**Appendix 1: Checklist for Reporting Results of Internet E-Surveys (CHERRIES)**

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| **Item category** | **Checklist item** | **Description** |
| Design | Study design | 120 invitations were sent to **two groups**: Group one (G1) were the dental interns at College of Dentistry, King Khalid University (n= 60), and Group two (G2) consisted of general dental practitioners (GDPs) within the region of Asir, Saudi Arabia (n= 60) |
| Ethics | Ethics approval | **Yes** Approval No. IRB/KKUCOD/ETH/2020-21/017 |
| Informed consent | **First page:**   * ‘Participants’ information sheet (PIS)’, was the first page in the online survey. It includes all the information that participants need to know in the regards of the research such as the research title, aim and objectives and researchers’ contact details. * ‘Consent form’. It was designed to include three **compulsory questions** with ‘Yes’ or ‘No’ options. |
| Data protection | Guaranteed by the principal researcher’s personal login to the SurveyMonkey account with username and password |
| Development and pre-testing | Development and pre-testing | The survey questions were constructed by the research team (which contains an academician endodontist consultant and two genera dentists with 10 years’ experience) and pasted into the SurveyMonkey area by the principal researcher. Procedure and items of the survey were piloted, adapted and approved by the research team. |
| Recruitment process | Open vs closed survey | Open survey |
| Contact mode | E mails |
| Advertising the survey | Invitations E mails sent individually to dental interns via the Dental Internship Committee at KKUCOD for G1, and General Directorate of Health Affairs, Asir Region for G2. |
| Survey administration | Web/email | SurveyMonkey website |
| Context | SurveyMonkey is a website for constructing, storing and analyzing online surveys. The administrator can design the length, the kind of information provided and the type of questions & answers. |
| Mandatory/voluntary | Voluntary |
| Incentives | No incentives were offered |
| Time/date | **Opened:** 30th October 2020  **Closed:** 30th November 2020  Reminders were sent weekly after the survey was launched. |
| Item randomization | No randomization of questions was performed. |
| Adaptive questioning | **Not applicable to this survey** |
| Number of items | **Page 1: information sheet and 3** questions for consent form**.**  **Page 2: 10** general information questions.  **Page 3: 6** clinical vignettes questions. |
| Number of screens (pages) | **4 screens (pages)** |
| Completeness check | With incomplete answers, an alert like (an answer is required) was required before the respondent could continue. However, the survey did not contain alternative answers such as (don’t know) |
| Review step | Respondents had the option to switch between pages by using (go back to) and (proceed) buttons, and to change answers. |
| Response rates | Unique site visitor | Only respondents or visitors completing at least the first page (which is the consent form) and proceeding to the next page were counted. For this, calculation of views or respondents’ rates was not possible. |
| View rate | Not applicable as the calculation of unique site visitor was not possible in this survey. |
| Participation rate | Not applicable as the calculation of participation rate was not possible in this survey because of participants could not proceed if they did not agree to the consent form (first page). |
| Completion rate | A total of 88 responses out of 120 were received for the two groups, with 50 of 60 dental interns in G1 (83.3%) and 38 of 60 general dental practitioners in G2 (63.33%) |
| Preventing multiple entries from same individual | Cookies used | No cookies were used to assign a unique participant identifier to each participant’s device. As personal information was not collected, we could not prevent duplicates entries. |
| IP check | IP address of the participants’ device was not collected nor used to identify potential duplicate entries from the same device. |
| Log file analysis | Log file for identification of multiple entries were not used |
| Registration | **Not required** (open survey) |
| Analysis | Handling of incomplete questionnaires | respondents’ answers were included only if they completed the full questionnaire. Respondents’ who dropped out before completing, their answers were not included in the analysis. |
| Questionnaires with atypical timestamp | The average time to answer the questions was timed approximately 10 minutes, but there was no minimal time required. |
| Statistical correction | **No statistical correction was needed** |

**Appendix 2: The questionnaire used to assess the prescription of antibiotics for endodontic treatment.**

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| **No.** | **Question** | **Given answers** | **Correct answers with explanation** |
| **General questions (1 to 10)** | | |  |
| 1 | Please write the dental school you qualified from (GDP) or that you expect to qualify from (dental intern) | Open question |  |
| 2 | Occupation? | A- Intern dentist  B- Qualified general dentist |  |
| 3 | if you are a qualified dentist; the number of years of clinical experience after the qualification: | A- Less than 1 year  B- 1-5 years  C- 5-10 years  D- more than 10 years |  |
