Presenting patients with information on their oral health risk: the PREFER three-arm RCT and ethnography

Rebecca Harris,¹* Christopher Vernazza,² Louise Laverty,¹ Victoria Lowers,¹ Girvan Burnside,³ Stephen Brown,⁴ Susan Higham¹ and Laura Ternent⁵

¹Department of Health Services Research, University of Liverpool, Liverpool, UK ²School of Dental Sciences, Newcastle University, Newcastle upon Tyne, UK ³Department of Biostatistics, University of Liverpool, Liverpool, UK ⁴Department of Psychological Sciences, University of Liverpool, Liverpool, UK ⁵Institute of Health and Social Care, Newcastle University, Newcastle upon Tyne, UK

Declared competing interests of authors: Christopher Vernazza reports a grant from GlaxoSmithKline (GSK) (Brentford, London, UK) during the conduct of the study. Girvan Burnside reports a grant from GSK during the conduct of the study. Susan Higham reports grants from Unilever UK Limited (London, UK) and GSK and an Engineering and Physical Sciences Research Council (Swindon, UK) and GSK CASE (formerly known as Collaborative Awards in Science and Engineering) Studentship during the conduct of the study.

Disclaimer: This report contains transcripts of interviews conducted in the course of the research and contains language that may offend some readers.

Published January 2020 DOI: 10.3310/hsdr08030

Plain English summary

Presenting patients with information on their oral health risk

Health Services and Delivery Research 2020; Vol. 8: No. 3

DOI: 10.3310/hsdr08030

NIHR Journals Library www.journalslibrary.nihr.ac.uk

^{*}Corresponding author harrisrv@liverpool.ac.uk

Plain English summary

A new system in NHS dentistry in England is being tested, which involves putting patients into traffic light (TL) categories: 'red' for high, 'amber' for medium and 'green' for low risk of dental disease. Currently, it is not known whether or not dentists talk to patients about risk, whether or not patients find TL risk information useful and if this leads to improved behaviours such as better toothbrushing. New camera technology, Quantitative Light-Induced Fluorescence (QLFTM) (Inspektor Research Systems AB, Amsterdam, the Netherlands), is also available and produces attention-grabbing photographs with unbrushed areas highlighted in red. Whether or not patients appreciate this information and use it to improve their brushing is not known.

First, a literature review was carried out to see whether or not the form in which risk information is presented to patients is valued and useful. This review found only 12 studies, mainly showing that even if information is presented visually or with computers, patients still want to discuss information to make it meaningful.

Second, an experiment was conducted in four dental practices involving 412 patients who were given (1) TL information, (2) QLF photographs or (3) just verbal information. Information on oral health was collected from patients, QLF images of their teeth were taken and telephone interviews were conducted 6 and 12 months later. It was found that 51% of patients liked verbal information best, 35% of patients liked QLF photographs best and 14% of patients liked TL information best; this varied between practices. When patients were asked to value information, TL was valued least. Although there was a slight improvement in patients' reports of toothbrushing and amount of sugar in drinks, there was no difference between the three types of information tested.

Third, 368 dental appointments were observed and 30 patients and 16 dental staff were interviewed. Mixed views were found about TL and QLF information but, mostly, what patients really want is detailed, personal, verbal information from their dentist.

Health Services and Delivery Research

ISSN 2050-4349 (Print)

ISSN 2050-4357 (Online)

This journal is a member of and subscribes to the principles of the Committee on Publication Ethics (COPE) (www.publicationethics.org/).

Editorial contact: journals.library@nihr.ac.uk

The full HS&DR archive is freely available to view online at www.journalslibrary.nihr.ac.uk/hsdr. Print-on-demand copies can be purchased from the report pages of the NIHR Journals Library website: www.journalslibrary.nihr.ac.uk

Criteria for inclusion in the Health Services and Delivery Research journal

Reports are published in *Health Services and Delivery Research* (HS&DR) if (1) they have resulted from work for the HS&DR programme, and (2) they are of a sufficiently high scientific quality as assessed by the reviewers and editors.

HS&DR programme

The HS&DR programme funds research to produce evidence to impact on the quality, accessibility and organisation of health and social care services. This includes evaluations of how the NHS and social care might improve delivery of services.

