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Identifying public health policymakers' sources of information: Comparing survey and network analyses

Kathryn A. Oliver[1,2,], Frank de Vocht[2], Annemarie Money[2], Martin Everett[3]*
[1] Department for Science, Technology, Engineering and Public Policy, University College London
[2] Centre for Occupational and Environmental Health, Institute for Population Health, University of Manchester
[3] School of Social Sciences, University of Manchester
[*] Corresponding Author: Kathryn Oliver, E-mail: Kathryn.oliver@ucl.ac.uk

Abstract

Background

Research suggests that policymakers often use personal contacts to find information and advice. However, the main sources of information for public health policymakers are not known. This study aims to describe policymakers' sources of information.

Methods

A questionnaire survey of public health policymakers across Greater Manchester (GM) was carried out (response rate 48%). All policy actors above Director level involved in public health policy (finding, analyzing or producing information, producing or implementing policy) in GM were included in the sampling frame. Respondents were provided with a list of sources of information and asked which they used (categorical data) and to name specific individuals who acted as sources of information (network data). Data were analysed using frequencies and network analysis.

Results

The most frequently chosen sources of information from the categorical data were NICE, government websites and Directors of Public Health. However, the network data showed that the main sources of information in the network were actually mid-level managers in the NHS, who had no direct expertise in public health. Academics and researchers did not feature in the network.

Conclusion

Both survey and network analyses provide useful insights into how policymakers access information. Network analysis offers practical and theoretical contributions to the evidence-based policy debate. Identifying individuals who act as key users and producers of evidence allows academics to target actors likely to use and disseminate their work.

Keywords: Public health policy, evidence-based policy, social network analysis

Introduction

Evidence-based policy (EBP) researchers often describe the importance of increasing uptake of research by policymakers. Policymakers draw on a range of evidence-types to make decisions (Oliver, this issue) and, unlike academics who tend to equate 'evidence' with 'academic research evidence', use a broader definition including surveillance data, market research, opinion polls and think tank opinion pieces in their formulation of policy.[1,2]. Research in the area has thus focused on overcoming the barriers to EBP to increase the uptake of research evidence,[3] but this sidesteps the importance of describing empirically the policy process and the activities and preferences of policymakers in their own environments.[4] Empirical description of policy processes would enable identification of the types of information valued and used regularly, and hence help researchers to develop more useful forms of knowledge.

Recent research suggests that policymakers often use personal contacts to find information and advice.[5] Acknowledging the importance of interpersonal connections, interventions such as knowledge brokerage have been developed.[6,7] Knowledge brokerage interventions often describe research-based individuals producing evidence summaries or co-producing research questions and outputs in conjunction with policymakers; i.e. acting as sources of information. However, being based in academic institutions, may lead to fewer contacts and less credibility with policymakers than individuals already embedded in the policy arena.[8,9]

In summary, little is known about where policymakers in reality find the evidence that they use in policy processes. It is equally unclear what types of evidence policymakers use or prefer, or what they do with it once they have found it.[10] Research suggests that some of these sources are likely to be individuals.[10] However, current approaches to exploring this question focus more on comparing narratives and perspectives of researchers and policymakers,[5,11-13] rather data about interpersonal relationships.[14-16] Social network analysis allows interpersonal relations to be captured and analysed quantitatively, providing a means of describing the social structure underlying interactions between policymakers.[17,18]

This study aims to identify the main sources of information and evidence for public health policymakers. We do not aim to identify the main types of evidence used or preferred by policymakers, which is addressed in another paper, this issue (Oliver et al 2014).

Methods

An electronic survey of public health policymakers across Greater Manchester (GM) was carried out. The survey was piloted in a comparable population (for details see Oliver et al 2014, this issue). The sampling frame was developed using a survey of health-policy organisations likely to affect GM. These included councils, health service providers, health surveillance and universities. From these, a list of individuals likely to influence public health policy in or affecting GM (finding, analysing or producing information, producing or implementing policy) was constructed (n = 152). All individuals working at a deputy-Director level and above (within the NHS and council; equivalent was Professor level at university) were included in the sample because we aimed to gather responses from individuals able to take or directly influence policy decisions. Regional and national actors were included where they had direct influence over GM. Where respondents nominated individuals as sources of information through network questions (see Oliver et al 2013 for further details), if they fell within the sampling frame, these were followed up. Individuals were contacted by email initially, and non-responders followed up by telephone.

