Development of a Q-set for a Q-Method Study about Midwives' perspectives of Woman-Centered Care

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Abstract

Objective: To transparently describe the development of a Q-set for a Q-method study about midwives' perspectives of woman-centered care.

Research design: Q-methodology is a relevant study approach to identify key viewpoints that are relevant for practitioners and for educational purposes. The development of a set of statements (Q-sample) is the first phase of this study's methodology, forming the research instrument – and being the focus of this paper.

Methods: Q-set development and construction included four steps: (1) Collections of items, (2) Q sample selection, (3) Formulating the Q statements, (4) Validation of the Q sample. Methods to collect items included a systematic review, a scoping review and personal narratives.

Results: We used scientific literature, Dutch midwifery journals, international governmental and healthcare professional reports and guidelines, practising midwives, midwifery lecturers, media, fiction and art as sources to collect items. A collection of 45 Q-statements was formulated according the Attitude, Social influence & self-Efficacy (ASE) model. The statements were pre-tested among student midwives and pilot-tested by midwifery Master students and two individual midwives, resulting in a final Q-set of 39 statements.

Conclusion: We systematically, thoroughly and transparently developed a valid and robust Q-set. Albeit a time consuming process and granting that the Q-statements might not represent thoughts of midwives in other countries than the Netherlands, we have constructed a concourse based on rich and detailed information that is appropriate for a Q-method study among Dutch midwives about their perspectives of woman-centered care.

Introduction

Woman-centered care is an important focus of midwifery education and the research programme of Rotterdam University of Applied Sciences, Netherlands. This is due to governmental recommendations to improve midwifery care by means of more emphasis on addressing individual woman's health needs, her expectations and her fears throughout the midwifery care period [1]. This recommendation shows a strong association with woman-centered care [2].

Although Dutch midwifery care is guided by a professional standard and a code of practice, it lacks clear guidance about woman-centered care [3,4]. Despite recommendations woman-centered care is by no means regarded as standard care, or accepted as core midwifery practice [5]. Moreover, midwives' subjectivity plays a substantial role in their woman-centered behaviour (*i.e.,* woman-centered care provision) [5]. In order to educate and support (student) midwives to adopt a woman-centered approach in care, it is important to identify key viewpoints of woman-centered care that are recognizable for midwives and relevant for theoretical and practical midwifery education and practice. Q-methodology is an appropriate tool to objectify midwives' subjective mechanisms and thoughts of woman-centered care and to uncover and analyze similarities and differences in their subjective viewpoints [6].

Q-methodology

Q- methodology is a mixed-methods approach where qualitative methods allow participants to express their subjective opinions [7-9].

The quantitative methods of Q-methodology use factor analytic data-reduction and induction to provide insights into opinion formation as well as to generate testable hypotheses. The goal of Q-methodology is, first and foremost, to uncover different patterns of thought and is used to explore the breadth and variety of perspectives of participants who represent different stances on a topic of interest; by having participants rank and sort a series of statements in a continuum of meaningfulness [9]. It is extremely useful for eliciting views on a complex and/ or controversial subject [10] like woman-centered care [5]. Q-methodology assumes that opinions are subjective and can be shared, measured, and compared. The methodology involves three phases: Phase one involves developing a set of statements; phase two requires participants to rank the statements along a continuum of preference; and in phase three the data are analyzed and interpreted [9]. This article focuses on the first phase.

The first phase of a Q-method is to identify a set of interrelated statements about the domain or topic in question, which in this case

is woman-centered care perceived from a practitioner's point of view [7,9]. To define the Q-set, we need a collection of all possible statements that the population of concern can make about the topic at hand the *concourse* [7,9]. As the midwife is regarded as the main care provider of antenatal, intrapartum and postnatal care [4], suggesting she has a key role in utilizing woman-centered care, the midwife was our target population for this study.

Q-methodology has been around for a number of years but has never become a mainstream social research technique. Although originally developed in the field of psychology, it has recently become more popular among researchers in the fields of behavioural and health sciences. Despite this, Q-methodology remains on the margins of social research methods as it has been criticized for its lack of methodological rigour, structure and systematic process [11]. There are debates and concerns about best practices for Q-set development; the limited guidance on constructing a systematic Q-set and measurement its validity [11]. In order to address these issues of debate we systematically and transparently described the development of a Q-set for a Q-method study about midwives' perspectives of woman-centered care.

