Selective laser trabeculoplasty (SLT) performed by optometrists for patients with glaucoma and ocular hypertension: a scoping review protocol

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ABSTRACT

Introduction In the UK, the National Institute for Health and Clinical Excellence are amending guidelines to support use of selective laser trabeculoplasty (SLT) as a first-line treatment for patients with glaucoma and ocular hypertension. The procedure is quick, effective in lowering intraocular pressure, cost-effective for the National Health Service and offers an equivalent safety profile to other therapies. The procedure is typically performed by an ophthalmologist; however, there is potential for suitably trained non-medical professionals to deliver the therapy. This scoping review will identify service delivery models where SLT is delivered by non-medical professionals worldwide, with a focus on optometrists.

Methods and analysis A systematic search of the following databases will be conducted: CINAHL; MEDLINE Complete; EMBASE; HMIC and Ovid Emcare. For inclusion, studies must examine healthcare models of SLT delivery by optometrists and describe one of the following outcomes: training procedures; clinical effectiveness; safety and cost-effectiveness. A search of grey literature will be conducted via professional societies; national health departments; medicine regulatory bodies; charities and conference proceedings. Two reviewers will independently screen titles, abstracts and full-texts articles, followed by charting of data. This evidence synthesis will summarise findings narratively, supplemented with tables and descriptive statistics.

Ethics and dissemination The review focuses on published articles and therefore ethical approval is not required. The findings will be relevant to key stakeholders including health service managers, policymakers, clinicians and patients. The findings of this review will be disseminated through peer-reviewed publications, conference presentations and summary reports for key stakeholders.

RATIONALE

Glaucoma is a chronic ophthalmic condition causing non-recoverable loss of vision. The most prevalent form is open-angle glaucoma, resulting in over 1 million glaucoma-related outpatient visits in the hospital eye service (HES) annually. Approximately 15% of outpatient appointments in glaucoma clinics are due to ocular hypertension (OHT), a condition where intraocular pressure (IOP) is consistently measured at greater than 2 SD above the population mean IOP, without the presence of clinical evidence of glaucomatous optic nerve damage or visual field defect. OHT is, however, a good predictor for onset of glaucoma. The number of people in the UK with glaucoma is expected to rise by 44% by 2035, along with a 16% increase in the patients diagnosed with OHT and 18% increase in glaucoma suspects, who are also monitored in the HES.

The number of patients referred into the HES is rapidly increasing. Explanations for this surge in patients include an ageing population, changes to national guidelines and improvements in disease detection by primary eye care services. Consequently, ophthalmic units have become the busiest outpatient service within the publicly funded National Health Service (NHS), with 7.8 million hospital attendances in ophthalmology in England in 2018–2019. Glaucome care is a significant contributor to the large patient numbers seen in the HES. For example, once referred, patients with glaucoma are expected to have, on average, 40 follow-up visits over their lifetime. Provision of an effective glaucoma care service is challenged further by a shortfall in ophthalmologists observed worldwide, leading to a call for urgent action to alleviate growing pressure on the HES.

In response to concerns regarding mounting pressure, the NHS published the Long Term Plan in 2019; a strategy describing plans to redesign patient care services to meet current challenges. Attempts to reduce delays and manage the backlog of patients with glaucoma and OHT in the HES are being sought by a number of means, including establishing evening or weekend clinics, recruiting more ophthalmologists, sourcing external provision, refinement of referral pathways and implementation of...
Collect and summarise evidence on clinical effectiveness, safety, and cost-effectiveness of existing infrastructures where SLT is delivered by optometrists.

METHODS AND ANALYSIS

The decision to conduct a scoping review was based on published guidance regarding methodological approaches when undertaking an evidence synthesis. Specifically, the literature suggests that when the aim of the review is to identify characteristics of different healthcare systems, as with this evidence synthesis, a scoping review would likely be most appropriate. Moreover, a scoping approach is particularly suitable when discussing workforce organisations, where they have been implemented, who they have targeted and what types of conditions they have focused on. This protocol will follow best practice for conducting scoping reviews as outlined by the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR). We will follow a framework for conducting scoping reviews to ensure all aspects of the process are undertaken using rigorous and transparent methods.

