Parental decision-making in uptake of the MMR vaccination: a systematic review of qualitative literature

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ABSTRACT

Background Controversy has surrounded MMR vaccination in the aftermath of Wakefield’s 1998 paper suggesting links between MMR and the development of pervasive developmental disorder in children. The paper sparked off media debate and contributed to a lack of parental trust in health-care providers and reduction in MMR uptake. This review aims to identify and evaluate research on the subject, with a view to present the reasons behind, and influences on parental decision-making in relation to MMR.

Methods Systematic search strategy identified 14 relevant papers on which thematic analysis was performed.

Results Themes identified were categorized as follows: perceptions of risk; roles and responsibility; experience and knowledge. There were limited changes in parental decision-making factors over the time period despite an increase in uptake. Many studies fail to differentiate between accepters and rejecters, making it difficult to draw out clear conclusions.

Conclusion Policymakers need to adapt information provided to address these concerns. Future research should focus more on distinguishing between accepters and rejecters to determine which factors can alter outcome.

Keywords decision making, MMR, parents, qualitative systematic review

Introduction and objectives

Andrew Wakefield’s article was published in The Lancet in 1998, suggesting links between MMR vaccination (hereafter be referred to as ‘MMR’) and autism, when given in infancy.¹ Although now retracted with un-replicated findings,² this sparked huge media coverage³ contributing to changes in parental attitudes towards MMR and a loss of trust in health-care services,⁴ resulting in a decline in uptake. The number of children in Scotland vaccinated by their second birthday fell from almost 95% in 1997 to 87% in 2001.⁵ This significant dip in uptake led to outbreaks years after the original controversy,⁶ due to a loss of herd immunity (reduction in outbreaks of disease in a community even in the unimmunized, with enough members of population immunized and unable to spread disease⁷), with increased numbers of children at risk of potential long-term debilitation and even fatality from measles, mumps and rubella.⁸ Although there has been a gradual increase since 2001, MMR uptake only reached its pre-Wakefield rate by the end of 2012 (http://www.isdscotland.org/Health-Topics/Child-Health/Publications/2013-03-22/2013-03-22-Immunisation-Report.pdf), indicating that the impact of this scare on parental decision-making was long lasting and still warrants attention.

This review reports and appraises findings from research on parental decisions relating to MMR uptake/refusal. In contrast to other reviews relevant to this topic, it focuses specifically on MMR rather than a more general review of research on childhood vaccinations.⁹ Specifically, it also examines the differences between the factors shaping the decisions of parents who accepted and those who rejected the MMR for their child. It also questions whether a change in the factors shaping parental decision-making in MMR uptake in the years following the Wakefield controversy can be identified in the literature.
Methods

The literature search for the review was conducted in articles from 28 February 1998 (publication date of Wakefield’s paper) until 2013. Initially, a broad search was undertaken using Google Scholar, to elicit the literature available. In relevant papers returned, the following Medical Subject Heading (MeSH) terms were repeatedly present: ‘decision-making’, ‘health knowledge, attitudes and practice’, ‘choice behaviour’ with ‘measles–mumps–rubella vaccination’. These were entered into three major medical and social health literature databases (Medline, CINAHL and Web of Knowledge). The references of relevant literature returned were reviewed and MeSH terms compiled until it was felt that the search encompassed all relevant literature (Fig. 1).

The search returned 1697 papers, of which 227 were considered initially relevant based on specific mention of MMR in the title or abstract. Inclusion and exclusion criteria were developed to ensure that the search enabled the fulfilment of the review aims,11 which can be seen in Fig. 1. The abstracts of the papers were examined; when the abstract was not descriptive enough or no abstract was available, the full text was read. Two hundred and ten papers not fulfilling the inclusion criteria were excluded. Where more than one paper utilized the same primary data, the original article was used, removing 3 further papers leaving 14 papers to be included in the review. Although quantitative or mixed method research was not excluded, the papers included in the review were all based on qualitative research. This is unsurprising given the focus of the review on understanding parental decision-making, for which a qualitative methodology is appropriate.9

A thematic synthesis of the papers was undertaken.12 The results sections of the papers were read several times to identify reasons given for parental MMR decisions. These were then grouped into themes that were then explored in greater depth: perceptions of risk; roles and responsibility; experience and knowledge. The papers were then examined in chronological order (based on date published), to identify any changes in themes over the period studied.

