Key points

- There is significant anxiety among dental practitioners partly born out of a lack of confidence and understanding in Public Health guidance pertaining to COVID-19
- This could be down to a variety of factors including the differences in training and PPE available between primary care and secondary care, variations in subsequent editions of public health guidance and differences in guidance with other dental bodies with the consequent information overload from a range of sources
- Recommendations include the dissemination of unified guidance amongst dental bodies, retrospective analysis of the SOPs used globally in the first wave and research into the effectiveness of pre-operative mouth-rinses in the reduction of aerosol generation

Multicentre survey of dental practitioners on COVID-19 guidance across England and Wales

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Abstract

Aims To assess perception of COVID-19 exposure risk, understanding and confidence in the associated Public Health guidelines and training in the use of personal protective equipment (PPE) amongst dental practitioners (DPs).

Method We conducted a self-administered anonymous survey of DPs in centres across England and Wales following the SOP recommendations published by PHE and PHW. The survey was live from 8th June 2020 until 12th June 2020. 200 DPs completed the survey. Results were collated and analysed graphically for interpretation.

Results Most respondents (57.5%) felt that due to their role of being a dental practitioner, they were at a high risk of COVID-19 transmission and (52.5%) that published guidelines from their respective public health body (either PHE or PHW) were not sufficient for identifying patients with or at risk of COVID-19. The overall correlation showed that DPs in Wales had a more confident outlook on guidance from their public health body compared with DPs in England.

Conclusion Our survey illustrates a lack of confidence in and understanding of COVID-19 guidance from PHW and PHW amongst dental practitioners, together with significant anxiety regarding exposure risk in the dental setting. Recommendations are outlined to address further waves of the disease.

Introduction

The 2019 novel coronavirus disease, COVID-19, has disrupted systems globally.

Initial reports document the index case in Wuhan, China in 2019.[1] Wuhan became the epicentre of the epidemic and as of March 13th, 2020, COVID-19 was declared a global health pandemic by the World Health Organisation (WHO). The novel coronavirus can vary in both its clinical presentation and severity, with some patients asymptomatic and others requiring Intensive Care Unit (ICU) admission and ventilatory support. Common symptoms of COVID-19 include a recurrent dry cough, dyspnoea, stridor, fatigue and fever.[2]

Transmission of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-Cov-2) is through respiratory droplets among persons in close contact and possibly contaminated surfaces.[3] The most common form of transmission is via aerosol inhalation of said respiratory droplets.[4] COVID-19 spread can be limited through rigorous infection control methods such as meticulous and recurrent hand hygiene, limiting the touching of ones' face, thorough decontamination of surfaces, the wearing of face coverings and maintaining adequate physical distancing

from others so as to protect from aerosol inhalation.[5,6]

Those working as Dental Practitioners (DPs) are therefore among the most susceptible due to the inherent need to treat patients at such close proximity. Furthermore, Aerosol Generating Procedures (AGPs) are imperative to the delivery of successful, high quality dental care. Examples of this include the removal of caries with a high-speed handpiece or the debridement of the plaque biofilm in the management of periodontal disease.

The inescapable nature of aerosol generation, patient contact and the consequent high transmission risk have led to the release of guidance documents from Public Health England (PHE) and Public Health Wales (PHW) respectively. Dental Care Professionals (DCPs) and DPs have received a multitude of guidance affiliated to recognised professional organisations with regards to standard operating procedures (SOPs).[7,8,9]

Aims and objectives

We set out to assess perception of COVID-19 exposure risk, understanding and confidence in the associated Public Health guidelines and training in the use of personal protective equipment (PPE).

Methods

We conducted a self-administered anonymous survey that was predominantly disseminated by email to DCPs and DPs across centres in England and Wales. Closed social media groups were also used to disseminate the survey. The survey consisted of six concise, short questions with multiple choice answers assessing perception of COVID-19 exposure risk, understanding and confidence in the associated Public Health guidelines and training in the use of PPE following the SOP recommendations published by PHE and PHW. A final box allowed participants an optional free-text response for any additional comments. The survey was live from 8th June 2020 until 12th June 2020. Results were collated and analysed graphically for interpretation. For the sake of this article, the term 'dental practitioner' (DP) will include dental care practitioners (DCPs).

Results

A total of 200 dental practitioners completed the survey comprising 169 dentists (84.5%), 18 dental nurses (9%), 11 dental hygiene and therapists (5.5%), 1 dental therapist (0.5%) and 1 dental hygienist (0.5%) as shown in Figure 1.

Out of the 200 respondents, 142 worked in England (71%) and 58 worked in Wales (29%).

