

Public health nurses' barriers and facilitators to the use of research in consultations about childhood vaccinations

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Abstract

The aim of this study was to describe sources of information, as well as barriers and facilitators to the use of research during consultations by public health nurses concerning childhood vaccinations. The study was conducted using semi-structured focus group interviews in a grounded theory approach. Overall 16 public health nurses participated into three focus groups conducted in 2008. We found that the public health nurses' most important sources of information were the National guidelines and other information issued by the National Institute of Public Health. Although they argued that research was important for being able to base practice on solid information, for their own professional development and for meeting parents' demands, they were reluctant to search for such information themselves. This was explained by beliefs about their own role, limited critical appraisal skills and perceived capacity. We conclude with that insight into how knowledge is produced and how to obtain such information is not only a necessity for good quality health care and professional development, but is also a way to address challenges such as time, overload of information and the ability to answer questions parents may have. More emphasis should be given to empowering public health nurses so they can find and critically appraise research, and this should be an integrated part of practice.

Background

Childhood vaccinations against infectious diseases have been proved beneficial based on the principle that prevention is more effective and causes less harm than treating the diseases (1). However, parents' knowledge about the effects (and side-effects) of vaccinations has been found to be limited, and increased parental concerns about vaccine safety have been associated with a diminishing level of experience with infectious diseases (2-4). Childhood vaccinations have also been subjected to prominent negative publicity that is largely unsupported by the scientific literature (5). In many countries, including Norway, childhood vaccinations are administered by community or public health nurses (6). The public health nurse is therefore vital not only as a mediator but also as a *moderator* of information in encounters with parents.

Nursing is a profession in continuous change, responding to current challenges in health and health care (7). Patient- oriented care is the heart of the new model of public health (8-10). In this model health professionals work in partnership with users of healthcare and the sharing of information, responsibility, accountability and transparency is advocated (9, 10). It is also an international priority that policy and practice is informed by the best available scientific research (11, 12). In order to accomplish this, health professionals are required to take an active part in this process (12, 13). Relevant evidence is by Brownson et al. (p. 177, (12) described as "*epidemiologic (quantitative) data, results of program or policy evaluations, and qualitative data for uses in making judgments or decisions..*" This is important considering that knowledge frequently changes and every week hundreds of new papers are published in journals. Moreover, faced with a more active and demanding public than only a decade or two ago (3, 14, 15) and no longer being able to "root professional practice in a stable base of knowledge legitimised by reference to past" (p336) (7); the core competencies increasingly being emphasized are the

ability to change and acquire new skills and knowledge to prepare for lifelong learning (7, 12, 13). In order to address current challenges related to childhood vaccinations (2-4), public health nurses must be able to gain, assess, apply and integrate new knowledge to assist parents in their decision making (8, 12). However, studies have shown that many health professionals, including nurses, have little experience with searching for and critically appraising health research (16-18). Furthermore, the public's increased access to health information through new information technologies requires that health professionals in general, including public health nurses, are able to discuss any information that users may bring with them to the consultation (15).

The aim of this paper is to describe public health nurses' sources of information as well as barriers and facilitators to the use of research in consultations about childhood vaccinations. The study is part of a larger project where the purpose is to improve the public's access to research based information and health literacy skills through a tailored intervention. A paper has been published earlier from the same study describing parents' decision making about childhood vaccination (19).

Methods

Design

A grounded theory approach was selected. Grounded theory is particularly well suited when the aim of the research is to explore process, action and relationships (20). There are many grounded theory approaches, and the work by Charmaz (20), building on the Chicago school of Strauss, influenced our choice of design and provided us with "systematic, yet flexible guidelines for collecting and analyzing qualitative data to construct theories grounded in the data

themselves” (p. 2). The understanding of theory guiding this study was based on Corbin and Strauss’(21) definition describing theory as ‘a set of well-developed categories (themes, concepts) that are systematically interrelated through statements of relationship to form a theoretical framework that explains some phenomenon’ (p. 55).

Participants and setting

Data were collected in 2008 and 16 public health nurses were recruited from three maternal and child health centres in a major Norwegian city. Three districts was chosen based on strategic sampling representing diversity in socio-economic background; including one maternal and child health centre on the westside, one on the eastside, and one in the city centre. The sampling of public health nurses from each district was done using pragmatic convenience sampling, and all public health nurses who volunteered were included in each sub-sample.

