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Introduction
Clinical practice guidelines developed for safe patient care
Compliance with infection control guidelines in medicine is low
Impacts health & safety
Poor infection control implicated in disease outbreaks

Statement of the Problem
Limited studies of compliance with infection control guidelines exist in dentistry
Research agendas (ADHA & CDC)
• Assess KAP of dental workers with infection control guidelines
• Little is known

Purpose of the Study
To assess four research questions about KAP of USDH with “2003 CDC Infection Control Guidelines for Infection Control in Dental Healthcare Settings”
1. K=Knowledge
2. A=Attitudes
3. P=Practices (behaviors)
4. Relationships among KAP items

Methodology
Instrument
41-item questionnaire
• Demographics (10 questions)
• Part-1 (20 KAP statements related to CDC infection control guidelines + 2 open-ended)
  • 6-point Likert statements specific to the 2003 CDC infection control guidelines (1=“strongly disagree” and 6=“strongly agree”)
  • 7 of 20 items negatively worded & reverse scored
• Part-2 (8 behavior question + 1 open-ended)
  • 5-point Likert scale (1=never, 5="almost always" indicating >90% of the time)
    indicating percentage of time for various IC activities

6  Methodology

Sample Population & Sampling Methods

• ADHA master list service used
  • (INFOCUS Marketing, Inc.)
    • Minimum purchase 2,500 names with mailing address
  • INFOCUS created customized list
    • Met inclusion & exclusion criteria
    • Proportional stratified random sample drawn
    • Sampled dental hygienists from each state

7  Methodology

Survey Methods

• Mixed mode method
  • Initial contact via postal mail
  • Data collected online via SurveyMonkey™
  • Contained cost
  • Non-responders were tracked
  • Dillman’s “Tailored Design Method” used

8  Methodology

Data analyses

• Descriptive statistics
  • Means, frequencies, percentages on KAP items

• Correlations
  • Spearman’s Rho (<0.05 level)

• Qualitative (3 open-ended questions)

• Internal reliability
  • Not validated by Cronbach’s alpha

9  Results

Demographics

• 31% response rate (N=765 of 2500)
• 99% white females
• 88% over age 42
• 60% worked more than 25 hours/week
• 99% practiced for more than 10 years
• 70% one DDS practice

10 Results

Results-Part-1

K=Knowledge (4 questions)
- Familiarity (n=703, 86% agreed/strongly agreed)
- Accessibility (n=702, 77% agreed/strongly agreed)
- Based on sound scientific evidence (n=689, 82% agreed/strongly agreed)
- Existence of conflicting guidelines (n=665, 41% disagreed/strongly disagreed)

11 Results

Results-Part-1

A=Attitudes (14 questions)
- Confidence in ICG developer (n=700, 82% agreed/strongly agreed)
- Relevance to patients (n=699, 88% agreed/strongly agreed)
- Believes supervisor expects use of the ICG (n=696, 86% agreed/strongly agreed)
- ICG are NOT practical (n=696, 79% disagreed/strongly disagreed)
- No time to use the ICG (n=690, 77% disagreed/strongly disagreed)

12 Results

Results-Part 1

P=Practices (behaviors) (2 questions)
- Implemented the ICG (n=696, 78% agreed/strongly agreed)
- Have access to the necessary infection control supplies (n=698, 81% agreed/strongly agreed)

13 Results

Results-Part 2

P=Practices (behaviors) (6 questions)

Percentage of time USDH’s performed various infection control activities
- Pre-procedural rinsing (n=687, 47% rarely or never)
- Slow speed hand piece sterilization after each use (n=684, 56% almost always/often; 30% rarely or never)
- Utility glove use for handling contaminated instruments (n=682, 47% rarely or never)
- Utility glove use for cleaning the treatment operatory (n=684, 66% rarely or never).

14 Results

Correlations
• Spearman’s Rho assessed relations of KAP items
  • Significant direct relationships (p<0.05) found

15 Results
  Direct associations (+)
  • Familiarity: access to ICG (r=.565) & supplies (r=.423), relevance to patients (r=.430), & belief that supervisor expects use of the ICG (r=.467)
  • Supervisors expectations: familiarity (r=.467), confidence (r=.454), relevance (r=.591), & implementation (r=.529)
  • Implementation: familiarity (r=.537), accessibility (r=.413), & confidence (r=.406)

16 Results
  Direct associations (-)
  • Not practical: cumbersome (r=.540), no time (r=.545), & do not want to change (r=.549)
  • No time: don’t want to change (r=.472), cumbersome (r=.545), & not practical (r=.582)

17 Results
  Inverse associations (+/-)
  • Supervisor expects: not practical (r= -.447) & no time (r= -.423)
  • No time: supervisor expects (r= -.423), access to ICG & supplies (r= -.253), & have implemented (r= -.489)
  • Implementation: not practical (r= -.501), no time (r= -.489), cumbersome (r= -.414), & do not want to change (r= -.402)

18 Correlation Statistics Indicating a Direct Association between KAP Items
Results

Open-ended questions

Influencing factors in using the ICG
- Personal safety & patient safety
- Laws/regulations (being “forced” to do it)
- Ethical responsibility (“it’s the right thing to do”)
- Scientific evidence (based on sound research)

Barriers in using the ICG
- Lack of time
- Staff education
- Attitudes & cooperation of others in the office (dental assistants, dentists, office manager)
- Lack of supplies & cost
- Environmental waste issues

General open-ended comments
- Lack of hand pieces (unable to be sterilized after each use)
- Fear losing job if they “blow the whistle”
- Infection control practices are “overkill”
- Utility gloves “don’t fit”
- Plastic barriers are “cumbersome, inconvenient, and pollute the environment”

Discussion

In general USDH’s
- Are knowledgeable with ICG
  - Have access to the ICG & necessary supplies
  - Have positive attitudes toward ICG, believe they are important, and are practical to use
  - Believe ICG are based on sound evidence
  - Believe the person they report to expects them to use the ICG
  - Have implemented the ICG
USDH are compliant with ICG

- Correlations Summarized
  - If implemented:
    - Compliance with ICG is increased (supervisor expects, belief, familiarity, have time & access)
  - If not implemented:
    - Compliance with ICG is decreased (supervisor does not expect, do not believe, not familiar, & do not have time or access)

Discussion
- Low compliance with few behaviors
  - Pre-procedural rinsing
  - Utility glove use:
    - Handling contaminated instruments
    - Cleaning the treatment operatory
  - Hand piece sterilization (slow speed)
  - Consistent with prior studies

- Factors that influenced implementation
  - Safety for themselves & patients
  - Reduction of disease transmission
  - Belief in ethical & legal responsibilities

- Barriers to implementation
  - Time for adequate IC practices
  - Attitudes/cooperation of other staff members (dentists, dental assistants, schedulers)
  - Disagreement about IC practices (changing established habits)
  - Employers unwillingness to change or provide adequate training and/or supplies, and cost

Discussion
- Safety climate/culture in the workplace was an influencing factor
  - Practice owner influential in setting safety climate
Positive safety climate (supervisor expects use of ICG)
- Less positive safety climate (supervisor does not expect use of ICG)

Discussion

Limitations
- Homogeneity of respondents
- Mixed-mode method

Future research
- Examine low compliance with
  - Pre-procedural rinsing
  - Utility glove use
  - Develop & evaluate interventions

- Examine KAP of other groups
  - Dental assistants, dentists, and office managers
  - Comparisons among these groups

References
Questions