115 respondents (57.5%) felt that due to their role of being a dental practitioner, they were at a high risk of COVID-19 transmission. 66 respondents (33%) did not feel at high risk of COVID-19 transmission as a dental practitioner and 19 respondents (9.5%) were unsure.

> 'The inescapable nature of aerosol generation, patient contact and the consequent high transmission risk have led to the release of guidance documents from Public Health England (PHE) and Public Health Wales (PHW) respectively.'

As of 12th June 2020, 98 out of 200 participants (49%), had had no formal training in the use of PPE.

Most respondents, 105 (52.5%), felt that published guidelines from their respective public health body (either PHE or PHW) were not sufficient for identifying patients with or at risk of COVID-19. A minority of respondents, 66 (33%) thought the guidance to be sufficient while a smaller minority still, 29 (14.5%), were unsure, as highlighted in Figure 2.

On closer inspection, dental practitioners in Wales felt the guidance for identifying patients with or at risk of COVID-19 from PHW was generally more sufficient compared with how dental practitioners in England felt with respect to PHE. 38% of dental practitioners in Wales thought that the PHW guidance was sufficient in this regard compared with 31% of dental practitioners in England with respect to PHE. 43% of dental practitioners in Wales thought that the PHW guidance was insufficient in this regard compared with 56% of dental practitioners in England with respect to PHE – shown in Figure 2.

Overall confidence among our 200 respondents regarding PPE guidance delivered by PHE/PHW was generally not very high. Using a modified visual analogue scale (VAS) from '1' corresponding to 'not confident at all' up to '5' corresponding to 'very confident', only 8 respondents (4%) responded with a score of '5' to indicate 'very confident'. The mode response was '3'.

Although DPs in both England and Wales showed similarities in the overall confidence trend concerning PPE guidance. The overall correlation exhibited by the data showed that DPs in Wales had a more confident outlook on guidance from their public health body compared with DPs in England: 9% of DPs in Wales scored '5 - very confident' as opposed to only 2% of DPs in England. Moreover, DPs in England had a proportionally higher number of low scores (1 or 2) compared to DPs in Wales.

A summary of the optional free-text comments is detailed below in Table 1. These are not the opinions of the authors, neither do the authors endorse these views as necessarily legitimate or accurate. These are merely the expressions of commentary by survey respondents in Table 1.

Discussion

This finding highlights the potential anxiety DPs feel towards contracting COVID-19. DPs play an essential role in maintaining public health and improving an individual's quality of life. This survey response highlights the importance of ensuring DPs feel well protected in their workplace. The perception of higher risk is likely due to close contact to patients' oral cavities and often the need for AGPs to relieve patients from dental pain.[10,11] Some DPS were unsure if they were at increased risk which points towards the minimal evidence-based information that has been disseminated regarding the transmission of the novel virus in the dental setting. On the other hand, 33% of DPs felt they were not at a higher risk of contracting COVID-19 which is likely due to the rigorous universal cross infection procedures that are already applied in dental practices.[12] Traditionally dental professionals are well trained in universal cross infection procedures which include hand hygiene, PPE, disinfection and sterilisation procedures as outlined in the HTM01-05 document (Decontamination in primary care dental practices).[13]

This response was surprising considering all DCPs undergo PPE training in great depth in their respective training pathways. However, in the context of COVID-19 there seemed to be minimal training available to DPs in primary care. In the secondary care setting, healthcare workers working in hospitals were given access to PPE training including mask fit testing. However, NHS

