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The role of Qualitative research in Oral and Maxillofacial Surgery

Abstract

Oral and Maxillofacial research has utilised predominantly quantitative research approaches and qualitative methodologies have been applied with very narrow scope. Although qualitative surgical research is increasing in popularity there is a lack of patient voice within extant research and important aspects of patients' experiences including preparation, perceptions of well-being and functional outcomes are potentially overlooked. This provides researchers with significant opportunities to devise approaches that expand our understanding of the social contexts surrounding surgical interventions and associated outcomes and to develop better-informed approaches to research and practice. Reflecting on a novel research project involving OMFS patients this paper seeks to outline some distinct advantages of qualitative research based on researcher reflections. Firstly, we contend that understanding patients as collaborators within the research process helps to establish a research design that reflects the context and complexities of the phenomenon under investigation and increases the precision of the concepts being addressed. Secondly, interactive group-based data collection approaches create a space in which patients are able to explore aspects relating to OMFS. Thirdly, we suggest that patient interaction optimizes the quality of data by providing participants with the opportunity to engage in conversation with those who understand the treatment processes. The final advantage concerns the intentional involvement of patients within the data analysis phase. We contend that interactive approaches to data collection and analysis where data are collected, analysed, compared and refined as new data are acquired helps to develop a conceptual explanation for the phenomenon in question that is both significant and relevant to the setting being studied. We conclude with recommendations for future research.

Key words:

Oral and maxillofacial surgery, qualitative research, quantitative research, outcomes.

Introduction

Qualitative research is the systematic collection, analysis and interpretation of non-numerical data to establish detailed and holistic views of social phenomena from the viewpoint of individuals and groups that experience them (1). Qualitative approaches in health research focus on context, concepts, values, opinions and experiences which allow researchers to better incorporate and explore patients' perspectives and experiences into research designs and processes, engage people with diverse viewpoints and build collaborative relationships with those participating within the research (2-4). Broadly speaking, qualitative research can be categorized into several traditions including narrative research, phenomenology, grounded theory, ethnographic studies, and case studies which provide for an extensive number of qualitative designs (5,6). The selection of research method is informed by the research questions being addressed, the research setting, the level of researchers' training and experience, and practical issue (7,8). Within the field of healthcare, qualitative studies are commonly used to describe experiences, environments, and relationships, including issues which are difficult to explore using quantitative methods (9), and have been used to explore a range of aspects including quality of services, and patient experience and adherence to treatment (10,11). The exploratory and often iterative nature of qualitative research (12) has significant value when generating new ideas for future research, whether through qualitative or quantitative research designs, or mixed methods approaches.

Oral and Maxillofacial research has utilised predominantly quantitative research approaches and qualitative methodologies have been applied with very narrow scope. An assessment of recent publications over a 12-month period (January to December, 2019) from three leading Oral and Maxillofacial Surgery (OMFS) journals from Europe, UK and North America show a weighting towards publications describing quantitative data. Seven of the 10 studies identified deploy quantitative approaches to investigate issues of morbidity and mortality (13), treatment effects on physical functioning (14) associations between oral and maxillofacial conditions and patient characteristics (15, 16), and the efficacy of surgical procedures (17-18). Whilst not dismissing the theoretical and practical value this research creates, the lack of patient voice is notable and fails to address, for example, issues including patient's preparation, general and specific perceptions, satisfaction, coping ability, well-being and functional outcomes (20).

Even in two studies that describe perception-based data this is limited to the experiences of professionals via online survey methods (21,22). Only one study deployed a purely qualitative research design in which Visram and colleagues (23) report on issues affecting quality of life (QoL) of adult patients with craniofacial anomalies, applying a framework method to analyse data acquired through individual patient interviews. This approach is popular in medical and health research in which a thematic approach to the interrogation of data is utilised to identify commonalities, differences and relationships so as to establish descriptive explanations for what is identified (24). However, the range of methodologies and scope of research topics is presently limited and there are significant opportunities to devise approaches that expand our understanding of the social contexts surrounding health outcomes (11). This is important aspect of effective public and patient involvement whereby the exploration of contexts, concepts, values and opinions helps to maintain the primacy of patient experience in decision making process and patient care. This paper briefly introduces a novel research project involving OMFS patients before out-lining some distinct advantages of qualitative research.

