

A commitment and call to strengthen and expand qualitative research efforts to improve the impact of antimicrobial stewardship

Dena van den Bergh ^{1*} and Adrian Brink ²

¹Division of Infectious Diseases & HIV Medicine, Department of Medicine, Groote Schuur Hospital University of Cape Town, Cape Town, South Africa; ²Division of Medical Microbiology, Department of Pathology, Faculty of Health Sciences, University of Cape Town, Cape Town, South Africa

*Corresponding author. E-mail: denavandenbergh@outlook.com

Inadequate recognition of the value of qualitative research in healthcare, notably in antimicrobial stewardship (AMS), in addition to a lack of publishing space in medical journals has prompted *JAC-Antimicrobial Resistance* to focus on a qualitative series of AMS papers to incite interest in and support for pivotal qualitative approaches that make an indispensable contribution to our understanding of antibiotic use and how to address antimicrobial resistance. In this series, invited authors with diverse backgrounds and considerable expertise address and review intricate and varying qualitative research methods, behaviour change determinants, interventions and qualitative perspectives, with the aim of strengthening commitment and expanding qualitative initiatives to further the impact of AMS globally.

Introduction

‘Thank you for sending us your paper. We read it with interest but I am sorry to say that qualitative studies are an extremely low priority. . . Our research shows that they are not as widely accessed, downloaded or cited as other research.’¹

A ‘Twitter storm’ from the rejection of a qualitative study by a leading medical journal in 2016 stimulated a much-read open letter by 76 senior academics from 11 countries that ignited a global debate on the inadequate recognition of the value of qualitative research in healthcare and the deficit in publishing papers reporting qualitative research in mainstream medical journals.^{1,2} Antimicrobial stewardship (AMS) is complex and there are still many unanswered questions.^{3,4} Despite widespread recognition of the potential severe consequences of antimicrobial resistance (AMR), effective interventions that can be replicated and scaled across different geographies remain limited.^{5–7}

A structured search in the published literature conducted across four main databases for ‘antibiotic OR antimicrobial resistance’ showed a 3-fold increase between 2000 and 2017.⁸ In another analysis, the percentage of qualitative research articles in the general medical journals ranged from 0% to 0.6%, and up to 6.4% for the health services and policy research journals.⁹ In AMS the drive for more qualitative research to advance successful implementation remains limited.^{8,10} Publication space for qualitative AMS studies is a continuing challenge and additional strategies, such as establishing panels of suitable reviewers and enhancing the quality

of guidelines for researchers and authors, are important to advance this field of research.^{2,3,8}

One of the pivotal limitations surrounding many AMS interventions is that too few integrate social sciences, behavioural theory or behaviour change techniques into the design, evaluation and reporting of interventions.^{9,10} There is no doubt that AMS interventions are inherently complex, often involving significantly varying local structures and system dynamics as well as navigating how to change different behaviours by multiple healthcare professionals and citizens at numerous timepoints along the care pathway.^{3,6,10} More research is needed to adequately inform AMS interventions in different environmental and cultural contexts and to understand how effective interventions can be adapted and sustained across diverse settings.^{10,11} In response, the World Health Organisation (WHO) has recently highlighted the impact of COVID-19 on the use of antibiotics and released a set of tools aimed at tailoring behavioural change interventions and AMR programmes towards the needs of specific groups and contexts.¹²

JAC-Antimicrobial Resistance (JAC-AMR), as a new fully open access journal from BSAC committed to publishing academic content as well as peer review commentaries in the field of AMR and AMS, has recognized the gap with regards to publication space for qualitative research efforts as a requisite to further the impact of AMS. A summary of qualitative determinants in AMS reviewed upon invitation in this series is summarized in Table 1 and aims to amplify the call and inspire researchers across the globe to regard qualitative research as a fundamental tenet to enable improved AMS in various settings across the globe.