Overall 16 public health nurses, all female, were recruited to participate in this study. In addition to serving a mixed population in relation to socio-economic and cultural background, the included sample of nurses also represented a range in age and professional experience (seniority).

The focus groups

Focus groups are a suitable method for learning about people’s experiences and views in an interactive format, and can facilitate discussion and expression of ideas that may be left under-developed in individual interviews (22-24). A total of three focus groups were conducted using a semi-structured interview guide. The sessions lasted between 45 and 90 minutes and were lead by a researcher with a social science background (AA). A nursing student assisted as interview

secretary by keeping an extra set of notes and supplementing with additional probing questions. The notes were discussed immediately after the sessions by the researcher and focus group secretary. The sessions were taped with the permission of the informants. The interview guide included general topics relating to how they inform parents about vaccinations, what information they base their advisory work on, and facilitators and barriers to the use of research. The sessions were initiated by a general and open question, asking the public health nurses to describe how they experience their meeting with the parents, supplemented by probes on what they emphasise in their advisory work and how they inform the parents (23). Data collection was ended when no new concepts were identified to change categories and theoretical sufficiency was achieved (20). Member-checking was done at the end of the sessions by AA and the interview secretary. Participants were presented with preliminary interpretations of the main issues identified to check authenticity and allow them to comment on the accuracy and completeness.

Analysis

Throughout the data collection process memo writing was done supplementing the analysis process. The interviews were transcribed (verbatim) by AA. In the first phase, the data were coded by 'incident to incident' to identify sources of information, barriers and facilitators to use of research and analysis was performed continuously to check and interpret data, and to develop preliminary categories and relationships between these. Whereas the theoretical and conceptual framework guided the development of the interview guide, the generation of categories and theory was done based on the collected data alone in the spirit of grounded theory (20). The final stages included creating a chart of the identified factors influencing use of research and categorizing these as barriers and facilitators, based on axial coding (20, 21). To

complement the grounded theory approach we also drew on framework analysis for managing the data (25).

To improve credibility the reading and interpretation of the data was done independently and then discussed by AA and an additional researcher with a background as a public health nurse (SH). The interdisciplinarity of the research team added different perspectives and viewpoints to the study, including theoretical knowledge and clinical experience. All participants were informed about the purpose of the study and were asked to sign informed consent forms. Data from the sessions was treated anonymously, and ethical approval was granted by the Norwegian Social Science Data Services (NSD) and Regional Committees for Medical and Health Research Ethics (REK).

Findings

Below we present our findings of this descriptive and explorative study; identifying the public health nurses sources of information as well as barriers and facilitators to the use of research in consultations about childhood vaccinations. The selection of quotations reported below was done to reflect typical statements underpinning the categories identified from the data.

Sources of information in consultations about vaccinations

The public health nurses' most important source of information about vaccinations was by far the National guidelines and other information issued by National Institute of Public Health. Other sources of information were randomly used and less formalised, such as discussions with

peers, superiors and other health personnel, own professional experience, textbooks, mass media reports, the internet and the pharmaceutical industry. Although the public health nurses occasionally looked up extra information, this rarely included research. Instead they primarily contacted the National Institute of Public Health or used the sources of information described above.

Recalling situations where they had used actual research reports as extra support, they remembered the information had been centrally distributed, either through official bodies, superiors or peers such as the public health nurse association. The facilitators and barriers to the use of research are described in the following sections and in figure 1.

