



ROYAL COLLEGE OF  
PHYSICIANS AND  
SURGEONS OF GLASGOW



# Intercollegiate Specialty Fellowship Examination

## Part A

### Paediatric Dentistry

### Critical Appraisal

**Note: Parts of the sections within the original article are not relevant to this examination and have been redacted.**

**Please note that the sample answer key provided has model answers and they are not exclusive. Other options could be considered as correct answers.**

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# Intercollegiate Specialty Fellowship Examination in Paediatric Dentistry

## Critical Appraisal

### Extract 1 - 38 marks

Grindefjord M, Persson J, Jansson L, Tsilingaridis G. 2019. Dental treatment and caries prevention preceding treatment under general anaesthesia in healthy children and adolescents: a retrospective cohort study. *European Archives of Paediatric Dentistry*. Apr;19(2):99-105. doi: 10.1007/s40368-018-0332-1.

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1.

- a) What type of research is reported and what is the level of evidence it produces? (2 marks)
- b) Give three advantages and three disadvantages of the authors using this study design (6 marks)

**(8 marks total)**

a)

- Observational **(1 mark)**
- Level III **(1 mark)**

b)

**Any 3 from each section:**

- Advantages:
  - Inexpensive **(1 mark)**
  - Less time-consuming - the data already exists **(1 mark)**
  - Avoided selection bias **(1 mark)**
  - Allowed the analysis of multiple outcomes **(1 mark)**
- Disadvantages:
  - Reliant on retrospective records **(1 mark)**
  - Many different clinicians will have been involved in patient care **(1 mark)**
  - Authors needed to search two different databases **(1 mark)**
  - Confounders may not be recorded **(1 mark)**
  - May lead to information bias or misclassification bias **(1 mark)**

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2. List two appropriate exclusion criteria for this study. **(2 marks)**

- Medical co-morbidities **(1 mark)**
- Listed for general anaesthetic for any other reason other than caries management **(1 mark)**

3. Define the Mann-Whitney U test (3 marks) and explain why it was appropriate to use in this instance. (1 mark)

**(4 marks total)**

A non-parametric test **(1 mark)** to compare differences between two independent groups **(1 mark)** where the dependent variable is either continuous or ordinal **(1 mark)**. Study data fitted these criteria **(1 mark)**.

4. Was the Chi squared test appropriate to compare the socio-economic backgrounds of the GA group and control group? Explain your answer. **(2 marks)**

- Yes, it is **(1 mark)**
- It is used to compare the distribution of a categorical variable between two samples **(1 mark)**

5. Explain the findings regarding overall numbers of dental visits in table 1. **(2 marks)**

- Patients in the treatment group visited the dentist significantly more often **(1 mark)**
- Patients in the treatment group saw significantly more dentists than those in the control group **(1 mark)**

6. Summarise the different restoration experience reported in table 2. **(3 marks)**

- In the 3-6-year-old group, the treatment group had significantly more restorations **(1 mark)**
- In the 7-12-year-old group the treatment group had significantly more restorations **(1 mark)**
- In the 13-18-year-old group, the control group had significantly more restorations **(1 mark)**

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7. Interpret the data presented in tables 2 and 3 in relation to visits for behaviour management. **(3 marks)**

- 46/71 (65%) of the treatment group had no visits for behaviour management **(1 mark)**
- Children age 7-12 in the treatment group had appointments for behaviour management most frequently **(1 mark)**
- 4/213 (2%) children in the control group had visits for behaviour management **(1 mark)**

8.

- a) Interpret the results shown in table 4 regarding children in the treatment group (1 mark)
- b) What conclusion can be drawn from these results in relation to this group of children? (2 marks)

**(3 marks total)**

- a) A high proportion - 34/71 (48%) - of children in the treatment group did not receive any preventive treatment **(1 mark)**
- b) In the absence of modification of caries risk factors, caries risk for children in this group was likely to remain high **(1 mark)** and as such the need for future treatment would be high **(1 mark)**

9. Interpret the results shown in table 5. **(4 marks)**

- Presence of a higher number of carious teeth was the factor which was most likely to result in children undergoing treatment under general anaesthetic **(1 mark)**
- This result was the only one at a highly statistically significant level **(1 mark)**
- Significant greater tendency for treatment under GA if patient had received more behaviour management **(1 mark)** and preventive treatment **(1 mark)**

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10. What are the indications for using a logistic regression analysis?  
(2 marks)

When looking to describe data and to explain the relationship between one dependent binary variable (1 mark) and one or more nominal, ordinal, interval or ratio-level independent variable (1 mark).

11. What are two limitations of this study? (2 marks)

- Small number in the treatment group (1 mark)
- Retrospective design (1 mark)

12. Explain how the results presented could be used to plan services.  
(3 marks)

- The results would support implementation of a pre-GA prevention pathway (1 mark)
- There is also evidence that a behaviour management pathway would be useful (1 mark)
- Audit of any service improvements should be completed to assess impact on patient care (1 mark)

**Total Marks for Extract 1 = 38**