Figure 1 Initial survey responses

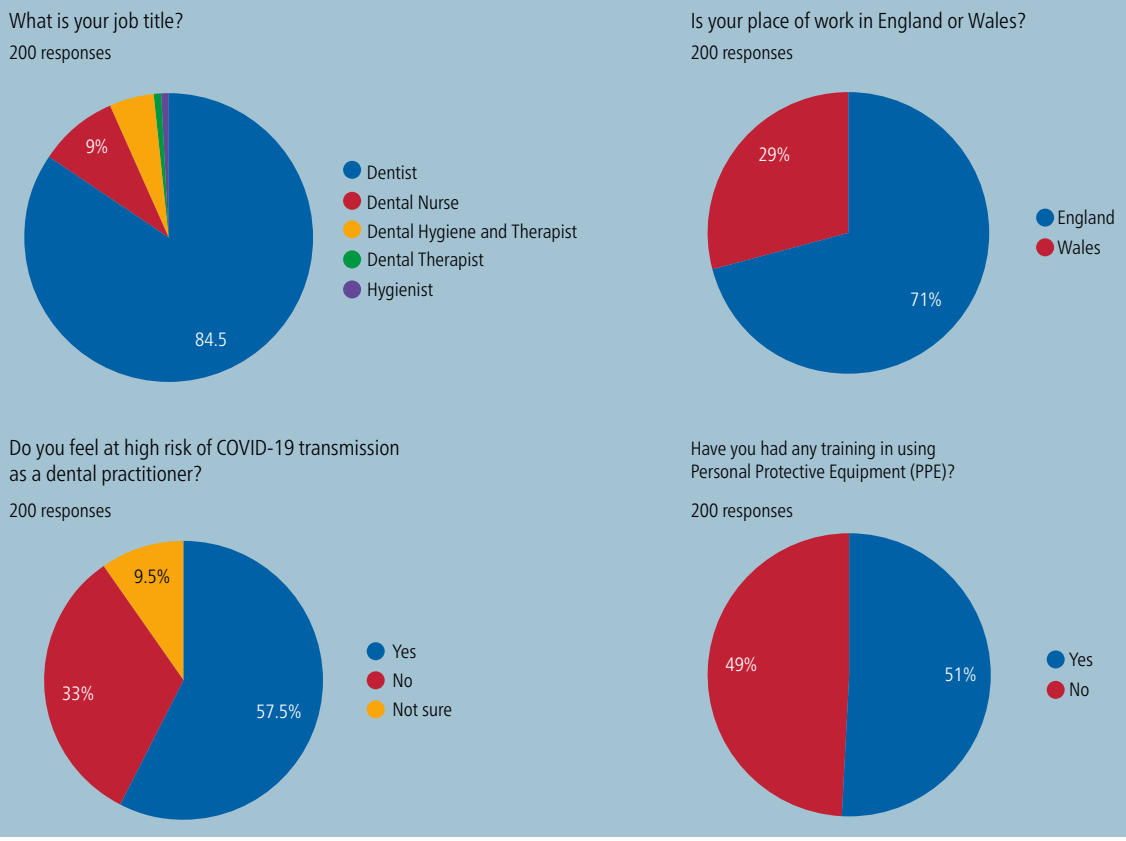

Figure 2 COVID-19 risk confidence

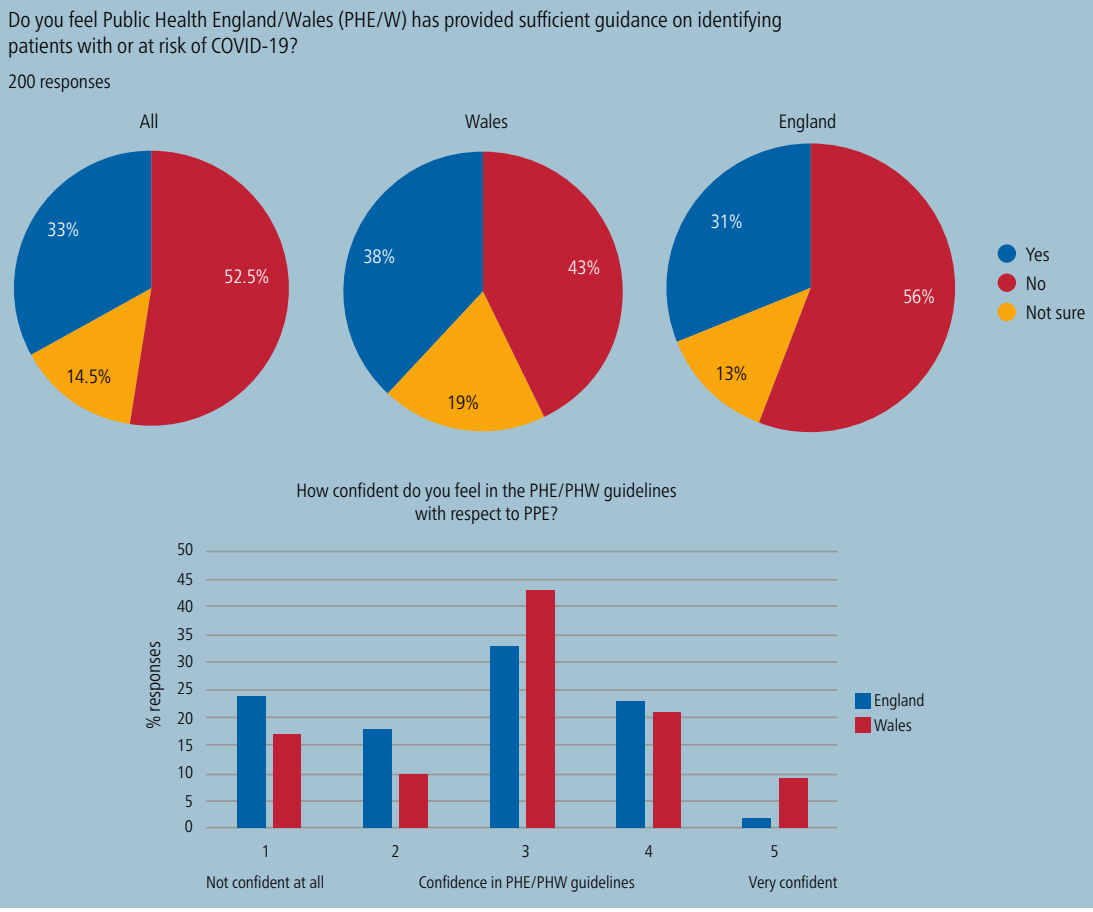

Table 1 Statements made by participants of survey

"It seems the fundamentals of cross-infection and PPE have been forgotten. Our universal precautions were to treat everyone the same, assume that everybody is infectious. Why are masks now sessional?"
"The SOP is biased and based on financial implications and current PPE availability".
"There is a lot of mixed, contradictory and repetitive guidance".
"I don't feel comfortable using the ordinary mask and plastic non-sleeved apron just because it's a non-AGP procedure and a patient doesn't have a temperature. Patients can have the virus with no symptoms and give transmit onwards to us due to inadequate PPE being advised with type IIR masks only being used".
"Are BAME workers protected?"
"The slow and initial confused response from NHSE which seemed to change with PPE availability. They should be honest that their PPE guidelines reflect that we were let down by the government and the policies reflect this. For example, changing SOPs from single-use masks to use for the whole session masks."
"The dental bodies have been extremely poor in clearly guiding the dentists as to what is the correct protocols and procedures to follow. Extremely disappointed and confidence is low."
"Not confident in PHE guidance about PPE for AGP as not evidence based."
"Conflicting evidence with regard to using a slow hand-piece with polish, were do we stand from an indemnity point of view?"
"Knowing patients and team COVID-19 status would help greatly in risk assessment, so if IgG immune we can treat as normal precautions even with AGPs too".
"The infection measures we are being asked to take far outweigh the minute risk of transmission in the surgery. A pragmatic approach akin to what we were doing before, I would find acceptable for all procedures, maybe with FFP3 masks until community numbers reduces further".
"There is great concern for the lack of leadership during this pandemic within Dentistry in England. Clear guidance, clarity and consistency have instead been met with cowardice and contradiction".

DPs in primary care were not able to access this same level of training. NHS dental practices had to source their own PPE and arrange mask fit testing privately. So although there was published guidance for PPE, almost half of the DPs surveyed felt they had no training in PPE use and only 11% of responses of English and Welsh DPs stated that they were 'very confident' in the PPE guidance delivered by PHE/PHW.