Methods

The process of our Q-set development and construction included four separate but interrelated steps that took place between July 2015 and May 2016. These steps were: (1) Collections of items; (2) Q-sample selection; (3) Formulating the Q-statements; (4) Validation of the Q-sample. As the concourse (step 1) includes everything that could be expressed about the topic, this is, theoretically infinite. In order to address this systematically and transparently as well as aiming to maximize the value and content of the concourse and to reduce researcher's bias [9], we organized an expert team consisting of (practising) midwives (n = 2), midwifery lecturers/ researchers (n = 4), one researcher with expertise of Q-methodology, consumers of midwifery services (n = 4) and an applied research professor with expertise in self-management and participation in care. We met regularly throughout the process of constructing the concourse in order to verify and increase the representativeness of the sample of items, resulting into the final Q-set [11]. The author guided and monitored the process.

Step 1. Collection of items - concourse

Various sources and methods for constructing a *concourse* have been defined by Q-methodologists, for example (scientific) literature, professional guidelines, interviews, focus groups, participant observation, (social) media, websites and art [9,10]. The material represents existing opinions and arguments, things that representative organisations, professionals and other experts have to say about the topic [9,10]. Our expert team discussed the relevance of potential resources for our concourse. Our selection for sources was related to the aim of the Q-method study (to identify midwives' perspectives of woman-centered care), the study's target population (midwives) and the background and purposes for performing the Q-method study – being education and professional development and care provision (i.e. lifelong learning and practice). In order to better understand the phenomenon of woman-centered care and to accumulate a wide scope of evidence, we took a threefold approach. We decided to carry out (i) a systematic review (scientific literature), (ii) a scoping review (practitioners' journal, conference papers, literature from a range of public, private and sector bodies and governmental publications) [12,13] and (iii) personal sources (professionals/ practitioners). The expert team identified through discussion the following relevant

sources to collect the items: international scientific literature for the systematic review and the Dutch midwives' practitioner journal, governmental and healthcare professional reports and guidelines, and midwives' expressions of woman-centered care in the media for the scoping review. Narratives and referents from practising midwives, lecturers and from fiction and art were sources to obtain items with a more personal origin. Items were collected verbatim from these sources –, until a saturation point was reached.

Scientific literature

Two researchers independently searched the literature in the electronic databases PubMed, OVID and EBSCO (1 September – 30 November 2015) using the following search terms: [woman OR women OR client OR patient] AND [centered OR centred OR focused] AND [midwife OR midwives OR midwifery care OR care] AND [practice OR experience OR view]. We had no restrictions for publication date or language. Frequently appearing authors were entered manually in the aforementioned electronic databases. All full text articles, published in English or Dutch were considered eligible. The following inclusion criteria were applied: published articles with clear relevance to the subject of woman-centered care or a synonym stated in title or abstract; research with women of all ages and ethnicities, performed in any country; research conducted within the healthcare area of fertility, midwifery and obstetric or midwifery nursing. Initial search rendered over 1200 research entries. The two authors independently assessed the eligibility of the articles by using the title and abstract for initial screening followed by examination of the full text. After removal of duplicates the selection was narrowed down 262 articles. Relevance to the subject was judged by assessing if a clear stated definition of woman or client or patient-centered or -focused care was identified in the full text article after which 85 articles remained. We included studies using qualitative and quantitative data in an effort to increase understanding, to seek various perspectives, and to guard against misinterpretations. We fully read the articles and further selection was based on use of the criterion-based method of concept analysis [14]. This implies that articles that included a description of definition, characteristics, antecedents, consequences and boundaries of woman-centered care, were selected. This left us with 34 remaining articles which were fully read to identify sentences, clauses and phrases related to woman-centered care. The selected studies included one RCT, two discrete choice experiments, one cohort study with a control group, eight cross-sectional studies, one case-study, four mixed-methods designs and 17 qualitative studies using interviews, focus groups and observation according to Grounded theory, ethnography and phenomenological study designs. A list of the included studies is available from the author (Figure 1).

