<u>Research Proposal</u>

Written in line with PRISMA-P 2015 Statement

Title

A systematic review of the experience of treatment burden of digital health for military personnel in primary healthcare.

Registration

PROSPERO. Registration Number: CRD42023494297.

Authors

Paul Erhahiemen (Corresponding author)

Doctoral Student, General Practice and Primary Care, School of Health and Wellbeing, Clarice Pears Building, 90 Byres Road, University of Glasgow, G12 8TB, UK. Email: p.erhahiemen.1@research.gla.ac.uk

Prof Catherine A O'Donnell

Professor of Primary Care Research & Development and Deputy Head of School, General Practice and Primary Care, School of Health and Wellbeing, Clarice Pears Building, 90 Byres Road, University of Glasgow, G12 8TB, UK. Tel: +44(0) 141 330 8329, Email: Kate.O'Donnell@glasgow.ac.uk

Dr Katie Gallacher

Senior Clinical Lecturer, General Practice and Primary Care, School of Health and Wellbeing, Clarice Pears Building, 90 Byres Road, University of Glasgow, G12 8TB, UK. Tel: +44(0)141 330 8323, Email: Katie.Gallacher@glasgow.ac.uk

Dr Barbara I Nicholl

Senior Lecturer and Coordinator of MSc in Primary Care, General Practice and Primary Care, School of Health and Wellbeing, Clarice Pears Building, 90 Byres Road, University of Glasgow, G12 8TB, UK. Tel: +44(0)141 330 8327, Email: Barbara.Nicholl@glasgow.ac.uk

Contributions

PE is leading the protocol development, analyses and dissemination. CO, KG and BN are reviewers. All authors will contribute to the data interpretation and article.

Amendments

Significant protocol amendments will be recorded and included in dissemination.

Support

INTRODUCTION

Rationale

As the global demand for healthcare continues to outstrip the supply of care, healthcare systems are beginning to explore the exploitation of digital health (DH) to meet the growing demand and optimise services by improving effectiveness, efficiency, and scalability (King's Fund, 2021; Kueper, Zwarenstein, and Lizotte, 2020). DH refers to the intersection of digital technologies with healthcare to improve the overall efficiency and effectiveness of healthcare delivery, as well as improve patient experience (Kings Fund, 2021). The integration of DH in primary care is widely accepted to have improved patient engagement, healthcare delivery, and overall patient outcomes. It is extensively used in military primary care as well as in wider general population health systems (MOD, 2023; NHS, 2023a). It is possible that the use of DH modalities transfers work from health services to the patient, increasing their healthcare workload, which could potentially become burdensome.

Although DH is often viewed as convenient and efficient, it is crucial to gain a deeper understanding of the patient's experience of treatment burden. Gaining this understanding will help inform how and what services are delivered and in what circumstances. Treatment burden encompasses the workload or demand placed on the patient as a consequence of managing their health (Morris et al., 2020; Powell et al., 2021). These demands could be physical, emotional, financial, or psychological. Given the rise in global security risks, the military plays a crucial role in protecting human life and promoting peace and stability. Hence, it is necessary to consider the health needs of such an important demographic. An examination of the use of DH and the experience of treatment burden among military personnel is essential, as it plays a vital role in maintaining service personnel health and readiness through the promotion of preventative care, improved allocation, accessibility and availability of resources. Understanding treatment burden is critical for improving military health systems and overall patient outcomes by enhancing patient-centred care, treatment adherence, health equity, resource allocation, and people's capacity to manage their health and treatment workload.

The military has adopted DH based on recommendations by the National Institute for Health and Care Excellence (NICE), which aligns with the National Health Service (NHS). Nevertheless, due to the unique nature of service life, there are marked differences between the civilian population and military personnel. In light of the ongoing evidence highlighting the increasing demand and scarcity of resources in healthcare, digitalisation has emerged as a means to efficiently scale and make evidence- based interventions cost effective and accessible (EOHSP, 2021; Leightley and Murphy, 2022). An example is the use of DH to deliver psychological therapies, making them more widely available and accessible (NHS 2023).

Burden of Treatment Theory (BOTT) seeks to explore the impact of the complexity and demands of healthcare on the lives of patients and their support networks, and the resources required to manage health conditions and navigate health and social care systems. (May, 2014). It considers the overall patient experience given the

various tasks, time and efforts required to adhere to medical treatments, and manage health (May et al., 2014). This review aims to explore the experience of treatment burden of DH for military personnel in primary health care. Applying BOTT will allow us to understand and address the difficulties and challenges faced by military patients using DH, with the aim of reducing the treatment burden and improving the patients' quality of life (May, 2005; May et al., 2014).