| 4 | The number of patients that you see per full working day is: | A- 0-5  B- 5-10  C- 10-20  D- 20-30  E- more than 40 |  |
| 5 | The number of endodontic emergency patients that you see per full working day is: | A- 0-3  B- 3-6  C- 6-9  D- 9-12  E- 12-15  F- more than 15 |  |
| 6 | How frequently do you prescribe antibiotics for endodontic problems? | A- to a limited selected number of patients  B- to most patients  C- to all patients  D- never | ‘To a limited number of patients. Not all endodontic conditions require antibiotics. In fact, the majority of endodontic conditions can be treated with local measures such as extraction, pulpotomy, pulpectomy, incision or excision and drainage of swelling. Therefore, few cases in endodontic therapy require antibiotics. |
| 7 | In what endodontic conditions would you prescribe antibiotics? You can select one or multiple answers to this question | A- symptomatic reversible pulpitis  B- symptomatic irreversible pulpitis  C- Symptomatic apical periodontitis  D- Chronic apical abscess  E- Acute apical abscess  F- Systemic complications (e.g., fever, malaise)  G- Other (please specify) open-ended questions. | ‘Systemic complications. Systemic involvement is an indication for antibiotics, such as fever, malaise). However, the identification of systemic involvement should be objective and not subjective. The option ‘other’, if selected, could include immune-compromised patients, bacterial infection spreading to vital organs, compromise of airway, inability to achieve drainage, etc. |
| 8 | Are you aware of any available guidelines for prescribing antibiotics for endodontic conditions? | A- Yes  B- No  Open space for participants who answered yes to mention the name of the guidelines |  |
| 9 | Have you read these guidelines? | A- Yes  B- No |  |
| 10 | Are you aware of the consequences of the over-use of antibiotics? | A- Yes  B- No  Open space for participants who answered yes to mention the possible consequences of over-use. | ‘Yes’. There are local and global noteworthy effects of antibiotics over-use. Globally, antibiotic over-use influences the development of resistance bacterial species, deficiency of available antibiotics to treat serious bacterial causes illness, lack of new novel new antibiotics in the medical profession to treat resistance bacterial species, cost to health care organizations. Local effects of antibiotic over-use could be antibiotics related side-effects, drugs interactions, development of opportunistic infection, cost to the patients. |
| **Clinical vignettes (11 to 16)** | | |  |
| 11 | "A 23-year-old female patient complains of severe throbbing localized dental pain related to UR 4. She feels feverish since yesterday. Clinical examination reveals no swelling nor sinus tract. However, UR 4 buccal sulcus is tender on palpation, and the tooth is tender to percussion. UR 4 is negative to cold and electric pulp testing. Radiographic examination of UR 4 reveals a small apical radiolucency. The treatment plan was to carry root canal treatment on UR 4, which you started today.  Select one answer that you would now generally prescribe/advise: | A- antibiotic indicated  B- antibiotic not indicated  Open space for participants to explain their answers | ‘Antibiotics not indicated’  **Explanation:** Necrotic pulps associated with symptomatic apical periodontitis without systemic complications do not require antibiotics. Local measures such as root canal treatment, which was indicated in the scenario that the clinician had started treatment today, is sufficient to resolve the endodontic condition. Although the patient is feeling ‘feverish’ before the treatment, antibiotics are not indicated since it was subjective measure of possible systemic complication of the infection. Furthermore, no other signs of systemic involvement were present. The word ‘feverish’ was included to test the participants’ objective assessment of systemic complications. However, the patient might be advised to use analgesic post- operatively, if required such as acetaminophen (Paracetamol) or non-steroidal-anti- inflammatory-drugs (NSAID) such as ibuprofen. |
| 12 | A 35-year-old female patient could not sleep for three nights because of a painful upper right tooth that presents with dull constant severe generalized pain on the upper right side. UR 6 was previously root-filled 9 years ago. UR 6 is grossly carious and is tender to touch. It is also mobile grade II. Radiographic examination indicates a root filling with voids, and the filling is short of the radiographic apex by 5mm with a periapical radiolucency at the palatal root. She wants to save the tooth and to have root canal re-treatment. However, the tooth is extremely painful, even to a light touch.  Select one answer that you would now generally prescribe/advise: | A- antibiotic indicated  B- antibiotic not indicated  Open space for participants to explain their answers | ‘Antibiotic not indicated’  **Explanation:** Symptomatic apical periodontitis as explained above, requires no antibiotics since there is no systemic complications / involvement. Furthermore, previously root treated teeth per se requires no antibiotics. Some clinicians mistakenly prescribe antibiotics for cases with failed root canal treatment associated with symptoms regardless of whether systemic involvement is present or absent. This clinical scenario aimed to investigate this attitude. Ideally, local treatment such as initiation of root canal re-treatment would have been sufficient to subside the endodontic condition. As discussed previously, analgesic could be advised post-operatively to control pain. |