Adopting the Atkins’ approach12 for appraising qualitative research in a review, the studies were read and the CASP (Critical Appraisal Skills Programme) criteria10 (Table 1) were applied. Each paper was given a score of /10 based on their fulfilment of each of the criteria (1 point for fulfilling each of the 10 criteria).

Results

The methodology of the papers was well documented and rigorous. Details on the methodological appraisal are provided in Table 2. Common approaches were used in recruitment, data collection and analysis, leading to study groups from wide-ranging ethnic and socio-economic backgrounds. Six studies used individual interviews with parents, five used focus groups’ interviews, one used a mixture of the two methods and one carried out an analysis of existing Internet forum discussions.23 All of the studies failed to consistently distinguish between whether parents had immunized (acceptors) or had not (rejecters), leading to difficulties in drawing clear conclusions about what factors directly affected decision-making outcomes. In this section, we indicate where parents were categorized into rejecter/accepter and where the more generic category of ‘parent’ was adopted.

Perceptions of risk: MMR

Parents expressed general concerns about the safety of MMR in all of the studies reviewed,4,14– 26 with the majority of them directly attributing this to the highly publicized controversy surrounding the MMR20 and its potential adverse effects.4,14– 18,20,21,23– 26 The papers described many reasons why acceptors and rejecters believed MMR to be unsafe, including vaccine ingredients,14,26 links with autism16 and immune stress.14 In weighing up risks and benefits, a number of factors relating to parents’ perceptions of risk were highlighted:

(i) Side-effects: Rejecters saw the side-effects of MMR as so catastrophic that, despite their rarity, vaccination was perceived to be too risky.15– 18

(ii) Treatability: One study highlighted that accepters and rejecters saw measles/mumps/rubella as treatable, making immunization seem less essential.26

(iii) Long-term efficacy: Accepters and rejecters expressed doubts over MMR’s long-term efficacy in preventing disease.14,23,26

(iv) Immunity: Several of the studies suggested that parents viewed the body’s natural immunity to be sufficient, a reason that was then part of the explanation for rejecting MMR as an unnecessary risk. Accepters and rejecters expressed the view that natural immunity should be valued19,22,26 and promoted through diet and mild infection,14,17 and rejecters saw disease as inherently beneficial for the development of a healthy immune system.14

(v) Age of the child: Age and associated social changes were identified as influencing factors in the timing of immunization. Accepters reportedly often delayed vaccinating until after the most prevalent onset age of autism.4,14,18,26 Starting school was described by parents as a risk factor for contracting disease, leading to increased uptake at that stage of life.4,7,24 Studies
detailed a feeling among rejecters that the target group is too young given that their immune systems are not fully developed at that age.\textsuperscript{15,27}

(vi) **Targeted versus herd immunization:** Several papers described parents’ resentment of a ‘one size fits all’\textsuperscript{15,23,27} policy. Rejecters believed their children to be less at risk of
contracting disease if they were healthy and so were less inclined to vaccinate. Some children were considered to be more vulnerable than others, including those with numerous health problems. Accepters believed vaccination was more important for such children due to increased disease risk. However, one study found that rejecters expressed the opposite view that these children could not cope with vaccines. What induced the difference in opinion following an identical stimulus was unexplored. The perceived need for targeted immunization also related to the potential impact of contracting disease. For example, boys were considered by rejecters to be a high risk group for mumps vaccination. The papers were limited in that they did not account for why accepters immunized their child despite these concerns. All of these factors were repeatedly commented on throughout the time period examined.

Roles and responsibility

The theme of roles and responsibility, both parental and relating to health professionals and policy makers, has an important influence on parental decision-making.