Objectives

The purpose of this systematic review is to (1) understand the patient experience of the treatment burden of DH initiatives and interventions adopted by the military, (2) understand the barriers and facilitators to the use of DH, and (3) map the barriers identified to BOTT.

Method

This protocol has been produced in conformance with the Preferred Reporting Items for Systematic Review and Meta-Analysis Protocol (PRISMA-P) 2015 (Shamseer et al., 2015) and is registered with PROSPERO (CRD42023494297).

Eligibility criteria

Study design. Qualitative studies (peer reviewed primary studies and grey literature) will be included provided they are related to the experience of the use of DH in military personnel within primary care and meet the inclusion and exclusion criteria. Qualitative studies that are part of a mixed method study will also be included as will relevant grey literature, military reports and studies retrieved from military libraries. For studies to be included, they must contain elements of, or report on patient experience of digital health and/or treatment burden of digital health on patients. Treatment burden describes the healthcare workload on patients and the resulting impact on their functioning and wellbeing. The studies must have been published in the English language between January 2000 and May 2023. The use of digital health prior to 2000 was limited due to limitations in technology and with reactive care taking priority over preventative medicine. Since 2000, an abundance of technology combined with global health systems adopting preventative care has led to the exponential growth of DH (Abernathy et.al, 2022). Opinions, theses, editorials, systematic reviews and conference proceedings will be excluded. Studies which do not contain elements of, or report on patient experience and/or treatment burden will be excluded from this review.

Population. Personnel in the studies must be regular serving armed forces personnel (Army, Navy, Marines and Air Force), Gurkhas, Military Provost Guard Staff, mobilized Reservists and Full Time Reserve Service personnel. Studies involving veterans and civilian personnel employed by the military will be excluded.

Exposure. For this review, the intervention covers the full scope of DH which includes, health information technology, telemedicine, telehealth, mobile health, digital medical devices, digital applications, software, and

platforms which have been or are being used within primary care for diagnostics and treatment and/or self-care of any condition.

Comparator. The review does not seek to make comparisons however, if studies are retrieved which compare DH to conventional approaches e.g., face to face, this will be noted and commented upon.

Outcomes. Patient experience of treatment burden of DH in military personnel in primary care. Treatment burden describes the healthcare workload on patients and the resulting impact on their functioning and wellbeing.

Publication type. Included studies must be published or unpublished full text articles. Opinions, theses, editorials, systematic reviews and conference proceedings will be excluded.

Language. Included studies must be published in English language as this is the language spoken and understood by the review team.

Information Sources

The following electronic bibliographic databases have been searched: MEDLINE, EMBASE, PsycINFO and CINAHL.

Search Strategy

An information scientist at the University of Glasgow provided input to formulate the search strategy, which consists of the following concepts: digital health, military personnel, treatment burden, and patient experience. The search process queried the databases and exploited search features such as truncations, wildcards, and operators combined with Boolean terms. The search strategy used is summarised in Table 2 and can be found here: DOI: 10.5525/gla.researchdata.1546.

Study Records

Data Management

Records will be managed using Endnote and Distiller SR.

Selection Process

The search strategy will dictate the studies retrieved. Title and abstract screening will be independently undertaken by two reviewers. Additional sources of grey literature will also be searched. The full text of shortlisted studies will be retrieved and independently assessed for eligibility by two reviewers.
Any study eligibility disagreements will be resolved through discussion, if unresolved these will be discussed with a third reviewer. Endnote and Distiller will be used to facilitate the screening process.

Data collection process

Data extraction will be conducted by two reviewers, with details recorded and presented on an Excel spreadsheet. Any disagreements will be resolved through discussion with a third reviewer.

Data items

The data extracted will include study setting; study population and participant demographics and characteristics; details of the intervention; study methodology; recruitment and study completion rates; outcomes and times of measurement; information for assessment of the risk of bias; patient experience, treatment burden and branch of service.

Risk of bias in individual studies

Risk of bias will be independently assessed by two reviewers and checked by a third. Any disagreements will be resolved through discussion with the third reviewer. The Critical Appraisal Skills Programme (CASP) tool for qualitative studies and the Mixed Methods Appraisal Tool (MMAT) will be used to assess for quality.

Synthesis

The findings will be presented using thematic synthesis and examined in the context of BOTT. Thematic synthesis has been selected as it is a widely known and acceptable method of synthesising qualitative data where the intent is to understand content and context.

Where possible, qualitative comparisons will be made across areas of interest e.g., comparing the treatment burden associated with different types of digital intervention.

Confidence in cumulative evidence

This will be assessed using Grading of Recommendations, Assessment, Development and Evaluation (GRADE).

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