| 13 | A 58-year-old male patient attends your dental clinic for the first time for a check-up. On examination, LR 7 and LR 6 have large leaking amalgam restorations. However, radiographic examination reveals large apical lesions on both teeth. You have explained to the patient all of the possible treatment options, and he wishes to have primary root canal treatment on LR7 and LR 6. The patient is fit and well. However, his medical history showed a history of rheumatic fever 28 years ago.  Select one answer that you would now generally prescribe / advise: | A- antibiotic indicated  B- antibiotic not indicated  Open space for participants to explain their answers | ‘Antibiotic not indicated’  **Explanation:** Symptomatic apical periodontitis as explained above, requires no antibiotics since there is no systemic complications / involvement. Furthermore, previously root treated teeth per se requires no antibiotics. Some clinicians mistakenly prescribe antibiotics for cases with failed root canal treatment associated with symptoms regardless of whether systemic involvement is present or absent. This clinical scenario aimed to investigate this attitude. Ideally, local treatment such as initiation of root canal re-treatment would have been sufficient to subside the endodontic condition. As discussed previously, analgesic could be advised post-operatively to control pain. |
| 14 | Your clinic colleague asked you for advice regarding a 27-year-old male patient who is fit and well. The patient has a sharp pain that is localized to LL 7. Radiographic examination indicates dental caries extending to the pulp chamber with no apical radiographic changes. Your colleague decided to perform a partial pulpotomy after obtaining consent from the patient. However, the tooth could not be anesthetized after attempting inferior dental nerve bock twice (2 x cartilage of 2% Lidocaine, with 1:100, 000 adrenaline), although the patient lips feel numb.  Select one answer that you would now generally prescribe / advise: | A- antibiotic indicated  B- antibiotic not indicated  Open space for participants to explain their answers | ‘Antibiotics not indicated’  **Explanation:** Neither reversible nor irreversible pulpitis require antibiotics. The clinical scenario indicates failure in achieving anesthesia to preform pulpotomy. Failure to achieve anesthesia does not indicate antibiotics. There are many causes for failed anesthesia. Ideally, the clinician should have a systematic approach to deal with such scenarios without the need for antibiotics, such as using alternative methods for achieving anesthesia. |
| 15 | A 62-year-old poorly controlled diabetic male patient presents with dull, mild discomfort localized to UR 3, which is not tender to palpation and is not mobile. There is pus discharge through a buccal sinus. The treatment plan is to carry out root canal treatment and to avoid extraction.  Select one answer that you would now generally prescribe / advise: | A- antibiotic indicated  B- antibiotic not indicated  Open space for participants to explain their answers | ‘Antibiotic not indicated’  **Explanation:** Antibiotics are not required for chronic apical abscess without systemic involvement. There is a patent sinus tract which provides continuous drainage; besides no systemic involvement is presented in the clinical scenario. Ideally, local measures such as initiation of primary root canal treatment should be established with possible patient advice to use post-operative analgesic as pain control. The fact that the patient is diabetic, and his diabetes status is poorly controlled, does not indicate antibiotic prescription per se to control the endodontic condition. It indicates the need for liaising with the patient medical physician to control his diabetic status. |
| 16 | A 25-year-old male patient complains of dull, localized pain and swelling associated with deep caries in LR 7. On examination, LR 7 is negative to cold and electric pulp testing. However, a periapical radiograph shows a widening of periodontal ligaments associated with LR 7. A diffused redness on the lingual mandibular wall related to LR 7 is noted, and it is spreading to the floor of the mouth.  Select one answer that you would now generally prescribe / advise: | A- antibiotic indicated  B- antibiotic not indicated  Open space for participants to explain their answers | ‘Antibiotic is indicated’  **Explanation:** Necrotic pulps and an acute apical abscess associated with swelling without systemic complications do not indicate antibiotic use. The ideal treatment would be local treatment such as extraction, pulpectomy, and / or drainage via incision or excision of the swelling. However, there are signs of infection spreading (risk of cellulitis) and associated risk of infection spread to dangerous regions, which can affect vital function such as breathing. Therefore, in this condition, antibiotics are indicated. The decision-making depends on the clinical presentation and the physical condition of the patient, which is judged by the clinician as to whether the patient requires hospital referral (SDCEP 2011). Nevertheless, if the condition does not require hospital referral, the patient should be reviewed within 24 hours to assess the condition. |