Dutch midwifery journal

Our expert team decided to search the monthly distributed practitioners' journal for midwives published by the Dutch Royal Association of Midwives. This journal aims to inform midwives about scientific, educational and care-related relevant facts, topical issues and developments and it serves as a platform for discussion between midwives and other midwifery related professions. Members of the association receive the journal as part of their membership, reaching approximately 2600 midwives in the Netherlands of a total of 3150 practising midwives [15]. We manually searched 66 volumes published between January 2010 and July 2015. These journals were scanned for relevant studies, personal interviews and columns based on title and abstract or introduction. We extracted and read 30 records and
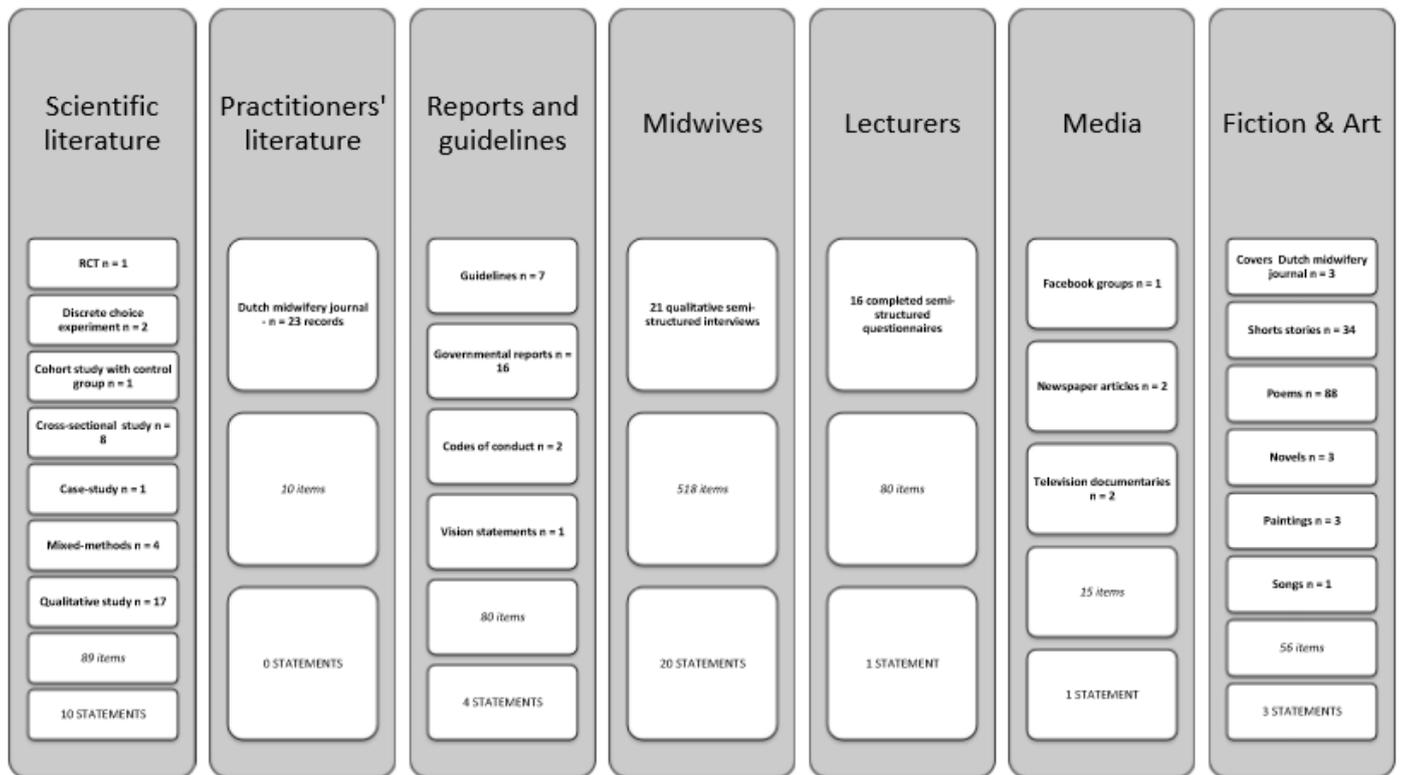
Figure 1. Collection of items and selection of Q-statements from relevant woman-centered care sources.

selected a total number of 23 (3 interviews, 2 studies, 18 columns). Two researchers independently extracted sentences and phrases about woman-centered care, which were thereafter discussed and included after reaching consensus (November 2015). The records are available in Dutch and can be requested from the author.