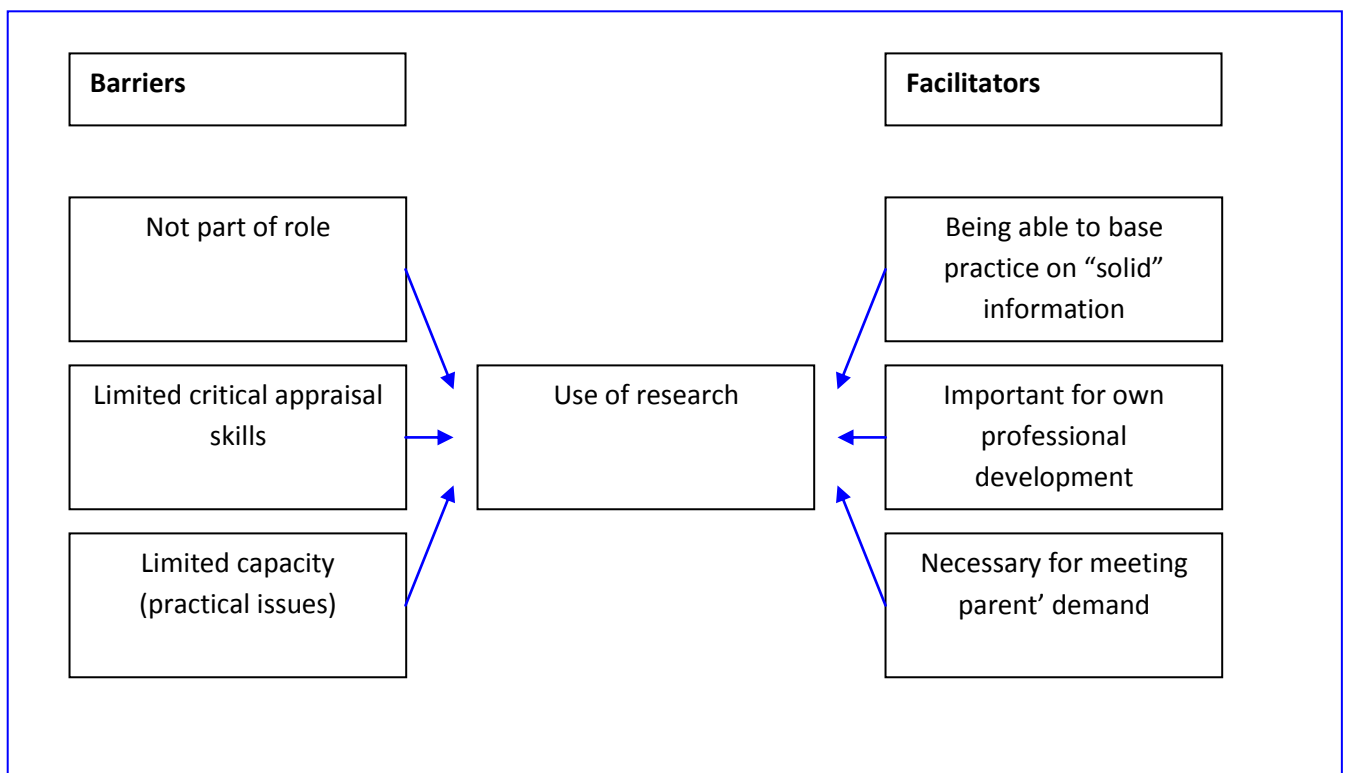


Figure 1. Barriers and facilitators to use of research in consultations about vaccination

Facilitators to the use of research in consultations about vaccination

Three main facilitators were identified during the focus groups; being able to base practice on solid knowledge, the belief that the use of research was important for professional development, and necessary for meeting parents' demand for extra information.

Being able to base practice on “solid” information as a facilitator

A desire to provide the best possible care was often highlighted throughout the group discussions. Building a relationship of trust and mediating reliable information was described as the heart of this practice. Being able to base their advice on something “solid and concrete” such as research based information was perceived as reassuring and to be an asset in their work. As one public health nurse said:

(Group 1): Because then I feel that it's not just something I'm sitting here saying, but then you have concrete evidence

Important for own professional development as a facilitator

Access to and use of research was emphasized by the public health nurses as interesting and important for keeping professionally updated. However, this need for more knowledge was often prompted externally, either by changes to the vaccination program or in meeting parents who were critical about vaccinations after having looked up a lot of information on their own, or relying on alternative beliefs to the bio-medical tradition. As one public health nurse said:

(Group 1): When I have talked to the parents, then, some are quite convincing and I can almost become a little in doubt ... and then I need to go back and reassure myself of (what is correct). So it's often when there are doubts or lack of knowledge (that I search for more information).

Necessary for meeting parents' demand as facilitator

The search for and use of extra information was also triggered by parents' demand for more information. Reasons mentioned for such demands were parents wanting to discuss disconcerting information they had found on their own or questions being prompted by mass media reports. As one public health nurse said:

(Group 2): Mass media controls much of the health sector

An example mentioned where they had used research reports (although these had been provided centrally), was during the period when the alleged association between MMR and autism had been reported in the Norwegian media.

