The effect of educational level of females on their dental caries experience

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Abstract:

This study was designed to evaluate the influence of education levels of females on their dental caries experience.

Two hundred sixty seven (267) single females were selected randomly in this study, with an age of 18-39 years old. The educational level were classified to five code (illiterate, primary, intermediate, secondary, college and postgraduate). Caries experience were diagnosed and recorded according to the criteria suggested by WHO (1997). The decayed, missing and filled surface (DMFS) index was used to assess the caries experience.

The result show that the females in the high level of education have slightly lower DMFS seen than other levels of education with no significant differences between them. The study indicated that the mean decay surface in low education level have higher mean significantly than the high education level. For the missing surface, the result show that the high education level (college degree) has lower mean than the other levels with no significant differences between them while for the filled surface, the study demonstrated very high significant difference between low and high education levels.

Keywords:

Dental caries, decay surfaces, filling surfaces, missing surfaces, education level, female.

Introduction

Dental caries is an infectious microbiological disease that results in localized dissolution and destruction of the calcified tissue of the teeth, the usually progress as a series of exacerbation and remission [1,2]. It is a slowly progressive, it begins with acid demineralization of the outer enamel surface and if not arrested or treated, enamel dissolution continues into dentin and pulp, causing cavitation and loss of enamel substance [3,4].

Epidemiological studies clearly showed a discrepancy in distribution and severity of dental caries not only among countries but also among population in the same countries [5-7].

Many studies indicates that education level play a major role in the process of social stratification, higher level of education usually means higher socio-economic status[8-11].

According to Beal [12] two important factors are fundamental in understanding the relationship between social status and health. The first is income, the other is education, most of

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those in higher social classes have a college education (Bachelor degree or higher form) at the other end of the scale majority of subjects in low social classes left full time education at a minimum school leaving age and went straight into a job.

Many studies reported that the following social factors affect the dental caries prevalence, severity and type of treatment (socioeconomic level, education, income and occupation)[13-17].

Parents education and socioeconomic of the family were found to be closest correlated to the caries situation of children. In the study carried out among kindergarten's children in the city of Baghdad, they reported that children of parents at high level of education had significantly lower caries experience than those of parents at lower education levels[18]. This was in accordance with other studies carried out in Iraq [19].

In the contrary, there were other studies reported that parents with a high level of education have higher caries experience among their children [20,21].

Almost all studies in Iraq and many studies in the world carried out to evaluate the effect of education level or social factor on dental health was carried out in children and teenage. There was no study evaluated the effect of education level on dental caries experience in adult in Iraq.

So the purpose of the present study was to determine the influence of the different levels of education on dental caries experience in group of females in Iraq.

Materials and methods:

Two hundred sixty seven (267) single females were selected randomly in this study, with an age range of 18-39 years old.

All information was recorded on special form include, name, age, educational level. The educational level were classified as follow:

Code (1): illiterate
Code (2): primary school
Code (3): intermediate school
Code (4): secondary school
Code (5): college and post graduate

The examination was performed in a suitable room under standardized condition following the recommendation of WHO (1997) [22]. Subjects were examined by seating on a portable chair fixed with an adjustable headrest.

Caries experience have diagnosed and recorded according to the criteria suggested by WHO (1997) [22]. The examination of dental caries was carried out using plane mouth mirror and sharp probe. The decayed, missing and filled surface (DMFS) index was used to assess the decayed, missing and filled surfaces. Each decayed surface of tooth takes one point, also each filled surface of tooth takes one point, while for missing tooth, the tooth takes four points as realistic average for missing surfaces [23]. The D, M and F surfaces were added to obtain and calculate the DMFS component for the females.

The statistical analyses of the data include: classification of data and calculation of the mean and standard error of DMS and its components. One way analysis of variance (ANOVA) and Duncan's multiple range test have been used to compare the differences among the different educational levels.

Result:

Table (1) illustrate the distribution of the total sample of females by their education levels.

Table (1): Distribution of the sample by educational level.

Educational level	Number	Percent
Illiterate	16	6.00
Primary	81	30.33
Intermediate	68	25.47
Secondary	59	22.10
College	43	16.10
Total	267	100

Table (2) show the mean DMFS score by educations level. The study indicated that the females in the high level of education have slightly lower DMFS score than the other levels of education. However, there was no significant difference between educational level.