Reflections on the application of a novel research methodology

As described elsewhere (25), a Social Return on Investment (SROI) methodology was devised in order to investigate the wider social outcomes associated with orthognathic treatment for post-operative patients. Central to SROI is the concept of social value which is concerned with evidencing and understanding the nature of impacts or changes in ways that are relevant to the people or organizations that experience or contribute to it (26). A theory of change describes how change happens in the short, medium and long term in order to achieve an intended impact or outcome of an intervention. In the present research, involving the recipients or beneficiaries of interventions early in the research process to develop a theory of change provided a means of establishing a more complete picture of intervention processes and outcomes and allows for the exploration of intended or anticipated changes. This entails generating theory from patients' experiences which subsequently informs the development, selection and administration of measures that assess changes over time across multiple social-ecological domains. Data is used to refine the theory of change and also the delivery of the intervention in 'real time' as the research progresses via an iterative approach to data collection and analysis. The research process seeks the intentional involvement of patients and in the example discussed here led to the development of a theory of change via a focus group and interview data, and other written material that identified a number of functional and mental health outcomes including improved diction and increased self-esteem.

Patient involvement

The first advantage of the qualitative approach outlined above concerns the nature of patient involvement in research and service design. Rather than identifying patients as mere subjects, those participating in the research were considered collaborators in that their experiences and insights into the phenomenon under investigation were considered principle sources of information. This information was used from an early stage to determine the scope of the research strategy with respect to what should be assessed and how this could best be achieved. Resonating strongly with the notion of participatory and inclusive public and patient involvement, patients were able to directly influence the scope of issues explored as the research evolved through the sharing of issues that were relevant and important to them. This established a basis for the credibility and trustworthiness of the research and allowed the researchers to be led by the data rather than by pre-determined or pre-conceived ideas about what was going on. For example, in our research we observed a clear emphasis placed on mental wellbeing including resilience and vitality that had not previously been identified. This increases the precision of the concepts being addressed because they are identified following data collection rather than before it. Involving patients in this way maintains the relevance and significance of the patient voice in the research process and subsequent decisions concerning treatment and care.

Participant interaction

Secondly, from a participatory perspective the participants were able to engage in a group-based collection process that intentionally sought interaction between patients as a means of exploring treatment experiences and identifying salient outcomes. Group participatory methods can provide a more comprehensive understanding of patient-identified outcomes than individual interviews (27). In the example provided this entailed a group discussion led by two experienced qualitative researchers using a brief list of questions to guide discussions in addition to individual paper templates that each participant used to record their experiences and perceived outcomes. We observed that this novel opportunity provided an incidental therapeutic benefit in which patients exercised a desire to openly discuss their experiences with those who fully appreciated OMFS treatment in a way that had not previously been possible. Patients were therefore able to derive personal advantage which served to empower them within the research process, providing space and time to make sense of their experiences. We suggest that this increases the ethical credibility of research by establishing trust between participants, and between participants and researchers through genuine participatory involvement.

Data Richness

Thirdly, we suggest that patient interaction optimizes the quality of data by providing an opportunity to share and compare stories in a way that minimizes the role of the researchers and the potential for artificial or predetermined responses. Group-based qualitative research provides participants with the opportunity to discuss with others what it is that they feel is relevant and important, and in doing so can reveal greater insights into the contexts and conditions. In the example provided, participants discussed a range of individual and contextual factors that expanded our understanding of the complexities of their lives and the interactions between these and the treatment process. We consider that it would have been difficult to acquire this data through individual interviews alone, where the opportunity to engage with others with an intimate understanding of the treatment process would have been limited. Qualitative research in OMFS provides scope to use group and individual data collection approaches that emphasises the significance of lived experience and enables researchers to draw on the relative benefits of each approach within a dynamic research strategy. This could serve to encourage greater use of qualitative research approaches to explore aspects of patient care and subsequent decisions concerning clinical practice.