(i) Parental: Studies indicated that parents felt very responsible for the outcomes of their decision. Rejecters expressed concerns about the judgement of parents and health-care professionals relating to their decision not to immunize especially in the event that their child did contract measles/mumps/rubella. This was borne out in some papers reporting acceptors’ views that rejecters were ‘irresponsible’ for not vaccinating their children and so subjecting the whole population to a loss of herd immunity. Two papers suggested that accepters noted achievement of herd immunity, indicating a wider social responsibility, as an important incentive for vaccination.

(ii) Health-care professionals and policymakers: Concerns about the trustworthiness and reliability of health-care professionals and policymakers were raised in many of the studies. A desire from accepters and rejecters to place trust in health-care professionals was described. However, parental suspicions over financial incentives for general practitioners conversely lead to reduced trust in these professionals. Many of the papers reported negativity towards the government, specifically a lack of trust in the way the Department of Health (DOH) had handled the MMR controversy. Policy changes and conflicting advice were described as enhancing beliefs that the government itself was uncertain about MMR crisis. The then Prime Minister Tony Blair’s unwillingness to confirm his son’s immunization status was mentioned in a number of earlier studies and in one study as late as 2012. Parents described wanting to be able to make their own decisions without pressure from the government or health professionals but at the same time valued the input of health professionals; all parents were stated as wanting more time to discuss issues with health professionals.

Experience and knowledge about the MMR vaccine

Parents’ experience relating to, and knowledge of, MMR was identified across the papers as a significant theme. Most papers proposed that limited personal experience of measles/mumps/rubella led parents to believe they were not serious diseases and so to reject vaccines, whereas personal experiences of the parent of severe consequences of disease, for example serious eyesight problems following childhood measles infection, made parents more likely to immunize. Personal experience of autism was described as a powerful influence on decision-making as parents deemed this one of the worst possible outcomes. However, one paper suggested personal experience alone cannot predict uptake since even if parents have direct experience of the diseases being dangerous, side-effects of vaccination may be considered worse.

Studies suggested a lack of knowledge among parents about vaccine risks, inducing ‘non-specific’ fears over adverse effects and a lack of awareness of the risks of not vaccinating. Multiple papers reported parents’ concerns about a lack of high-quality, impartial information, with available information described as ‘dull’ and ‘uninformative’, bearing little relation to real life. Accepters and rejecters complained of a lack of information prior to MMR appointments and a lack of information about singles vaccines.

There was a disagreement among papers regarding the most effective means of information provision; one study suggested that parents wanted more scientific research, with another