Inclusion and exclusion criteria

This scoping review will include research studies of any design and methodological approach. There will be no limit on publication dates. Only studies where the full text is available and in English language will be included. Studies must address the exposure of interest (ie, glaucoma or OHT). Sources may be from both private and public sector. There will be no requirement for studies to include specific outcomes relating to, for example, efficacy of optometrist delivered SLT. Sources where an SLT extended role for optometrists is conceptualised will be included, as relevant details may be discussed, such as a proposed training infrastructure. While a broad range of search terms relating to non-medical professionals will be included, the review will focus on optometrists due to their clinical readiness in areas pertinent to SLT delivery including use of slit lamp, gonioscopy and Goldmann applanation tonometry. We will exclude articles where the aim is to measure equivalence of SLT outcomes between ophthalmologists-in-training and consultant ophthalmologists, as the purpose of this review is to investigate non-medical SLT training and delivery.

Search strategy

The search will be conducted in the following databases: CINAHL (Complete Cumulative Index of Nursing and Allied Health Literature), via EBSCOhost; MEDLINE Complete; Embase; HMI (Health Management Information Consortium) and Ovid Emcare, via Ovid. All databases will be searched from inception date. As advised by The Cochrane Handbook for Systematic Reviews of Interventions, the research team devised an initial list of medical subject headings (MeSH) to help develop the search terms. The MeSH were entered into PubMed to identify terms which may use a different word to describe the same concept (eg, ‘doctor’ and ‘physician’). The list of search terms was complete once MeSH had been searched for all terms. The sensitivity of the final terms was assessed in a trial search. We will search reference lists of all included research articles to identify any further potentially relevant studies. It is anticipated that our planned search will identify primary research studies (ie, empirical evidence) relating to SLT performed by non-medical professionals. To accompany this, we will conduct a search of relevant grey literature sources (ie, clinical guidelines and reports). The grey literature search strategy was decided among the research team with consultation from the National Institute of Health Research (NIHR) Applied Research Collaboration North Thames. The resources for the grey literature search will include professional societies; national health departments; medicine regulatory bodies; charities and conference proceedings. In addition to web searching, we will develop a standardised email to send to professional societies enquiring about current status of optometrist delivered SLT in locations including Canada, USA, Australia, New Zealand and South Africa.
Search terms
('ophthalmologist*' OR 'hospital medical staff*' OR 'junior physician*' OR 'hospital registrar*' OR 'hospital attending physician*' OR 'hospital medical staff*' OR 'resident*' OR 'nonmedical internship*' OR 'nonmedical residency*' OR 'non-medical internship*' OR 'non-medical residency' OR 'allied health personnel' OR 'allied health professional*' OR 'healthcare assistant*' OR 'healthcare support worker*' OR 'paramedic*' OR 'paramedic personnel' OR 'population programme specialist*' OR 'optometrist*) AND ('trabeculoplast*' OR 'trabeculectom*' OR 'goniotom*')

Study selection
Two reviewers (LJ and EK) will independently screen the titles and abstracts of the identified studies using the inclusion/exclusion criteria that were decided a priori. Any discrepancies between the reviewers will be resolved through discussions with a third reviewer (GG) until a consensus is achieved. Full text articles, reports and guidelines will then be obtained for further screening. The studies will be assessed for suitability using a web-based screening software (Covidence; Veritas Health Innovation Ltd, Melbourne, Australia; available at http://www.covidence.org). A PRISMA flow diagram will be completed to summarise the study selection process.

Data charting
After completion of the selection process, all articles relevant to the review will undergo data charting. Data will be extracted following recommended methods, whereby a custom form will be developed in Microsoft Excel to capture relevant details within the articles and guidelines (Table 1). A pilot data extraction will be performed to assess equivalence between the two reviewers. We envisage the data extraction to be an iterative process, where new fields may be added to the form throughout the process. Following recommendations from the Cochrane Collaboration, we will contact authors of eligible primary studies via email to obtain any additional information on unclear items.