52.5% of DCPs felt that published guidelines from their respective public health body was not sufficient for identifying patients with or at risk of COVID-19. A possible explanation for this is the evolving nature of COVID-19 guidance which can sometimes be contradictory when a further edition is published.[14] However, this is something expected with a novel virus, as we continue to gain further data, we expect guidance to potentially evolve further. As well as the guidance published from PHE/W, dental professionals are accustomed to looking at guidance published from other respected oral and dental bodies such as the FGDP, SDCEP and BAOMS.[7,8,9] There was some variation between the guidance being given from these bodies which could have decreased the overall confidence DCPs had in the PHE/W guidance. Moreover, the large volume of information provided by these various published documents can be overwhelming to digest and can lead to the state of panic which may have contributed to the overall lack of confidence.[15]

This study is limited in that some documentation has been amended since publication. The nature of this global crisis means that SOPs are 'live' documents, hence common practice applicable upon publication may no longer be of significance. Furthermore, DPs should be more comfortable with new working arrangements now that dentistry has started to rebuild momentum with the opening of GDPs in a phased manner since June 8th, 2020. However, the relevance of this study is pivotal in DP's assessment of confidence in the delivery of general dental care following the release of SOPs prior to 12th June 2020 (at the close of the survey), as majority of initial guidance had been published at this point.

Conclusion

Our survey illustrates a lack of confidence in and understanding of COVID-19 guidance from PHW and PHW amongst dental practitioners, together with significant anxiety regarding exposure risk in the dental setting. As a result, the lack of coordination amongst dental units risks creating further confusion for staff and patients. Considering the rapidly changing situation, effective dissemination of and adherence to unified, regularly updated Public Health guidance is prudent to instil confidence amongst dental practitioners and to ensure a coordinated, evidence-based response across the dental workforce. Further research into the effectiveness of pre-operative mouth-rinses in the reduction of aerosol generation or transmission as well as COVID transmission levels with improved oral health is of relevance. Revisiting strategies applied within the dental setting during outbreaks such as SARS-CoV as well as retrospective analysis comparing the deliverance and SOPs of dentistry most recently around the globe may well reduce transmission and save lives – especially in the case of further waves of the disease. ◆

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