To identify the main sources of information and evidence used by policymakers, respondents chose from a list of possible sources of information sources, and were also given a free-text box. Next, policymakers were asked to nominate (providing job titles and names) other individuals or organisations from which they received information (summarised in table 1).

[Table 1 here]

Because each question generated comparable data (e.g. question one could be answered by providing named individuals; question 2 could generate answers already on the list such as NICE), the data were collated. We analysed (a) types of sources by category (resources, organisations, individuals and the media) and then (b) named identifiable individuals were analysed using network data.

Therefore three types of analyses were possible:

1. What sources from the list were chosen most frequently?
2. Which *types* of people (job titles) were chosen most frequently?
3. Which specific named individuals were chosen most frequently?

Frequency analyses were used to identify the main sources and types of people acting as sources of information. Network analysis was used to analyse which specific individuals were chosen most regularly, using UCInet [19]. This analysis uses a relational approach to map ties between individuals named in the data collection, and can be used to identify key individuals by counting how frequently they were nominated, known as a centrality score.[20] The characteristics (job title/sector) of key individuals were gathered together with the network data. For the network analysis, all participants were given an ID number and otherwise anonymised. We also tested whether individuals were more or less likely to nominate people from the same sector (NHS/Council/University/Government/other) or clinical background (medic/non-medic) using a whole-network homophily score. This generates a score between -1 and 1, where -1 means overall people nominated people like themselves, and +1 means people nominated people very unlike themselves. Survey and network findings were compared to explore the utility of each approach.

This study was presented at local NHS and University ethics boards and considered not to need ethical approval.

Results

152 policymakers were contacted to take part in the survey, and useable responses were received from 68 (response rate 48%).

The most frequently chosen sources of information from the list provided were 'experts in the area' (n = 36) and government websites (n = 36) (see Figure 1).

From the 'other' categories, respondents named specific organisations, other websites, individuals, and job titles. For ease of analysis, these were categorised by type (organisation, resource, other people, the media) and are described below.

Respondents (26% of all responses) claimed to use a range of *resources,* including online and/or paper journals, with websites such as the BMJ named multiple times. Other resources named included PubMed, the NHS library, Joint Strategic Needs Assessments (JSNA), and local Annual Public health reports. Most people chose multiple types of resources, and all respondents who chose 'paper journals' also chose 'reviews', and 'online journals', with one exception.

The most frequently chosen category of sources of information were ***organisations***, which comprised 44% of all responses. Other organisations from the pre-prepared list included professional bodies such as the Royal Colleges, and from the free-text answers, organisation such as the King's Fund, the regional Strategic Health Authority (SHA), the National Treatment Agency and local charities. Universities and other academic institutions were rarely mentioned.

Other people were a major source of information (31% of all responses), with 'experts' being chosen as the second-most often selected source of information from the pre-

prepared list, just after government websites and comparable to NICE. Other people (colleagues and friends) were also chosen frequently by respondents (n = 31). From the free-text, respondents named specific categories of people who acted as sources of information; mainly professional public health staff, including Directors of Public Health (DPH) (n = 17) and their teams of consultants and analysts (n = 14). Other categories included council officers (n = 12), and Chief Executives (n = 5).

Finally, the ***media*** was named as a source of information by 9 respondents, which included Twitter, broadsheets, and the web.

Exploring the role of individuals in more depth, we analysed the data generated by question 2 (see Table 1). Not all respondents named individuals, providing instead job titles or generic descriptions (such as 'the local public health team'). In order to capture this information, we analysed these data using job title to calculate which types of professionals from which sectors were most frequently reported to be sources of information (see Figure 1).

By far the most popular category named, DPHs - the local accountable public health professionals - were nominated by 17 respondents. DPHs are employed by local health organisations to co-ordinate and lead public health activities. Other NHS staff were also nominated, including public health consultants. Council officers (n = 12) and professors (n = 8) were also nominated. This agreed with the previous findings presented above.