Table 1. Qualitative determinants in AMS reviewed in this series

Title	Authors	Qualitative determinants
Navigating sociocultural disparities in relation to infection and antibiotic resistance—the need for an intersectional approach	Esmita Charani, Marc Mendelson, Diane Ashiru-Oredope, Eleanor Hutchinson, Manmeet Kaur, Martin McKee, Mirfin Mpundu, James R. Price, Nusrat Shafiq and Alison Holmes	The need for an intersectional approach and navigating sociocultural inequalities in relation to antimicrobial resistance and antimicrobial stewardship approaches
Understanding antibiotic use: practices, structures and networks	Alice C. Tompson, Lenore Manderson and Clare I. R. Chandler	Understanding antibiotic use: practices, structures and networks— an ethnographic approach in AMS that describes the interaction of pathogens, humans and animals in a diverse and changing environment
Antimicrobial stewardship in Australia: the role of qualitative research in programme development	Karin A. Thursky, Laura Y. Hardefeldt, Arjun Rajkhowa, Courtney Ierano, Jaclyn Bishop, Lesley Hawes, Ruby Biezen, Sajal K. Saha, Leslie Dowson, Kirsten E. Bailey, Ri Scarborough, Stephen B. Little, Fiona Gotterson, Brian Hur, Anna Khanina, Karen Urbancic, Helen K. Crabb, Suzanna Richards, Anna Sri, Rodney James, David C. M. Kong, Caroline Marshall, Danielle Mazza, Trisha Peel, Rhonda L. Stuart, Jo-Anne Manski-Nankervis, N. Deborah Friedman, Noleen Bennett, Thomas Schulz, Helen Billman-Jacobe, Evette Buono, Leon Worth, Ann Bull, Michael Richards, Darshini Ayton, James R. Gilkerson, Glenn F. Browning and Kirsty L. Buising on behalf of the National Centre for Antimicrobial Stewardship	One health cross-stream AMS collaborations and qualitative research frameworks for antimicrobial stewardship
The feasibility and generalizability of assessing the appropriateness of antimicrobial prescribing: the Australian National Antimicrobial Prescribing Survey (NAPS)	Rodney James, Yoshiko Nakamachi, Andrew Morris, Sasheela Sri La Sri Ponnampalavanar, Pem Chuki, Miranda So, Ly Sia Loong, Caroline Chen, Robyn Ingram, Arjun Rajkhowa, Kirsty Buising and Karin Thursky	Overcoming inadequacies in information on antibiotic prescribing and understanding barriers and facilitators of mixed-method AMS solutions (NAPS in Australia)
How can behavioural science contribute to qualitative research on antimicrobial stewardship in primary care?	Aleksandra Borek, Marta Santillo, Marta Wanat, Christopher Butler and Sarah Tonkin-Crine	A deep dive into ‘the how’ of behavioural science methods and how this can contribute to qualitative antimicrobial stewardship
The value, challenges and practical considerations when conducting qualitative research on antimicrobial stewardship in primary care	Marta Wanat, Marta Santillo, Aleksandra Borek, Christopher Butler, Sibyl Anthierens and Sarah Tonkin-Crine	The value of qualitative research in primary care antimicrobial stewardship
Numbers and narratives: how qualitative methods can strengthen the science of paediatric antimicrobial stewardship	Charlotte Z. Woods-Hill, Anping Xie, John Lin, Heather A. Wolfe, Alex S. Plattner, Sara Malone, Kathleen Chiotos and Julia E. Szymczak	Insights into paediatric-focused qualitative antimicrobial stewardship

Upcoming articles will be subject to review and some details may change.

Qualitative determinants in AMS

In the first article, Charani *et al.*¹³ provide an overview of the research gap in AMR with respect to sociocultural inequalities and why it is important. It includes an intersectional framework for addressing the diverse sociocultural and political contexts in which resistance emerges and spreads and examines the

disproportionate impact on the disadvantaged, especially in low- and middle-income countries (LMICs).