For more information about the HS&DR programme please visit the website at https://www.nihr.ac.uk/explore-nihr/funding-programmes/health-services-and-delivery-research.htm

This report

The research reported in this issue of the journal was funded by the HS&DR programme or one of its preceding programmes as project number 13/33/45. The contractual start date was in September 2014. The final report began editorial review in November 2017 and was accepted for publication in April 2018. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The HS&DR editors and production house have tried to ensure the accuracy of the authors' report and would like to thank the reviewers for their constructive comments on the final report document. However, they do not accept liability for damages or losses arising from material published in this report.

This report presents independent research funded by the National Institute for Health Research (NIHR). The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, NETSCC, the HS&DR programme or the Department of Health and Social Care. If there are verbatim quotations included in this publication the views and opinions expressed by the interviewees are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, NETSCC, the HS&DR programme or the Department of Health and Social Care.

© Queen's Printer and Controller of HMSO 2020. This work was produced by Harris *et al.* under the terms of a commissioning contract issued by the Secretary of State for Health and Social Care. This issue may be freely reproduced for the purposes of private research and study and extracts (or indeed, the full report) may be included in professional journals provided that suitable acknowledgement is made and the reproduction is not associated with any form of advertising. Applications for commercial reproduction should be addressed to: NIHR Journals Library, National Institute for Health Research, Evaluation, Trials and Studies Coordinating Centre, Alpha House, University of Southampton Science Park, Southampton SO16 7NS, UK.

Published by the NIHR Journals Library (www.journalslibrary.nihr.ac.uk), produced by Prepress Projects Ltd, Perth, Scotland (www.prepress-projects.co.uk).

NIHR Journals Library Editor-in-Chief

Professor Ken Stein Professor of Public Health, University of Exeter Medical School, UK

NIHR Journals Library Editors

Professor John Powell Chair of HTA and EME Editorial Board and Editor-in-Chief of HTA and EME journals. Consultant Clinical Adviser, National Institute for Health and Care Excellence (NICE), UK, and Senior Clinical Researcher, Nuffield Department of Primary Care Health Sciences, University of Oxford, UK

Professor Andrée Le May Chair of NIHR Journals Library Editorial Group (HS&DR, PGfAR, PHR journals) and Editor-in-Chief of HS&DR, PGfAR, PHR journals

Professor Matthias Beck Professor of Management, Cork University Business School, Department of Management and Marketing, University College Cork, Ireland

Dr Tessa Crilly Director, Crystal Blue Consulting Ltd, UK

Dr Eugenia Cronin Senior Scientific Advisor, Wessex Institute, UK

Dr Peter Davidson Consultant Advisor, Wessex Institute, University of Southampton, UK

Ms Tara Lamont Director, NIHR Dissemination Centre, UK

Dr Catriona McDaid Senior Research Fellow, York Trials Unit, Department of Health Sciences, University of York, UK

Professor William McGuire Professor of Child Health, Hull York Medical School, University of York, UK

Professor Geoffrey Meads Professor of Wellbeing Research, University of Winchester, UK

Professor John Norrie Chair in Medical Statistics, University of Edinburgh, UK

Professor James Raftery Professor of Health Technology Assessment, Wessex Institute, Faculty of Medicine, University of Southampton, UK

Dr Rob Riemsma Reviews Manager, Kleijnen Systematic Reviews Ltd, UK

Professor Helen Roberts Professor of Child Health Research, UCL Great Ormond Street Institute of Child Health, UK

Professor Jonathan Ross Professor of Sexual Health and HIV, University Hospital Birmingham, UK

Professor Helen Snooks Professor of Health Services Research, Institute of Life Science, College of Medicine, Swansea University, UK

Professor Ken Stein Professor of Public Health, University of Exeter Medical School, UK

Professor Jim Thornton Professor of Obstetrics and Gynaecology, Faculty of Medicine and Health Sciences, University of Nottingham, UK

Professor Martin Underwood Warwick Clinical Trials Unit, Warwick Medical School, University of Warwick, UK

Please visit the website for a list of editors: www.journalslibrary.nihr.ac.uk/about/editors

Editorial contact: journals.library@nihr.ac.uk