Reports and guidelines

Dutch and international governmental, institutions' for health and healthcare excellence and midwifery and obstetric associations' websites were searched for reports, (position) papers, vision statements, codes (of conduct) and guidelines that related to woman centered midwifery care (1 November 2015 – January 2016). We included European countries, Ocean countries and other English speaking economically developed countries as we regarded these countries showing similarities in healthcare organisation and health insurances compared to the Netherlands. We selected records that included woman or client centered care in the document's title and retrieved 26 relevant documents in total, which predominantly originated from Anglo-Saxon countries (United Kingdom (UK), Canada, Australia) and the Netherlands. The nature of the documents comprised guidelines (n = 4 UK, n = 2 Dutch, n = 1 Canadian) (published between 2001 and 2012), governmental reports (n = 15 UK, n = 1 Dutch) (published between 1991 – 2009), codes of conduct (n = 1 Australian, n = 1 Dutch) (published between 2006 – 2009) and one Australian vision statement (published in 2004). These documents were fully read and marked independently by two researchers (September 2015), to identify quotes about woman-centered care. Findings were compared and discussed. Items were included after reaching consensus (Figure 1).

Media

The Dutch governmental report's recommendation about adopting a woman-centered approach in midwifery care [1] did receive a lot of media attention, responses and criticism [16]. Therefore, the expert team identified media (newspapers, Facebook group and television programmes) as a source for collecting items about woman-centered care articulated by either midwives or midwifery related healthcare professionals or experts. The author searched (July 2015) four online popular national orientated available Dutch newspapers in the period between January 2014 to July 2015. Two newspaper articles were selected, fully read and marked independently by two researchers. Quotes were compared and discussed and items were included after reaching consensus. The author scanned posts on a Facebook group for midwives and women supporting freedom of choice and autonomy in child birth for narratives about woman-centered care (November 2015). This Face group has approximately 1650 members and serves as a forum for mothers (to-be), their partners and midwives. Two researchers independently extracted sentences and phrases about woman-centered care, which were thereafter discussed and included after reaching consensus. We additionally searched the media App for missed and on demand television programmes and scanned it for documentaries produced between 1985 and 2010 with woman-centered related titles and descriptions (November 2015). Two documentaries were selected and fully watched by two searchers. The researchers extracted phrases, which were described verbatim, compared and discussed. Items were included after reaching consensus. The titles of the articles and documentaries are available from the author.

Fiction and art

As woman-centered care has shown to be associated with subjectivity [5] our expert team identified fiction and art by midwives as a source to collect opinions. We regarded art as a form of expression,

including writing; reflecting midwives' experiences, emotions, likes and dislikes of woman-centered care. The covers of the editions of the journal of The Dutch Association of Midwives (KNOV) published between 2004 and 2014 portray arts and crafts made or owned by midwives. Two 220 researchers scanned the covers of the online editions (n = 112) and independently interpreted and thereafter discussed meaning, reaching consensus (November 2015). As a result, we formulated three items. Additionally, we used Google as our search engine applying "midwifery" or "midwife" AND "woman-centered" AND/OR "care" AND "art" or "poem" or "stories" or "song" or "lyrics" or "book" as our search terms (1 August – 1 September 2015). We had no restriction for language or dates. After removing duplicate hits, we remained 34 short stories, 88 poems, five novels, three paintings and one song. The meaning of the paintings and the song were interpreted by two practising midwives and these interpretations were collected verbatim and documented by the author (Figure 1). A full list of the fiction and art products is available from the author.

Midwives: interviews

We performed two qualitative studies both using semi-structured interviews as the data-collection method. We first interviewed a sample of 11 midwives between 9 and 20 March 2015 to explore their motives for offering woman-centered care during the intrapartum and postnatal period. The interviews lasted 25 to 65 minutes. The participants practiced in the southwest region of the Netherlands and were between 27 to 47 years of age, with five to 24 years' work experience in primary care. We subsequently conducted semi-structured interviews to capture self-referent midwives' perspectives of woman-centered care provision with the underlying causes and implicit rules. These interviews were based on the Attitude–Social influence–self-Efficacy (ASE) model in order to include all midwives' underlying factors of woman-centered behaviour. Ten midwives were interviewed between 27 April and 11 May 2015. The interviews lasted between 35 to 60 minutes. The participants were between 28 to 54 years of age, with three to 27 years' work experience in primary and secondary midwifery and obstetric healthcare settings in central and southern regions of the Netherlands [5].