Table 1  CASP criteria

<p>| 1. Was there a clear statement of the aims of the research? |
| 2. Is the qualitative methodology appropriate? |
| 3. Was the research design appropriate to address the aims of the research? |
| 4. Was the recruitment strategy appropriate to the aims of the research? |
| 5. Was the data collected in a way that addressed the research issue? |
| 6. Has the relationship between researcher and participants been adequately considered? |
| 7. Have ethical considerations been taken into consideration? |
| 8. Was the data analysis sufficiently rigorous? |
| 9. Is there a clear statement of findings? |
| 10. How valuable is the research? |</p>
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<tr>
<th>Year</th>
<th>Aim of the research</th>
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<th>Ethical considerations</th>
<th>Data analysis process</th>
<th>Main findings</th>
<th>Score given in critical appraisal (10)</th>
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<tr>
<td>2001</td>
<td>To investigate what influences parents' decisions on whether to accept or refuse the primary MMR immunization and the impact of the recent controversy over its safety</td>
<td>Qualitative</td>
<td>Recruitment strategy largely not described</td>
<td>'48 parents, whose youngest child was between 14 months and 3 years old' in Avon and Gloucestershire</td>
<td>Focus groups</td>
<td>Approval obtained</td>
<td>Modified grounded theory approach</td>
<td>More fear over MMR than other vaccines, with many acceptors simply complying rather than making an informed decision. Influenced by the media but also by personal preconceptions which may remain unchanged even after logical risk–benefit analysis. Lack of trust in health professionals due to financial incentives and resentment of policymakers due to lack of vaccine choice. More concern over own children's health than social obligation. Side-effects from disease viewed as more acceptable then side-effects induced by vaccine. More impartial information required.</td>
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<td>2003</td>
<td>To assess the vaccine risk perception of parents who have their children immunized, as opposed to those who do not</td>
<td>Qualitative</td>
<td>Convenience sample</td>
<td>Parents in two nurseries (one rural, one urban). All children fully immunized</td>
<td>In-depth interviews</td>
<td>Unmentioned</td>
<td>Interpretive phenomenological analysis</td>
<td>Accepters and rejecters fear MMR vaccine, due to a feeling of 'dread' about potential side-effect of autism. This is not equally balanced against the benefits of vaccination. Parents think health professionals and policymakers do not value the individual and are just trying to meet targets. More impartial and informative information required.</td>
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<td>2003</td>
<td>To explore the knowledge, attitudes and concerns about immunization, of parents whose children have not completed the full recommended course</td>
<td>Mixed</td>
<td>Children identified from child health database</td>
<td>Children born between 1 January 1999 and 15 February 1999 in Hackney who had not received full MMR course</td>
<td>Questionnaires followed by interviews</td>
<td>Approval obtained</td>
<td>Interview analysis methods not detailed</td>
<td>Parents perceive MMR to be more dangerous than other childhood vaccines. There are a number of fears about side-effects, especially risk of autism. Personally knowing families with children who have autism, increases the worry of it occurring, information given by health professionals seen as inadequate and uninformative. Lack of trust in policymakers especially with regards to the financial drives behind the scheme as opposed to health benefits.</td>
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<td>2004</td>
<td>To explore parents' accounts of decision-making relating to the MMR vaccine controversy, identifying uptake determinants and education needs</td>
<td>Qualitative</td>
<td>Parents of all children born within 1 year, ending 31 March 1988 were sent letters by their GPs, inviting them to contact the team if they were prepared to participate</td>
<td>69 parents of children aged 4–5. Primary care practitioners, managers and immunization coordinators in 5 GP practices in Leeds</td>
<td>Semi-structured interviews</td>
<td>Approval obtained</td>
<td>'Framework approach'</td>
<td>Main fear of parents is autism. Many parents felt their children would benefit both physiologically and psychologically from disease. Parents felt more comfortable about vaccination if they deemed their child not to be at risk of autism, e.g. if they did not know anyone whose child had autism. Information from health professionals was valued, but lack of trust due to financial incentives. Current information leaflets are seen as uninteresting, with anecdotal evidence deemed more engaging.</td>
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<td>Authors</td>
<td>Year</td>
<td>Methodology</td>
<td>Data Collection</td>
<td>Sample Size</td>