Because these were identifiable individuals, we could use network analysis to identify the key sources of information within this policy community in GM. The ties in Figure 2 indicate a nomination for being a source of evidence and information (see online for colour).

[Figure 2 here]

As this figure indicates, respondents named a large group of individuals as sources of information, who were from a range of sectors. The characteristic star patterns around the periphery of the diagram show that several respondents named multiple individuals who were not named by any other respondent; frequently, these were DPHs nominating members of their teams. However, the sociogram shows a relatively connected core, where three main individuals (ID221, ID157 and ID202) are by far the largest nodes in the network, with ID221 receiving 14 nominations, nearly twice as many nominations as the next largest (ID157 who received 8) (see table 2). This shows that there is a small group of individuals – none public health professionals – who nominated each other as sources of information. Interestingly, one of the main sources (ID202) was a clinician by training, but most of the other main sources were not. Academics were nominated occasionally but as the sociogram shows, they were not central within the network.

[Table 2 here]

ID221 was a mid-level manager employed in a local public health network. He was not a trained public health professional, but received the most nominations for 'being a source of evidence for public health policy'. ID157 and ID202 were both employed by local organisations that aimed to analyse public health and other existing datasets, and produce locally-tailored advice for policymakers. In effect, they were responsive to requests from local government and local NHS organisations. All three were affiliated with organisations associated with the NHS in some form, though none were clinicians.

Homophily analyses indicated people were slightly more likely to nominate those from other sectors than those from the same sector (i.e. NHS, councils, Universities, other (E-I index = 0.301)).

Again, although academics and researchers were part of the network both as respondents and nominees, none were central to the network, nor received significant numbers of nominations. As can be seen from the graph, academics who did respond often nominated other academics, rather than those from the policy community.

Discussion

Public health policymakers describe using a wide range of sources of information which they use when making decisions. The most frequently reported sources were NICE and governmental websites, but other people were also described as a major source of information. When analysing the professional categories of people named as sources, public health professionals were identified as the most important sources of information. However, the network analysis showed that mid-level managers in the NHS and councils were actually the most frequently reported persons from whom to obtain information. The homophily effect shown perhaps explains the high centrality of the three individuals marked out above. All three, but particularly ID 221, worked in roles which required them to bridge the NHS and local government sectors. Becoming known in both sectors as a representative of the other, and being known to understand the needs of the other sector and hence translate allowed them to become conduits linking different groups together. They were therefore all nominated by people from several sectors, whereas many of the NHS-only staff, such as the public health professionals, were nominated only by NHS colleagues.

Public health professionals and clinicians were not identified as important in the network data, nor were academics. 'Professors' were nominated several times as a category of people, but when the network data were interrogated they, as a class, were not central to the network.

The finding that other people are often a source of information confirms findings from other studies. An Israeli study describes how policymakers and professionals prefer to receive information through personal meetings.[21] *Haynes et al.* describe the criteria policymakers use to judge the trustworthiness of personal academic contacts,[5] and studies acknowledge the importance of trust and credibility in knowledge exchange.[3, 10] This interpersonal aspect of knowledge transfer is often acknowledged as important[6,14] but rarely exploited by interventions aiming to increase research uptake. For example, network analysis could be used to identify opinion leaders and create targeted dissemination strategies.[22] Knowledge translation interventions aim to introduce new individuals into existing policy communities. This requires the new individual to create good-quality relationships and integrate themselves into an existing network. It may be more fruitful to exploit the existing network structure rather than trying to alter it by imposing new actors, such as knowledge brokers. The role of interpersonal relationships in public policy processes is a fascinating one, and to be studied appropriately requires an in depth mixed methods inquiry (see, e.g Shearer et al 2014) [35]. However, this study addresses a separate point, which is the reliability and validity of general categorical survey responses with specific answers (in this named organisations and individuals as sources of information).

