



LEEDS
BECKETT
UNIVERSITY

Citation:

Owusu-Addo, E and Cross, RM and Sarfo-Mensah, P (2017) Evidence-based practice in local public health service in Ghana. *Critical Public Health*, 27 (1). pp. 125-138. ISSN 1469-3682 DOI: <https://doi.org/10.1080/09581596.2016.1182621>

Link to Leeds Beckett Repository record:

<https://eprints.leedsbeckett.ac.uk/id/eprint/2635/>

Document Version:

Article (Accepted Version)

The aim of the Leeds Beckett Repository is to provide open access to our research, as required by funder policies and permitted by publishers and copyright law.

The Leeds Beckett repository holds a wide range of publications, each of which has been checked for copyright and the relevant embargo period has been applied by the Research Services team.

We operate on a standard take-down policy. If you are the author or publisher of an output and you would like it removed from the repository, please [contact us](#) and we will investigate on a case-by-case basis.

Each thesis in the repository has been cleared where necessary by the author for third party copyright. If you would like a thesis to be removed from the repository or believe there is an issue with copyright, please contact us on openaccess@leedsbeckett.ac.uk and we will investigate on a case-by-case basis.

Introduction

Globally, there has been an increasing call for the use of evidence in health promotion and public health decision-making over the past few decades (Evans, Hall, Catherine, Jones & Neiman, 2007; Green, Tones, Cross & Woodal, 2015). This call for the use of evidence in public health decisions need not be seen as a mere rhetoric, as there exist a number of health priorities for which strong evidence is needed to justify effective intervention. Similarly, the call is underpinned by the changing dynamics in the new public health arena (Baum, 2008) coupled with the recent global financial crisis, which has compelled most governments in high-income countries (HICs) and low-and middle-income countries (LMICs) as well as donor agencies to cut down on budgetary allocations for public health and health promotion interventions. The case becomes more challenging as most public health services are now being moved to the local level in both HICs and LMICs alike (Bangdiwala, Fonn, Okoye & Tollman, 2010; Green, 2013) thus placing a huge responsibility on local public health managers. To meet these global challenges, local public health managers need to think globally and act locally, and to also strategically equip and reorient themselves to the basic tenets of evidence-based public health (EBPH).

The concept of evidence-based practice was first used in clinical medicine (evidence-based medicine). Its effectiveness gave room for integration of the basic principles of evidence-based practice into public health (Frommer and Rychetnik, 2003). EBPH has been defined as “the development, implementation, and evaluation of effective programmes and policies in public health through application of principles of scientific reasoning” (Baker, Brownson, Dreisinger, McIntosh & Karamelic-Muratovic, 2009, p. 342). EBPH aims at ensuring that policy and practice are informed by reliable and strong evidence so as to address uncertainties in public health decision making and setting of priorities (Brownson, Fielding, & Maylahn, 2013; Rychetnik, Hawe, Waters, Barratt & Frommer, 2004).

In the field of public health and health promotion, there has been much debate about the type of evidence that can be used to aid decision-making. Though it is beyond the scope of this paper to engage in this debate, there is an emerging consensus that since public health and health

promotion focus on addressing the wider determinants of health, a broad range of evidence, including both quantitative and qualitative evidence and trial and non-trial evidence, are required for decision-making (Petticrew, 2013). Greenhalgh (2014) adds that to ensure optimal use of evidence in public health, there is the need for a co-production of evidence which takes into consideration local context and the perspectives of policy makers and other users of the evidence.

It has been argued that countries in sub-Saharan Africa can double their efforts in improving health outcomes only if measures to prevent death and disability take into consideration local conditions and if choices of health interventions and policies are based on solid scientific evidence (Oxman, Lavis, Lewin, & Fretheim, 2009). McMichael, Waters and Volmink (2005) further argue that due to limited resources, it is important that LMICs invest in public health interventions that are effective. Therefore, the call for the use of evidence in public health decisions has become very strong in LMICs where there is a high burden of disease and illness. Public health primarily aims to identify and set priorities among competing health issues; develop realistic, acceptable and effective health policies; implement effective and appropriate interventions; evaluate the effect of interventions; respond to public health emergencies; and allocate human and financial resources (Pappaioanou et al., 2003).

