is further subdivided into genetic conditions and acquired immunodeficiency and inflammatory diseases; the second includes systemic disorders that influence the pathogenesis of periodontal diseases, and third are the systemic disorders that can result in loss of periodontal tissue independent of periodontitis.<sup>14</sup> In the present study, the assessment of the clarity of systemic diseases affecting the periodontium was debatable; approximately

25% of participants disagreed, about 35% agreed, and 40% were neutral or did not know. This might be explained by the fact that the new classification offers a detailed categorization of disorders and conditions based on underlying mechanisms which is essential at an academic level, but it might need a bit of zoom out to offer a clearer understanding for clinical application. Moreover, such a categorization does not take into consideration the fact that periodontal inflammation and the pathogenesis of periodontal disease overlap in certain conditions. Being an inflammatory disease, any condition that affects the pathogenesis of periodontal disease will definitely have an impact on inflammation. Furthermore, the new classification provides a detailed discussion on the effect of systemic conditions on the periodontium and completely ignores periodontal disease as a risk for different systemic conditions such as cardiovascular diseases and pregnancy, despite the presence of high evidence in that regard.<sup>15-17</sup>

A new classification of gingival biotype and gingival recession was also proposed taking into consideration recession type, recession depth, gingival thickness, keratinized tissue width, and the cemento-enamel junction (CEJ), thus, overcoming the limitations of former classifications.<sup>18,19</sup> Replacing the widely used Miller’s classification with a new classification received wide approval, where 38.5% approved in comparison to 19.8% who disapproved. This may be due to the appeal of having such a comprehensive diagnostic approach of the dento-gingival unit, which involves all the possible factors that might impact the outcome when attempting treatment of gingival recession.

The addition of implant health and disease to the new classification gained the approval of almost half of the participants. This can be explained by the rising need to make a distinction between peri-implant health and peri-implantitis and peri-implant mucositis based on objective criteria to help accurately diagnose and treat various implant related diseases and conditions.<sup>20-24</sup>

The response of participants was controversial regarding the impact of the new classification on the prognosis and treatment of periodontal diseases and conditions. Thirty-six and three tenths percent of periodontists agreed that the prognosis and treatment of cases will differ under the umbrella of the new classification, 33% disagreed, while 30% were neutral or did not know. This might reflect the subjective interpretation of several aspects of the new classification, which may need amendments to clear the gray areas that might adversely affect the patient. For instance, the prescription of antibiotics for certain categories which had an established evidence of positive impact on the treatment outcome, remain unclear under the umbrella of the new classification.<sup>25,26</sup>

The clarity of the new classification was the only significant predictor for the overall satisfaction with the classification, where 34.1% were dissatisfied, 28.6% were satisfied, 26.4% were neutral, and 11% did not know. An increase of one clarity score was associated with a 5.5-fold increase in the satisfaction score. Our findings are generally indicative of certain inadequacies in the new classification and a gap between theory and practice due to a lack of clarity of certain aspects of the classification as perceived by periodontists with an academic background in Egypt.

One of the limitations of the present study is the fact that all participants in the survey were Egyptian, and all had an academic background with continuous access to updates unlike general practitioners. Another limitation is the relatively small sample size, and the need for further large-scale studies with participants from diverse backgrounds. The present study also has the inherent weakness of survey studies using questionnaires in which some responses are always lost.

Our study sheds light on some important questions that need to be addressed in the near future including whether all aspects of the new classification system are applicable in developing countries and megacities receiving a mass number of patients, and whether it is more

rational to further explore aggressive periodontitis using large scale studies in countries with high prevalence before its omission as a distinct disease entity.

The goal behind the classification of periodontal diseases and conditions has always been to provide a framework to help develop effective treatments to such a complex group of conditions. Ever since the introduction of the classification systems, there have been inadequacies and inconsistencies.<sup>2</sup> Despite the huge effort exerted by eminent world experts and the consensus reached, further revisions to the new classification are needed to facilitate its application in order to confer the greatest benefit to the patient.

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