Table (2): Mean of DMFS (± SE) by educations level.

Educational level	Mean*	±SE
Illiterate	19.37 A	4.64
Primary	18.33 A	1.15
Intermediate	20.45 A	1.24
Secondary	19.15 A	1.21
College	18.16 A	1.71
Total	19.09 A	0.63

* Mean with different letters are statistically significant at $p< 0.05$

Tables (3,4,5) illustrate the distribution of the mean component of DMFS (decayed, missing and filled surfaces) score according to the education levels. Table (3) show the mean decayed surface, the result indicated that the mean decayed surfaces in low education level (illiterate and primary schooling) have high mean than the other high education levels with high significant difference between them.

Table (3): Mean of DS (± SE) by educational level.

Educational level	Mean*	±SE
Illiterate	13.19 A	2.29
Primary	11.66 A	0.60
Intermediate	8.47 B	0.69
Secondary	7.89 B	0.68
College	7.44 B	0.69
Total	9.44 B	0.36

* Mean with different letters are statistically significant at $p< .001$

Table (4) demonstrate the mean missing surface, the result show that the high education level (college degree) has lower mean than the other levels with no significant differences between them.

Table (4): Mean of MS (± SE) by educational level.

Educational level	Mean*	±SE
Illiterate	5.75 A	2.66
Primary	5.72 A	0.95
Intermediate	6.88 A	1.01
Secondary	5.96 A	0.90
College	3.63 A	.816
Total	5.72 A	0.49

* Mean with different letters are statistically significant at $p< 0.05$

Table (5) show the mean of filled surface, the result indicated very high significant difference between low education and high education levels.

Table (5): Mean of FS (± SE) by educational level

Educational level	Mean*	±SE
Illiterate	0.43 A	0.24
Primary	0.95 A	0.23
Intermediate	5.10 B	0.64
Secondary	5.30 B	0.72
College	7.09 B	0.98
Total	3.92	0.32

* Mean with different letters are statistically significant at $p<.001$

Discussion:

The study indicated that about three quarter of the sample are from primary to secondary school, and every one of these level consider about 25% of the sample. While the illiterate females are only 6% and the college education females were 16% of the sample.

Caries experience was measured by the DMFS index, a valid simple and reproducible index used for the assessment of the past caries experience. Its components (DS, MS, FS) could be evaluated separately [24].

The result indicated that there was no significant difference in mean DMFS among the different education levels. This finding was disagree with many studies who found that the people from the high level of educational had significantly lower caries experience than those of lower educational level [18,19].

According to the DMFS components, for the total sample, the DS reported the higher mean (9.44) followed by MS (5.72) and the last one is FS (3.92). the ratio of the three components to the total DMFS were (49.5%, 30%, 20.5%) respectively.

The mean decay components was very high (13.18) in illiterate education group and decrease with increasing level of education to reach (7.53) in college educated group. There were very high significant difference ($p< .001$)between

the illiterate and primary group and the other three groups. This finding is in agreement with other studies [19,25].

The ratio of decay components to the total DMFS were found to be more than 63% for the low level education (illiterate and primary), while recorded about 41% in the other three groups.

Not only coronal caries are related to education level, also root-surfaces caries related [26-28].z

The results demonstrate that the mean filling surface were to be significantly higher among the females with higher education level than those with lower reduction levels. This finding was in accordance with other studies [19,28-31].

The mean filling was (7.09) in college group, while only (0.43) and (0.95) for illiterate and primary level education respectively. These finding could be attributed to the favar effects of education level on their knowledge about the impact of healthy teeth which in turn affect their behaviors on the importance of dental treatment also may be attributed to the reason of more social awareness of the importance of utilizing the dental services.

The result of the study indicate that the mean of missing surfaces in college level were less than other education levels with no significant difference between them. This finding is not in agreement with other studies, that they found the mean missing teeth were significantly higher among the lower social class than those of higher social class [20,25].

Summarizing the findings of the study indicated that the females of lower education level are more likely to have decayed surfaces with fewer filled surface compared with the higher education groups.

That would be expected the females with high education level have higher dental health knowledge that effect the pattern of behavior to treat the decay tooth specially in group that have college and post graduate degree.

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