Data analysis

Fourthly, the intentional involvement of patients was maintained within the data analysis phase via an iterative approach to data collection and analysis. Fundamental to the theory-generating approach with which the methodology was concerned was the systematic interrogation of qualitative data via a process of constant comparison (28). This is a process in which data are collected, analysed, compared and refined as new data are acquired after each data collection point. In this repetitive approach, the collection of data was deliberately organised within which the researcher returned to the field after analyzing data from previous data collection episodes. This process helped to develop a conceptual explanation for the phenomenon in question that was both significant and relevant to the setting being studied. In the present study the units of analysis were data codes derived through the intensive analysis of transcribed and written data which unpacked participant experiences in detail. This process assisted in the establishing of the theory of change that articulated the experiences, conditions and outcomes associated with OMFS.

NVivo 12 (29), a software package which facilitates the storage and analysis of qualitative data including audio recordings and written material was used throughout the study. The advantage of this software is that it assists researchers to manage and organize data securely and efficiently, which in turn increases the ability to access large volumes of complex data for analyses. In the present study this data included audio recordings taken from focus groups and individual interviews, written material from the individual data collection templates completed by each participant and researcher notes taken during and after data collection activities. The software assisted in the triangulation of data derived from the different methods as a means of understanding different representations of patient experiences. This provided a complementary and more complete account of the phenomena and in doing so increased the trustworthiness of the findings. With the ability to input and analyse new data the software provides scope to further enhance the research findings as additional data from other sources including OMFS professionals is acquired as the research progresses.

We contend that this provides significant potential for supporting the ongoing refinement and enhancement of treatment processes in OMFS by providing an opportunity to integrate qualitative evidence in decision making processes to both improve the quality of care and enhance relationships between patients and treatment specialists (30). With a focus on exploring the interactions and consequences of interactions between patients and their surroundings research approaches such as the one discussed here can help to locate patient experience in a broader framework that includes individual decision making, treatment processes, practices and the wider community. Exploring and presenting the experiences and perceptions of patients in a way that emphasizes diverse socio-political dimensions helps maintain health as a resource for everyday life which extends beyond physical capacities. In terms of changing practices, using qualitative approaches that accommodate the complexity of health outcomes associated with OMFS can increase the sensitivity of research to develop new insights that provide benefits for patients and professionals.

Conclusion

The example provided here represents only one research approach and whilst we have sought to demonstrate the benefits of qualitative approaches it is recognised that researchers are faced with a number of issues. The choice of research approach influences a number of important decisions including sampling, data collection and data analysis, all of which need careful consideration and planning. This is demanding in terms of the experience and expertise required to conduct high quality research. Aside from concerns with smaller sample sizes for those more accustomed to larger scale quantitative research designs there is also the danger of partial data, leading to a lack of trustworthiness in the results. Furthermore, researchers should be open to the possibility of exploring and analyzing the interactive processes in group-based data collection, the therapeutic effects of these interactions, and conscious of patients' abilities to formulate answers to the interview questions. It is important to ensure that participant recruitment is not only ethical but that the interactive dynamics are carefully managed in order to maximise the quality of interaction and discussion.

In practice, qualitative approaches have the potential to provide researchers with greater scope to explore phenomena relating to OMFS surgery and inform decision making and patient care through the investigation of patient and practitioner experiences, attitudes and opinions. Participatory approaches provide an important mechanism both for devising research approaches and approaches to clinical practice that reflect the needs and preferences of those at which they are targeted. Greater and more sophisticated use of qualitative approaches may not only support the exploration of previously unexplored research areas and inform financial and resource decisions, but help to normalize the involvement of the public, patients and their communities in research processes.