<td>Analysis Method</td>
<td>Findings</td>
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<td>Petts and Niemeyer</td>
<td>2004</td>
<td>Qualitative</td>
<td>'On-street' recruitment</td>
<td>64 participants. Parents (89% mothers). Variety of ethnic and socio-economic backgrounds. Varying MMR experiences</td>
<td>Two-phase interactive discussion groups</td>
<td>Unmentioned Analytic deduction Variations in prior knowledge between socio-economic groups. This may be due to a lack of official, impartial and detailed information in circulation. Parents want to have more time to discuss decision-making with GPs. There is seen to be a lack of info about single vaccines. Trust in GPs and political parties is highly changeable based on stance and actions. Department of Health seen to be most trustworthy information source. Parents are far more worried about the possibility of autism than potential consequences of disease.</td>
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<td>Poltonak et al.</td>
<td>2005</td>
<td>Qualitative</td>
<td>Opportunistic recruitment from the 'study group' category</td>
<td>GPs and practice nurses and Health visitors from practices in Brighton. 23 mothers with child under age 3, from 5 carer and toddler groups</td>
<td>Interviews of health professionals and informal discussions with parents at carer toddler groups</td>
<td>Unmentioned Thematic analysis Parents rely on lay networks and personal experience for information due to a lack of good-quality outside information. Experiences of mild disease episodes may lead to MMR vaccination being seen as less important. Parents feel personal research is important but needs direction with this. Trust in GPs is variable, but trust in government is not seen as important. Fears over the perceived vulnerability of their child are important. Anecdotal stories of severe vaccine side-effects even without evidence may lead to rejection.</td>
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<td>Casiday</td>
<td>2006</td>
<td>Qualitative</td>
<td>Recruited through carer and toddler groups, community centres and nurseries. Purposefully recruited to have varying MMR decisions</td>
<td>87 parents of 'young children’ in and near Durham</td>
<td>Semi-structured focus groups and interviews</td>
<td>Approval obtained Thematic analysis Parents need strategies to deal with risk assessment in making decisions such as MMR. Desire to share decision with an expert in the form of their GP but lack of trust in government and so GPs. MMR target group felt to be too young and vulnerable. Discrepancies in how vulnerable parents think their children are to contracting disease based on exposure to other ill children and natural ‘immune boosting’ measures.</td>
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<td>Hilton et al.</td>
<td>2007</td>
<td>Qualitative</td>
<td>Internet searches were used to identify autism and carer support groups from whom parents were recruited</td>
<td>38 parents of children under 14 years old with autism, whose autism was diagnosed after Wakefield's paper was published.</td>
<td>Focus groups Approval obtained Constant comparative method of thematic analysis Approaches MMR issues from the perspective of parents with autistic children. Highlights the self-blame, guilt and anger that they feel due to belief in link between MMR and their children's condition. Health professionals seen as insensitive so parents develop a lack of trust in them. Overarching belief in the fact that their child was too vulnerable for vaccination and that vaccination should have been delayed among the parents.</td>
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<td>Hilton et al.</td>
<td>2007</td>
<td>Qualitative</td>
<td>Purposive sampling to gain a variety of MMR decision-making outcomes</td>
<td>72 parents in Central Scotland. Wide range of socio-economic backgrounds and MMR vaccine decisions</td>
<td>Focus groups Approval obtained Constant comparative method of thematic analysis Parental debate over what information sources to trust examined. Anecdotal evidence from other parents is seen as more powerful than scientific evidence. Lack of good unbiased information. Parents want to put their trust in GPs but prevented from doing so by lack of trust in politicians and the financial incentives and motives they set for GPs. Opinions of the roles of Wakefield and the media are mixed.</td>
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<td>2007</td>
<td>To provide ‘analysis of the discourses of one set of actors that remain under-researched: organized vaccine resisters’</td>
<td>Qualitative</td>
<td>19 anti-vaccine groups in UK identified and recruited by letter. 10 agreed to inclusion</td>
<td>10 leaders/founders of UK vaccine-resistance action groups.</td>
<td>Interviews</td>
<td>Unmentioned</td>
<td>Discourse analysis</td>