All 21 interviews were audiotaped and transcribed verbatim. Each interview was transcribed and field notes of non-verbal communication were added to the transcripts. The transcripts were emailed to the participants for a member check, giving them an opportunity, should they wish, to change or remove any data. All participants agreed with the transcripts and no data were removed. As a reliability check all transcripts were fully read and marked independently by two researchers (September 2015), to identify quotes about woman-centered care. The quotes were compared and discussed and included after consensus was reached.

Lecturers: semi-structured questionnaires

As the outcome of the Q-method study also serves education purposes, we thought it relevant to include lecturers' perspectives. We informed lecturers of the Rotterdam University of Applied Sciences, School of Midwifery Education about the study by email and subsequently invited the lecturers (n = 30) by post for participation in the collection of their perspectives on woman-centered care, between 12 May and 31 June 2015. The invitation included a semi-structured questionnaire, were participants were asked to finish five sentences about woman-centered care, according to Kim Casali's 'Love is' comic strip format. ('Woman-centered care is…' 'For midwives woman-centered care is…" For childbearing women woman-centered care is…' 'The value of woman-centered care is…' 'Woman-centered care feels

like…'). We received 16 completed questionnaires. The participants' mean age was 48 (SD 11.4, range 29-64) years. Four participants were not midwives, three participants still practised as a midwife and the remaining 9 participants had on average of 14 (SD 6.97, range 2-28) years' work experience and worked on average 8.5 (SD 6.4, range 1-24) years as a lecturer in midwifery. Levels of education varied: Bachelor (n =4), Master (n=12). Two researchers fully read the responses of the participants and extracted citations in September 2015, discussed these and made a selection after reaching consensus on the items.

Step 2. Q sample selection

We extracted a total of 852 clauses, phrases, quotes and citations (scientific literature, n = 89; practitioners' literature, n = 10; interviews with midwives, n = 518; reports and guidelines, n=80; lecturers' questionnaire responses, n = 84; media n = 15, fiction and art n = 56) about woman-centered care. This needed to be reduced to a manageable and a recommended size between 20 to 80 items [9,17,18]. We removed 455 duplicate items. English phrases were translated into Dutch by native speaker. The remaining 395 items were grouped for relevance, similarities in content and meaning and were reduced to 80 items. It is important to note that the selected statements came verbatim from the sources, with no influence of the researcher's own reference frame. A team of seven experts consisting of (practising) midwives, lecturers, rearchers and an applied research professor selected the final Q-statements. As recommended [18] we purposively generated a larger number of items than expected to be used for the final concourse, in order for further refinement and reduction to take place in the later pre-test phase. At this stage we had a final Q-sample selection including 45 statements. Figure 1 shows the collection and selection of the Q-statements.

Step 3. Formulating the Q-statements

A Q-statement is an opinion statement and is understood to be a stimulus that triggers respondents' search for meaning [19]. In order to achieve this, two researchers applied the criteria for formulating a position statement. We ensured that the statements were balanced in formulation, i.e. that a respondent has an equal opportunity to react positively and negatively to statements [7]. To aid the formulation step, it has been recommended to use a design principle or model in order to ensure that all aspects of the topic of interest have been covered, and to ensure that the sample does not favour one aspect over another – avoiding the potential incorporation of bias into the final Q-set [9,10]. This artificial categorization of statements has to be considered as a mere way for the researcher to organize in order to facilitate the formulation of statements for the Q-set [9]. Woman-centered care is regarded as midwives' care behaviour. Behaviour is influenced by various determinants such as intention, attitude, self-efficacy, social and personal norm, barriers and external influencing variables [20]. Therefore, we chose to categorize the statements according to the ASE model [20]. We phrased 14 attitude statements, including statements about view and consequences/ outcomes), three statements concerning midwives' personal norm and five addressing the social norm. We worded five statements addressing self-efficacy, four regarding intention, nine barriers (including outcomes) and five addressed external variables such as knowledge and expertise. Formulating the Q-statements took place early February 2016.