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References

1. Pope C, van Royen P, Baker R. Qualitative methods in research on healthcare quality. *BMJ Qual Saf.* 2002;11:148-152.
2. Guest G, Namey EE, Marilyn L. Mitchell. *Collecting Qualitative Data: A Field Manual for Applied Research*. London: Sage; 2013.

3. Rolfe DE, Ramsden VR, Banner D, Graham ID. Using qualitative Health Research methods to improve patient and public involvement and engagement in research. *Res Involv Engagem*. 2018;13;4:49. Available from: doi: 10.1186/s40900-018-0129-8. PMID: 30564459.
4. Sparkes AC, Smith B. *Qualitative Research Methods in Sport, Exercise and Health: From Process to Product.* London: Routledge; 2013.
5. Rolfe D.E, Ramsden V.R, Banner D, Graham I.D. Using qualitative Health Research methods to improve patient and public involvement and engagement in research. *Res Involv Engagem*. 2018; 13;4:49. Available from: doi: 10.1186/s40900-018-0129-8
6. Creswell, JW. *Qualitative inquiry and research design: choosing among five approaches*. 4th ed. Thousand Oaks: Sage; 2012.
7. Creswell JW, Hanson WE, Clark Plano VL, Morales A. Qualitative Research Designs: Selection and Implementation. *Couns Psychol*. 2007;35(2):236-264.
8. Pope C, van Royen P, Baker R. Qualitative methods in research on healthcare quality. *Qual Saf Health Care*. 2002;11(2):148-52.
9. Peditto K. Reporting Qualitative Research: Standards, Challenges, and Implications for Health Design. *HERD*. 2018;11(2):16-19. Available from: doi:10.1177/1937586718772615
10. Gullick JG, West SH. Building research capacity and productivity among advanced practice nurses: an evaluation of the Community of Practice model. *J Adv Nurs*. 2016;72(3): 605-19. Available from: doi: 10.1111/jan.12850.
11. Maragh-Bass AC, Appelson JR, Changoor NR, Austin Davis W, Haider AH, Morris, MA. Prioritizing qualitative research in surgery: A synthesis and analysis of publication trends. *Surg*. 2016; 60(6); 1447-1455. Available from: https://doi.org/10.1016/j.surg.2016.06.026.
12. Pope C, Ziebland S, Mays N. Analysing qualitative data. *BMJ.* 2000;320:14 Available from: doi:10.1136/bmj.320.7227.114.
13. Lahtinen S, Koivunen P, Ala-Kokko T, Kaarela O, Ohtonen P, Laurila P, et al. Short- and long-term mortality and causes of death after reconstruction of cancers of the head and neck

with free flaps. *Br J Oral Maxillofac Surg*. 2019;57(1):21-28. Available from: doi: 10.1016/j.bjoms.2018.12.004.