Although a potential facilitator for extraordinary retrieval of information, these situations were also considered as stressful events, stealing time and leaving them sometimes at a loss. As one public health nurse said:

(Group 2): Then, it is difficult for me to trace where they read these things, (and) what made them confused. What am I supposed to say or not say, to disagree or not? So, things like that are a bit special to bring up during a normal consultation, and it takes time for me to find out and to trace back what made parents afraid or confused.

Barriers towards the use of research in consultations about vaccination

Three main barriers were identified; a belief that searching and use of research findings was not part of their role, perceived limited critical appraisal skills and capacity.

Not part of role as a barrier

A general impression was that the public health nurses were secure in their role as counselors, highly loyal to their mandate and had well defined assumptions about own role and responsibilities. Describing themselves as public employees enforcing national policy, they emphasized the importance of using the information and the national guidelines issued by governmental authorities in consultations. As said by two public health nurses:

(Group 2): Yes, if it's related to vaccines then we want to use the National Institute of Public Health, because that is also in our mandate issued by the ministry.

(Group 3): One calls the National Institute of Public Health. It's they we rather want to use, and what I'm thinking is that we are public employees

There was a tendency that information was thought of as something managed centrally, either provided by official bodies such as the National Institute of Public Health or superiors. As one public health nurse said:

(Group 2): I have confidence in ... the management has a professional responsibility...

If there is anything I need to know, then I should also receive it.

This was explained by the belief that the information used in consultations had to be quality approved by a higher instance such as the institute for public health and have been given a “stamp of approval”. As a result, looking up research on their own was by some also understood as something that could potentially conflict with their mandate (to base their practice on the national guidelines). As such, the public health nurses’ loyalty towards the guidelines and perception of own role may not be a barrier to the *use* of research based information as they considered the information they received as research based, but rather a barrier to *searching* for information on their own. As one public health nurse said:

(Group 2): We are not supposed to swallow (information) without ... we really need a certificate that the... if we go in and read something else we need an attestation really from the Norwegian authorities that the information is in accordance with the contemporary guidelines. We are not supposed to make any assessment there.

Limited critical appraisal skills as a barrier

As mentioned earlier, providing good quality health care was a key issue mentioned by the public health nurses throughout the group discussions. Since several felt that they did not have the knowledge to critically appraise such information, they felt reluctant to search for research on their own. Thus the need for quality approval was also related to a fear that the research they found on their own would not be valid. As one public health nurse said:

(Group 3): We can't just go in and begin to find research reports that we in a way don't know what really are. We can't vouch for such information. We must only use more reputable sources.

Limited capacity as barrier

Several practical barriers relating to capacity were identified. The large amount of information available in medical databases and other online sources was seen as unmanageable, but also the range of topics they as public health nurses were required to cover (in addition to vaccinations). As one public health nurse said:

(Group 2): It's so much in a way; there is so much we are supposed to know. It's no use to digging so much in depth.

Moreover, time was found to be an issue, and that if they were to spend time searching for research this was something they would have to do in their spare time because of their large amount of work. This was illustrated by the conversation below:

(Group 3): Public health nurse 1: We don't have much time either, to sit down to fine-read these (research) articles, and I remember we read in school how to find out if this is a good article or not...

Several public health nurses: Yes right?

Public health nurse 1: I remember that I thought "oh this is great; I will certainly use this (in practice)". But you don't.

Public health nurse 2: No, then reality hits you

Thus, the perception that information was something that was seen as something managed centrally and top-down was not only explained by loyalty towards their mandate but also a matter of convenience coping with their limited capacity.

Discussion

Health professionals, such as public health nurses, are crucial to good quality health care but their practice includes many challenges (26)30). This qualitative study, using focus groups in a grounded theory design, explored public health nurses' sources of information as well as barriers and facilitators to the use of research in consultations about childhood vaccination. Flexible and versatile, focus groups are applicable to many settings, offering the opportunity to gather vast amounts of data as well as providing depth and insight into complex research questions (23, 24). There is little consensus about the analysis and reporting of focus group data in the literature, and there are many purposes and approaches to using focus groups (23, 24). The field describing focus group methodology is complex and in development, and not deterministic advocating one true approach (23, 24). Seeing the choice of analysis as dependent on the purpose of the study and choice of design, the reporting in our study was chosen to represent the categories identified through interpretation of the complex and rich data from group interactions. These are judgments and methodological choices we have done following the flexible advice of grounded theory and focus group methodologists (20),(23, 24).