Step 4. Validation of the Q-sample

To ensure content validity, comprehensiveness and representativeness of the given Q-sample, the statements were reviewed by domain experts [21]. The expert team verified that

the statements were relevant and understandable for all midwives, regardless whether they work in a community or hospital-based setting. Three statements were rephrased. To check validity and applicability, the statements were digitally pretested for comprehensibility, simplicity and clarity by third year midwifery students (n = 15) using a digital learning and interaction platform (February 2016). They applied the following criteria: (i) relevance of items to woman-centered care, (ii) the focus of statements, and (iii) comprehensibility. Subsequently the statements were pilot-tested among two groups of 12 Master students of the Midwifery Physician Assistant programme and the first two participants of the data collection process who ranked the statements with the Q-sort (February to May 2016). Pre and post-testing resulted in deletion of repetitive statements, the rephrasing of double barreled and inarticulate statements and revisions in wording. We reduced the final Q-set to 39 statements (2 social norm, 1 self-efficacy, 2 barriers were removed). The final and validated concourse has been formulated in Dutch.

Discussion

We aimed to systematically develop and construct the Q-set for a Q-method study about midwives' perspectives of woman-centered care. To our knowledge this has not been systematically and transparently described before. Our process included several a priori defined steps and the use of a systematic threefold approach to collect the initial items in order to include a range of relevant data from organizations and individuals that are relevant to the midwifery domain and our topic 'woman-centered care'. The selected studies in the systematic review varied from low to high levels of evidence. We purposively included the scoping interview simultaneous with the systematic review, to evaluate if the evidence of the systematic review was complete and it allowed us to see where there were data points in the larger literature landscape [22]. It also allowed us to evaluate the content and completeness of the items extracted from the interviews. Taking into account the number of duplicates, we regard that we have been as extensive and complete as possible in collecting the items and that the statements represent midwives' subjective thoughts about woman-centered care. However, it would be presumptuous to assume that the included items reflect the full context of woman-centered care. The expert team used their professional judgement in discussing the (clinical) relevance of the evidence and the extracted items. Although we collected items that also originate from international data countries and reports and guidelines from countries that show similarities in healthcare organization and health insurances compared to the Netherlands, selection and validation occurred by Dutch experts. The concourse might therefore not fully represent midwives' thoughts that work in different countries and settings.

One of the voiced concerns about Q-methodology is the lack of guidelines on Q-set construction [11]. Involving experts in the a priori planning and the collection, selection, formulation and validation steps (steps 1-4) increased validity of the Q-set and credibility of the Q-statements [9,10]. Using the ASE model to categorize the statements shows robustness of the Q-set [23]. Although our Q-set included predominantly attitude-related formulated statements, this seems a logical phenomenon as a Q-method study focuses on perceptions. Moreover, perceptions and attitude show an intrinsic link that are influenced by the same tendency. Another concern that has been voiced about Q-set construction is the lack of best practices [11]. From our experience we can conclude that there might not be a best practice due to the fact that the development of a Q-set is topic and domain related. Q-set construction might fully depend on what data

are available and on the purpose and context of the Q-method study. We recommend monitoring and describing the full process to create transparency and reproducibility. Another reported limitation of the Q-method is the time that it requires [9,10]. The process of collecting, selecting, formulating and validating required a period of ten months during which several experts were involved. Although this might be experienced as a lengthy period involving intense collaboration, it did provide us with rich and detailed information about the ways the midwifery domain thinks about woman-centered care. As expert team we have expanded our existing knowledge and regarded the collection, selection, formulation and validation steps as valuable in our personal developmental processes. We also experienced that it reduces researcher's bias [9]. We can recommend Q-set development as a thorough and enjoyable method to gain insight in content and subjective thoughts on topics of interest. We believe we have constructed a Q-set that is suitable for further application in the next phase of the Q-method study.

Conclusion

We developed a useful, meaningful and relevant Q-set for a Q-method study about midwives' perspectives of woman-centered care incorporating systematic steps and by including various relevant sources in the midwifery domain. We have illustrated the steps to construct a Q-set in preparation for a study that explores perspectives that midwives hold about woman-centered care. Considering the limitations, we believe that researchers, especially those undertaking Q-method studies for the first time, may benefit from the practical and theoretical considerations to construct a Q-set offered in this article.

Acknowledgements

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