14. Park JH, Kim HS, Choi SH, Jung YS, Jung HD. Changes in position of the hyoid bone and volume of the pharyngeal airway after mandibular setback: three-dimensional analysis. *Br J Oral Maxillofac Surg*. 2019;57(1):29-35. Available from: doi: 10.1016/j.bjoms.2018.12.003.
15. Edetanlen EB, Saheeb BD. Otitis media with effusion in Nigerian children with cleft palate: incidence and risk factors. *Br J Oral Maxillofac Surg*. 2019;57(1):36-40. Available from: doi: 10.1016/j.bjoms.2018.11.015.
16. Keskinruzgar A, Yapici Yavuz G, Koparal M, Cag I, Utkun M, Gedik E. Evaluation of bio-chemical variables in patients with trigeminal neuralgia. *Br J Oral Maxillofac Surg*. 2019;57(1):72-75. Available from: doi: 10.1016/j.bjoms.2018.11.012.
17. Jinno Y, Jimbo R, Hjalmarsson J, Johansson K, Stavropoulos A, Becktor JP. Impact of surface contamination of implants with saliva during placement in augmented bone defects in sheep calvaria. *Br J Oral Maxillofac Surg*. 2019;57(1):41-46. Available from: doi: 10.1016/j.bjoms.2018.11.014.
18. Yazan M, Kocyigit ID, Atil F, Tekin U, Gonen ZB, Onder ME. Effect of hyaluronic acid on the osseointegration of dental implants. *Br J Oral Maxillofac Surg*. 2019;57(1):53-57. Available from: doi: 10.1016/j.bjoms.2018.08.014.
19. Antony PG, Sebastian A, Annapoorani D, Varghese KG, Mohan S, Jayakumar N, Dominic S, John B. Comparison of clinical outcomes of treatment of dysfunction of the temporomandibular joint between conventional and ultrasound-guided arthrocentesis. *Br J Oral Maxillofac Surg*. 2019;57(1):62-66. Available from: doi: 10.1016/j.bjoms.2018.11.007.
20. Meena, JK, Jakhetiya A. Pandey A. Qualitative Research in Surgical Disciplines: Need and Scope. *Indian J Surg*. 2021;83, 3–8 (2021). Available from: https://doi.org/10.1007/s12262-020-02280-1

21. Fitzgerald R, Smyth A. Velopharyngeal insufficiency after maxillary advancement in patients with cleft palate - a survey of risk assessment in the United Kingdom and Ireland. *Br J Oral Maxillofac Surg*. 2019;57(1):58-61. Available from: doi: 10.1016/j.bjoms.2018.11.006.
22. Ahmed N, McVicar IH, Mitchell DA. Simulation-based training in maxillofacial surgery: are we going to be left behind? *Br J Oral Maxillofac Surg*. 2019;57(1):67-71. doi: 10.1016/j.bjoms.2018.11.009.
23. Visram SM, Gill D, Shute JT, Cunningham SJ. Qualitative study to identify issues affecting quality of life in adults with craniofacial anomalies. *Br J Oral Maxillofac Surg*. 2019;57(1):47-52. Available from: doi: 10.1016/j.bjoms.2018.06.011.
24. Gale NK, Heath G., Cameron E, Rashid S, Redwood S. Using the framework method for the analysis of qualitative data in multi-disciplinary health research. *BMC Med Res Methodol.* 2013;13,117. Available from: https://doi.org/10.1186/1471-2288-13-117
25. Baker C, Courtney P, Knepil G. Evaluating societal outcomes of orthognathic surgery: an innovative application of the Social Return on Investment methodology to patients after orthognathic treatment. *Br J Oral Maxillofac Surg*. 2019;57(2):145-150. Available from: doi: 10.1016/j.bjoms.2018.12.011.
26. Aeron-Thomas D, Nicholls J, Forster S, Westall A. *Social Return on Investment: Valuing what matters*. London: New Economics Foundation; 2004.
27. Rising KL., LaNoue M, Gentsch AT. et al. The power of the group: comparison of interviews and group concept mapping for identifying patient-important outcomes of care. *BMC Med Res Methodol*. 2019;19(7). Available from: https://doi.org/10.1186/s12874-018-0656-x
28. Braun V, Clarke V. Thematic analysis. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), A*PA handbook of research methods in psychology,* Vol. 2. *Research designs: Quantitative, qualitative, neuropsychological, and biological* (pp. 57–71). American Psychological Association; 2012.
29. QSR International Pty Ltd. *NVivo qualitative data analysis software, Version 12*. 2018.

30. Meena JK, Jakhetiya A, Pandey A. Qualitative Research in Surgical Disciplines: Need and Scope. *Indian J Surg*. 2021;83,3–8. Available from: https://doi.org/10.1007/s12262-020-02280-1.