The benefits of group interaction includes insights spurred by “cross- fertilization” of ideas, and the possibility to include those who would not feel comfortable in an individual interview but may also engage those in discussion who would otherwise be less likely to participate (23, 24). Focus groups may also include the risks of that group participants develop particular perspectives as consequence of talking with others in the same situation and polarisation (24). In this respect, focus groups, in comparison to individual interviews, demand strict attention from an organised moderator to facilitate a structured discussion (23, 24). Throughout the focus groups, it was our dedicated goal to facilitate the discussion in such a way that all voices were heard and at the same time trying to “balance” out the group so that a selected few would not dominate the group. The public health nurses that participated in our focus groups were generally very active and enthusiastic about the topics being raised. Since the groups were organized by districts, the discussions not only took place in a safe environment, but among colleagues familiar with each other. Despite this being a small study, drawing its conclusions from a limited sample of participants, there was considerable coherence across the focus groups thus adding weight to the findings.

The emphasis on that practice should be based on the best available research, and that health personnel should actively take part in this process is a fairly new trend (12, 26). The formal discourse on the scope and nature of evidence based public health began in the late 90’s; acknowledging the rapid growing body of knowledge within the field, the need to systematize this knowledge, and the potential benefits on health outcomes and efficient use of private and public resources (12). Hence one may hypothesize that more recently graduated nurses may be more likely to use research. This was not thoroughly explored in our study, and other studies

should perhaps investigate this further. We also invite other researchers to explore the identified categories in further studies, including both qualitative and quantitative methods.

Whereas low uptake of guidelines by other health professionals has been found, this was not the case in this study (27). The public health nurses were highly loyal to the national vaccination guidelines and information issued from official bodies such as the National Institute of Public Health constituted their most important source of information about vaccination. Guidelines can be important tools in clinical decision making (27). However, guidelines and recommendations is not enough since they may not contain enough information to adequately address parents' questions and other current challenges associated with vaccination (2-4).

The public health nurses' other sources of information were peers and other health professionals, own professional experience, textbooks and mass media reports. Similar findings have been found elsewhere in studies of nurses and other health professionals (16-18). Although textbooks may provide general information, they are not adequate sources of information since they may be outdated, particularly when it comes to the effects of treatments (18). Discussions with colleagues and other health professionals may be easily accessible sources for information and an important part of practice providing peer support; however such informal exchanges of information are not an optimal source for updated and research based information and may also be influenced by opinions (18).

Despite the many identified potential facilitators to the use of research, these were clearly outweighed by the barriers since the public health nurses reported rarely or never looking up research on their own. An interesting finding was that some, in defining their role as public employees, felt that that it was not their job to look up research; rather their responsibility was to

rely on the information and guidelines issued from or approved by official authorities. This finding can be interpreted in the development and positioning of nursing as a discipline (7, 26). Central to professionalism is “*exclusive ownership of an area of expertise, the power to define the nature of problems in the area, and the control of access to potential solutions*”(p.306, (26). That nurses do not systematically search for research and their inclination to adhere to practice “as is”, is by Jensen and colleague (26) explained by that nursing’s links to science is relative new. Moreover, nursing has been characterized as a profession with uncertain identity, dependent and sub-ordinate to other professions such as physicians (7, 26). This means that the role and responsibility to actively engage in searching for and using research may be unclear, and that this has yet to be established as an integrated part of practice. However, in recent years the role of the nurse has evolved to an independent profession founded on a theoretically based knowledge core, with the development of scientific knowledge as the main strategy of building professionalism (7, 26). Thus, in the years to come public health nurses’ beliefs about role and responsibility may to a larger degree include being an active agent in their own professional development.