Directors of Public Health (DPH) were frequently chosen as sources of information, as were public health staff – however, individuals from these categories were not prominent in the network data. It is possible that these Directors were nominating their teams and vice versa – i.e. that information was gathered from within an organisation. This conflicts with other research on the topic, in which directors reported seeking information primarily outside their own organisation[23]. However, it is possible that in this study, some individuals in public health teams were accessing information from outside and sharing it with colleagues, although it has not been possible to test this hypothesis here, as responses were not sought from all members of the public health team. In addition, the existence of ten DPH in the conurbation may have artificially inflated the importance of the categorical finding that DPH

were important - for example, DPH may have felt they should nominate all their colleagues - perhaps rendering the contrasting network finding less surprising.

Academics and researchers were rarely represented in the network or the survey data. This corresponds with other research showing that policymaker awareness of academic research methods is low,[24] that academic research is often hard to find,[25] irrelevant and not helpful for policymakers' priorities,[3,26] and that academics are not often influential throughout the policy process.[9] As individuals, they were not shown to be sources of information; however, respondents did state they used journals and review summaries as resources, so it may be that academic evidence influences policymakers through use of these resources. The implication behind these findings is that while academic research may be perceived as useful or important for policy decision-making, few academics participate directly in the policy process by providing information directly to policymakers. Again, this tallies with existing research which shows that policymakers value their own experience above research evidence.[27] However, use of local data and other non-research evidence has also been described,[28-30] perhaps indicating a role for increased use and support of public health surveillance data by research communities.[31]

Together, these findings do not suggest that particular professional groups are more or less likely to be important sources of information – rather that there is an important role for interpersonal skills and relationship building, and that this type of interactional data should be a target for future research. [36]

Applying different methods to the same question inevitably generates different answers. Had we carried out in-depth qualitative analysis, we may have generated theory about the role of strategies to control knowledge, for example, but this was not possible within this study. By combining these approaches we hope to illustrate the strengths of network analysis (allows analysis of specific interpersonal/interorganisational relationships) compared with normal survey methods, which rely on broader categorical answers.

This study has several limitations. These data are from conurbation-level policymakers only. It is possible that policymakers at regional and national levels behave differently, but we were not able to test that hypothesis in this study. Moreover, it is possible that senior staff such as those contacted in this study used more junior staff as sources of information who were not themselves included in the sample. These individuals would have been counted as sources, but their own sources of information are not known. However, we aimed to collect data from those in a position to make decisions themselves.

Finally, during the data collection period for this study (Jan-Sep 2010) the UK Government published a new Health and Social Care bill [32] which lead to a huge re-organisation of public health and health services organisations. Because of this, the response rate may have been lower than desirable, which may have introduced bias, albeit probably non-systematically. However, it is still higher than for many other surveys of this type [34].

Conclusions

Public health policymakers are able to describe multiple and varied sources of information, including a wide range of individuals and professionals. This suggests that they want to use evidence, and use more and a broader range of evidence than is usually credited by academic researchers. This appetite for evidence does not appear to be being met by academic researchers, or by research evidence. However, it is not possible from this study to say whether an ability to name sources translates into using those sources, nor whether receiving evidence influences policy processes. Investigating these topics is a research priority for EBP researchers.

Network data indicated that mid-level managers in the NHS and councils acted as the main sources of information for this community. These types of actors are rarely considered targets for research, which seems to indicate a missed opportunity to influence policy by exploiting existing policy network structures. The difference between the survey and network findings indicate the importance of interpreting survey data with caution, and the utility of network analysis in identifying opinion leaders and providing a more nuanced picture than available through normal survey methods.

Both survey and network analyses provide useful insights into how policymakers access information. Network analysis offers practical and theoretical contributions to the EBP debates. Identifying individuals who act as key users and producers of evidence allows academics to target actors likely to use and disseminate their work.

Key points:

1. There is a large demand for evidence and information which is not being met by academics and researchers, or by research evidence.
2. Identifying the types of information (not exclusively research evidence) used by policymakers is a priority if researchers wish to understand and influence the policy process.
3. Network analysis identifies opinion leaders as targets for research and as sources of evidence for policymakers
4. Network analysis should be used identify major sources of information in policy communities, to enable maximum impact of academic research.

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Conflicts of interest:
None declared.

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