<td>By looking specifically at vaccine-critical groups, this paper draws out some of the stronger criticisms of MMR. There is a great emphasis on how certain children may be more vulnerable than others, which leads to resentment of a ‘one size fits all’ system. Parents believe government policy fixates on society as a whole, ignoring the potential harms to individual children. Personal education and learning behind decision-making seem to be as important as the end decision.</td>
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<td>2008</td>
<td>To present findings from UK study of discussions on MMR in online chat forum for parents</td>
<td>Qualitative</td>
<td>Examination of the two largest discussion threads on <a href="http://www.mumsnet.com">www.mumsnet.com</a></td>
<td>Members of <a href="http://www.mumsnet.com">www.mumsnet.com</a></td>
<td>Internet discussion forum</td>
<td>Unmentioned</td>
<td>Thematic analysis using a modified framework approach</td>
<td>Centres on the debate over vaccination being a social obligation and as such not for the good of the individual child. The majority of parents here promote the idea that MMR is for societal gain and say they would judge any parents who did not have their child vaccinated. Beliefs about the importance of immunizing seemed mostly to be based upon personal experience of disease and prior knowledge of the likelihood of disease/dangers of vaccination. Some parents were concerned about social responsibility to maintain herd immunity. But, on the whole, parents seemed to simply be complying with policy rather than actually trusting health professionals or making an informed decision.</td>
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<td>2009</td>
<td>To explore parents’ views on pre-school immunization and to identify possible reasons for lower uptake pre-school than that in the primary course</td>
<td>Qualitative</td>
<td>Recruited from 9 playgroups and pre-schools in three different locations in Southern England</td>
<td>21 parents of children aged 2–5</td>
<td>Semi-structured interviews</td>
<td>Approval obtained</td>
<td>Modified grounded theory approach</td>
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<td>2010</td>
<td>To identify and describe beliefs underpinning parents’ responses to possible MMR uptake interventions</td>
<td>Qualitative</td>
<td>Parents and toddler groups randomly selected from lists on local council websites</td>
<td>28 parents across 5 primary care trust areas</td>
<td>Focus groups</td>
<td>Approval obtained</td>
<td>Thematic analysis</td>
<td>Too much information surrounding MMR leads to confusion. Feelings that health-care professionals do not have the time to clarify information. A lack of personal experience of the diseases means parents are unaware of the dangers of not vaccinating. Trust is placed on anecdotal accounts. Lack of trust in policymakers.</td>
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<td>2012</td>
<td>To obtain an up-to-date, comprehensive and methodologically robust picture of general factors underlying parents’ decision-making about the first dose of MMR</td>
<td>Qualitative</td>
<td>Patients recruited through GP nurses, community groups and online forums. Chain referral increased number of rejecters. Recruitment until thematic saturation</td>
<td>24 mothers with 11 to 36-month-old children in London</td>
<td>Semi-structured interviews</td>
<td>Approval obtained</td>
<td>Thematic analysis</td>
<td>Parents agree Wakefield was rightly discredited, but still worry about MMR. Concerns over vaccine ingredients, efficacy, adverse reactions and immune overload. Fear of judgement from health-care professionals and other parents. Lack of trust in health-care professionals because of financial incentives, but some parents feel agreeing with expert health professionals eases the decision. Lack of personal experiences of the diseases makes MMR less important to some. Lack of high-quality, impartial information to guide decision-making.</td>
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GP, general practitioner.
describing a desire for mixed anecdotal and scientific evidence.\textsuperscript{17} Parents were reported as an important information source.\textsuperscript{18,21,25} Indeed, one paper reported that many parents regard other parents as more useful than official sources of information.\textsuperscript{26} While some parents reported that media coverage was a useful source of information,\textsuperscript{21} other studies found that parents were critical of media coverage as not having a strong scientific basis\textsuperscript{14,18} and considered media sensationalism to be a key factor in the decline in previous confidence in vaccination.\textsuperscript{14,18} There were mixed views reported over Wakefield’s credibility, which altered over time. Earlier papers described trust in Wakefield which altered with time to a more critical view. From 2004 to 2010, there was a widespread agreement that Wakefield was correctly discredited,\textsuperscript{18,21,24} and by 2012, studies reported parental anger at the uncertainty he had caused them.\textsuperscript{26} How this uncertainty related to the validity and reliability of information sources was overcome and its direct relationship to immunization decisions was not identified.