Next, Tompson *et al.*,¹⁴ in an extensive and detailed review, demonstrate how ethnographic approaches make an indispensable contribution to understanding and addressing AMR and antibiotic use. They describe how social researchers could address

antibiotic use from a framework of complementary vantage points that acknowledge the social structures and networks in which antibiotic use is constructed and a viewpoint not always considered in AMR literature. This review invites us to shine the light of attention on how antibiotics are used in practice by patients, farmers, fishermen, drug sellers and clinicians and the wider social, economic, political and historical factors, in order to support change in practice.

A review of case studies from the National Centre for Antimicrobial Stewardship in Australia provides examples of qualitative research methodologies across the streams of antimicrobial health services research from a One Health perspective. This paper highlights the unique opportunity to explore the challenges in the implementation of AMS in hospitals, aged care, general practice, companion vets and the livestock industry. Findings from collaborative studies between veterinarians, doctors, pharmacists, nurses and bioethicists are compared and contrasted and provide an example of the types of qualitative research frameworks that can be applied to One Health AMS implementation.

Methodologies for developing validated data for the assessment of appropriate prescribing are essential to improve judicious use of antimicrobials. The National Antimicrobial Prescribing Survey (NAPS), a web-based platform and antimicrobial survey programme, has been adopted across Australia in all hospital types including public and private since 2013 and then extended to Canada, New Zealand, Malaysia, Bhutan and Fiji. James *et al.* share the barriers and facilitators experienced to date and review how including qualitative research methods has enabled collection of real-time information to enrich understanding of which areas of AMS need attention and provided a way to benchmark and track performance over time.

Following, a paper by Borek *et al.* provides an overview of how behavioural science can contribute and add value to qualitative research on AMS. It introduces behavioural science approaches, theories and frameworks, and provides practical examples of using them in qualitative AMS studies; in particular, what to consider and how to use these tools when designing and conducting qualitative studies and systematic reviews, developing AMS interventions and in process evaluations of interventions to change patients' and clinicians' behaviours related to AMS. The paper concludes by discussing the wider implications for intervention development, implementation, training and changing clinical practice, as well as for qualitative and AMS research.

Focusing on primary care, Wanat and colleagues illuminate key aspects related to conducting qualitative AMS in primary care, highlighting its unique value, challenges and practical considerations. From stakeholder involvement to choosing appropriate design, collecting data, analysis and reporting of qualitative data, the paper aims to enable high-value primary care AMS qualitative research, while highlighting future directions of qualitative research on AMS in primary care.

Finally, an in-depth white paper on paediatric-focused qualitative AMS highlights the opportunities for understanding context, drivers and human behaviour to enrich and facilitate paediatric AMS and embrace multidisciplinary investigations

that impact practices. Woods-Hill *et al.* undertake high-quality examples demonstrating topic areas such as provider attitudes, practice patterns, parent (or family) perspectives and stewardship in special paediatric populations such as oncology and intensive care.

Conclusions

It is essential that any strategy that aims to curb the spread of AMR integrates multidimensional behaviours in clinical care and community settings. Globally, several behaviour-change interventions have been implemented, along with considerable investment to combat AMR. However, most of the evidence on effectiveness has been from high-income settings and a considerable gap in evidence about effective behaviour change interventions to address inappropriate use of antibiotics in LMICs, where AMR is growing at an alarming rate, is evident.⁷

In this JAC-AMR series, behaviour change determinants, interventions and qualitative assessments for improved stewardship programmes in various settings are reviewed. Notably, we identify qualitative knowledge gaps and opportunities for improvement that may inform policy agendas in AMR and promote further qualitative research in this field. In addition, the series highlights a call and commitment by JAC-AMR to strengthen and expand qualitative research efforts to improve the impact of antimicrobial stewardship.

Transparency declarations

None to declare.

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