The nurses’ preference to rely on the authorities as was found in this study, can also be explained by another important factor defining the development of nursing; the nurses’ social responsibilities highlighted in policy documents (6, 7, 28). For the public health nurse this implies weighing the professional autonomy and the loyalty to the system (7, 12). Although nursing professions such as community or public health nurses have traditionally been more autonomous and working independently; roles, boundaries and status are still being negotiated within the profession as well as between the professional groups and the health system, other professions and in meeting with users (7, 9, 29). Adding to this, and particular for the case of vaccination, is the fact that although the public health nurses are responsible for the

implementation of childhood vaccinations in Norway, this is a legally *delegated authority* where an attending physician has the supervision and responsibility of prescribing the vaccines (28). Thus, nurses, are met with conflicting discourses emphasizing professional autonomy based on scientific expertise on one hand, and on the other hand they are asked to respond to the requirements of the health authorities (7). Although bound by legal and ethical obligations to enforce public policy, the professional has also been described as possessing a third logic separated from bureaucracy or the market (26). In this view, being updated on the best available research should not be seen as a threat to practice but rather as a valuable resource to be used in addition to the official guidelines (12).

The public health nurses highlighted the importance of providing the best possible care based on solid and reliable information. This belief seems to underlie several of the identified facilitators, but interestingly, also some of the barriers. Whereas the use of research was considered important for being able to base practice on solid information, for professional development and for being able to address parents' demands; their low confidence in their own critical appraisal skills and the fear that that such information would not be valid prevented them from searching for and using research. Thus, their preference to rely on information issued top-down was not only explained by loyalty towards their mandate, but also by that such information was considered to be research based and quality approved, as well as convenient during their demanding working day.

Contemporary public health and health professionals are faced with a series of challenges, such as overload of information, accessibility and time constraints (12, 17, 18). Health professionals of today are also faced with a more educated, critical and autonomous public (9, 15). The time where health professionals had "monopoly" on knowledge is over; health

information is now widely available and interpreted by other professionals, social groups and cultures within their own contexts (5, 10, 15). Patient involvement and access to balanced information is advocated on ethical grounds to facilitate equal access to healthcare and respect user autonomy, but also for its' potential health benefits by fostering self-efficacy and acquisition of life skills (8-10). However, this change in culture has also resulted in extra strain being placed on the professional struggling to meet public expectations (9, 29). In this study this could be seen in that the search and use of extra information was primarily driven by external triggers such as mass media reports and parents questioning. Although a potential facilitator for information retrieval, parent demand for extraordinary information was also considered a stressful event, stealing time and leaving them at loss sometimes. Having systems for information retrieval and being able to find, assess, apply and integrate new scientific knowledge are useful tools in professional practice, but they can also be important for informed decision making (8, 12, 17, 18). This enables the professional to discuss and critically appraise any information that parents may have found or seen in the news (3, 4) and to recommend reliable sources for information (15).

It has been argued that the success of a health system is dependent on how well “*the system develops, motivates and deploys its staff*”(p 4., (30). Although the emphasis on evidence based practice and that health professionals should take an active part in this process has been highlighted in policy documents and curricula, it is a fairly new priority and may not have been adopted in practice. Consequently, emphasis should be made to facilitate public health nurses and other health professionals in finding and incorporating the best available evidence into practice. Moreover, further research should explore if these changes can play a part in redefining

perceptions about the role and responsibilities' of public health nurses concerning searching for and using research based information.

Conclusions

The most important information used in consultations about vaccinations were the National guidelines and other information issued by official bodies such as the National Institute of Public Health. The findings in this study also support earlier findings that nurses prefer to rely on traditional sources of information such as peers, own professional experience and textbooks. Although several facilitators to using research were identified, barriers such as the understanding of own role, limited critical appraisal skills and capacity were found to prevent the public health nurses doing so.

Public health nurses hold a unique position as *knowledge brokers*, vital not only as mediators but also as moderators of information in meeting the public. Insight into how knowledge is produced and knowing how to find and appraise such information is not only a necessity for good quality health care and professional development, but is also a way to address challenges such as time, overload of information and being able to answer questions that users may have. Emphasis should be given to empowering public health nurses to find and critically appraise research and that this should be an integrated part of practice. Future quality improvement efforts should include continuing professional education for public health nurses, and that the resources necessary for making this possible such as time and access to research is made available.

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Conflict of interests

No conflict of interest has been declared by the authors.

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