Table 1 Data charting for empirical and grey literature

<table>
<thead>
<tr>
<th>Domain/subdomain</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Document characteristics</td>
<td>Empirical study, review, commentary, guidelines and so on</td>
</tr>
<tr>
<td>Title</td>
<td>Title of publication</td>
</tr>
<tr>
<td>Authors</td>
<td>Authors of publication</td>
</tr>
<tr>
<td>Publication year</td>
<td>Year of publication</td>
</tr>
<tr>
<td>Full citation</td>
<td>Citation of publication</td>
</tr>
<tr>
<td>Web link</td>
<td>Link to online source</td>
</tr>
<tr>
<td>2. Study characteristics</td>
<td>Observational study, experimental, qualitative and so on</td>
</tr>
<tr>
<td>Setting</td>
<td>For example, hospital eye service</td>
</tr>
<tr>
<td>Location</td>
<td>Country of publication</td>
</tr>
<tr>
<td>Population</td>
<td>Study eligibility criteria</td>
</tr>
<tr>
<td>Sample size</td>
<td>Number of participants in study</td>
</tr>
<tr>
<td>Study objectives</td>
<td>What is the study research question (if relevant)?</td>
</tr>
<tr>
<td>3. Characteristics of service delivery and outcomes</td>
<td>For example, number of staff in service, profile of staff (optometrists, hospital nurse, allied health professional and so on)</td>
</tr>
<tr>
<td>Staffing of service</td>
<td>For example, number of hours training, number of SLT procedures performed, details of supervision</td>
</tr>
<tr>
<td>Training</td>
<td>Details of SLT efficacy (eg, evidence of sustained stable IOP)</td>
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<tr>
<td>Clinical effectiveness</td>
<td>Aspects relating to safety of procedure (eg, reporting of adverse events)</td>
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<tr>
<td>Safety</td>
<td>Details relating to service costings</td>
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<tr>
<td>Cost-effectiveness</td>
<td>Any other study outcomes</td>
</tr>
<tr>
<td>Other outcomes</td>
<td>Limitations described by authors, and any other limitations identified</td>
</tr>
<tr>
<td>Limitations</td>
<td>Implications and conclusions as described by authors</td>
</tr>
</tbody>
</table>

IOP, intraocular pressure; SLT, selective laser trabeculoplasty.
Data synthesis
We will report the data using systematic narrative synthesis whereby the relevant literature will be used to generate a comprehensive evidence base of the infrastructure of SLT delivered by non-medical professionals. This will primarily be a textual approach where results will be presented narratively, supplemented with tables and descriptive statistics, and statistical analysis where possible. The study findings will be grouped depending on the similarities and differences in the outcomes assessed and themes will be identified to summarise healthcare models where SLT is delivered by non-medical professionals. Displaying information in this way will highlight the available evidence to the specific questions of the review.

Patient and public involvement
This scoping review protocol did not involve patients. However, stakeholder views, particularly patients, are an important consideration when considering the infrastructure of SLT delivery by non-medical professionals. Thus, the research team are undertaking a parallel investigation of stakeholder views (ophthalmologists, optometrists, patients and hospital managers) of this model of healthcare delivery.

Ethics and dissemination
Ethical approval for this scoping review was not required. We will publish the review in an open-access, peer-reviewed journal and publicise our findings at national and international meetings.

CONCLUSION
The overall aim of this review will be to summarise the nature of the existing literature regarding SLT delivered by optometrists to patients with glaucoma and OHT. By synthesising the relevant literature, we will gain an understanding of the existing literature regarding SLT delivered by non-medical professionals. Thus, the research team are undertaking a parallel investigation of stakeholder views (ophthalmologists, optometrists, patients and hospital managers) of this model of healthcare delivery.

We believe the findings of this review will provide important evidence regarding non-medical professionals delivering SLT that will be useful to a number of stakeholders including policymakers, health service managers and service users.

REFERENCES


18 Peters MDJ, Micah DJP. In no uncertain terms: the importance of a defined objective in scoping reviews. JBI Database System Rev Implement Rep 2016;14:1–4.