## Discussion

### Main findings of the study

Keeping children healthy is a major concern for parents,\textsuperscript{29} and their health-care decisions often involve an interpretation of the potential risks and benefits of activities, treatments and, in this case, immunization. Lay perceptions of risk are multidimensional, drawing on a wide range of experiences\textsuperscript{30} and sources of knowledge (both expert and lay), and the relationship between perceptions of risk and behaviour is often complex and contingent. The evidence reviewed here indicates that parental perceptions of risk associated with MMR are no exception. Parents had wide-ranging concerns relating to the potential side-effects of vaccination and seemed to be less aware of, or to be less likely to report, the potential negative outcomes of non-immunization. For some parents who rejected the MMR, immunization was regarded as an unnatural process that could negatively impact on the natural development of the immune system within children. This perceived vulnerability of children to intervention may also have been heightened by the young age at which the MMR is undertaken. Parents’ perception of MMR risk and resulting decisions on immunization also illustrate perceptions of risk ‘candidacy’, often noted in studies of lay perceptions of risk.\textsuperscript{27} Parents identified particular groups of children as being more or less at risk, although it is not clear whether this formed part of their decision-making or a rationale for decisions previously made.

In the context of an increasing emphasis on parental responsibility in social and health policy,\textsuperscript{31} research with parents highlights their concerns about the need to be seen by other parents and by health-care professionals, as responsible ‘good’ parents by engaging in advice and guidance.\textsuperscript{32} The studies reviewed noted the worry over the judgement of others and the challenges of making sense of often contradictory information and advice, as a backdrop to the concerns expressed by the parents. The MMR controversy highlighted the challenges that parents face in making health-care decisions when the knowledge presented to them is complex and appears to offer very different messages. Parents expected support from health-care professionals but also expressed reservations about the extent to which they fully trusted the advice they were given.

MMR vaccination has been a high-profile issue, sliding in and out of media attention for a number of years. Therefore, almost all parents have some knowledge of the vaccine and the controversy that surrounds it. Beyond this, however, parents reported a distinct lack of information of the issues around MMR and a resultant limited knowledge of the wider facts. Parents used a number of different information sources, including anecdotal evidence, health-care professionals, the Internet and personal experience to gain information, but there was an overall desire being expressed for a more central source of unbiased information. What parents want to be within this information source and how they want it delivered varies, perhaps suggesting a need for a more individualized approach, moving away from a ‘one size fits all’ policy.\textsuperscript{14,22,26} Personal experiences of parents of either the diseases or the vaccine side-effects were seen to be important in decision-making. Experience of autism was reported as being strongly related to vaccine rejection in parents’ accounts, whereas experience of measles and mumps or their morbidity outcomes was less predictable with some parents reported as both accepting and rejecting on the basis on this experience.

There was a change in parental trust in Wakefield as an information source during the period covered in the review. In earlier papers, some parents were noted to value his research as an information source,\textsuperscript{18,21} but, by 2012, his findings were widely discredited and there was an increasing anger towards him for creating fear among parents.\textsuperscript{26} However, in many other respects, despite an increase in MMR uptake since 2003,\textsuperscript{3} there is a little evidence of change in parental concerns throughout this period. Significantly, given the discrediting of Wakefield’ finding, the association between MMR and the development of autism recorded from papers published in 2001 remains in those published in 2012. This suggests that while more parents have been complying with policy, the same fears remain in their minds. Thus, although uptake rates have recovered, this increase remains precarious, given that parents remain concerned about MMR. It is therefore important that policymakers adequately tackle the reservations parents
continue to have, as described in this review; in making improvements to the information and support offered to parents making immunization decisions.

What is already known on this topic
A previous systematic review has demonstrated that MMR holds specific issues and concerns for parents. Similar decision-making factors as found in this review, such as those relating to vaccine safety and a lack of trust in health-care professionals and policymakers, have been shown in previous reviews. However, when identifying parental concerns, the studies reviewed often failed to differentiate between parents rejecting and those accepting MMR referring to ‘parents’ rather than separating them into decision outcome groups, a fact that was neglected in the analysis of previous reviews.

What this study adds
This review provided a thematic analysis of parental decision-making behind MMR. The review has attempted to examine the differences between acceptors and rejecters and has highlighted where this has not been possible due to a lack of specified reporting in the studies. Previous reviews have stated a need for literature to analyse changes in vaccine decisions over time. This review has compared themes reported across studies carried out since 1998 and has highlighted the consistency in parental concerns throughout this period. This may suggest that high-profile cases may have a lasting impact on parental concerns, but that this may not be directly related to uptake rates.

Limitations of this study
There are limitations to this review relating to the design and focus of the papers reviewed. There are intrinsic challenges with any review of qualitative literature, in that one does not have access to the full set of primary data, making the reviewer reliant on previous authors. In addition, the studies employed different methods of data collection, which in themselves may account for the focus on particular themes. The intention to explore a change over time proved to be challenging given the variation over time in the focus, quality and depth of the papers reviewed. Moreover, the lack of clarity throughout the literature regarding what sets accepters and rejecters apart limits the conclusions drawn. Thus, further research is required to identify the similarities and differences between parents based on their MMR decisions.

References