Since 1996, the health system in Ghana has been decentralised with the creation of the Ghana Health Service (GHS) as an autonomous institution with structures at the national, regional, district and sub-district levels (Ghana Health Service and Teaching Hospital Act, 1996). At the community level is Community Based Health Planning and Services, which are responsible for the provision of basic community health services. Within the decentralised health system, District Health Directorates (DHDs) in collaboration with the District Assemblies are the key players in local health systems and have been assigned the primary responsibility for public health service beyond the hospitals. At the national level, the Ministry of Health provides policy and regulatory frameworks for the health sector and the GHS serves as the service delivery body (Saleh, 2012). One of the reasons for decentralising health services was the fact that the district is the place where people's everyday lives unfold, and the districts therefore have a number of

opportunities to design and implement interventions to improve health at the local level (Couttolenc, 2012). Prioritisation, planning and implementation of local health interventions are therefore central tasks of the DHDs (Bossert & Beauvais, 2002). It would therefore be beneficial for DHDs to use evidence throughout the policy process. The aim of this research was thus to examine the level at which evidence is used in public health service in rural Ghana from the perspectives of District Directors of Health (local health managers). This Ghana case study would provide useful lessons and insights to global policy makers and local public health managers working in similar contexts as to date, studies examining the use of evidence in public health service have largely focused on HIC settings.

Methods

Study design

The exploratory approach of qualitative description (Sandelowski, 2010) was used in this study. Qualitative description is a naturalistic inquiry which primarily aims to present a rich, clear description of an experience or an event (Neergaard, Folesen, Andersen & Sondergaard, 2009). Given the gap in the literature regarding the subject matter, qualitative description offered the best approach for the study as it allowed for the generation of in-depth information grounded in the local contexts. This helped to describe the health managers' experiences of the use of evidence in local public health service.

Study setting

Ghana, a lower middle-income country on the west coast of Africa, is divided into 10 administrative regions and 216 decentralised districts. In line with Ghana's decentralisation policy, which came into being in 1988 (Ahwoi, 2010), the health sector was decentralised in 1996. This led to the establishment of the GHS as a separate entity to manage and operate all subnational health facilities. GHS has the mandate to promote access to health services at the community, sub-district, district and regional levels (Ghana Health Service and Teaching Hospital Act, 1996). Of the 10 regions of Ghana, GHS has gradually deconcentrated operational

functions to its Regional Health Directorates and especially DHDs (Couttolenc, 2012). At the Regional Health Directorate level, the Regional Director of Health has oversight responsibility for health care delivery whereas the District Director of Health is responsible for effective health care delivery at the local level. To date, nearly all 216 districts in Ghana have DHDs. Ashanti region was chosen for this study since it is the most populous administrative region in Ghana. The region also has the largest number of DHDs (30) among all the 10 regions.

Participants and sampling

A critical case purposive sampling strategy (Patton, 2015) was used to select the local health managers as information-rich cases who have leadership role in translating evidence into practice at the local level. The following criteria were used in selecting the participants: (a) minimum of 2 years working experience as a local health manager, (b) working in public health unit at either the municipal or district level (c) willingness to participate in the research. The use of purposive sampling ensured diversity of participants' views, opinions and experiences.

Due to the busy schedules of the local health managers, a pragmatic approach was chosen to contact them for the interviews. First, a complete list and contact details of all Municipal and District Health Directors working in the Ashanti Region were obtained from the Regional Health Directorate. The Regional Director, having showed interest in the study and given approval for the research, sent letters to all the DHDs requesting the support of the local health managers for the study. Following this, the first author contacted the local health managers via telephone to ask them to participate in interviews that aimed 'to discuss and learn more about how they use evidence in local public health service'.

Twenty-two of the 30 Municipal/District Directors of Health met the inclusion criteria described above. An appointment was booked to conduct interviews with them at their most convenient time and place. Preliminary analysis was done after each interview and by the 11th one, it was realised that data saturation had been achieved (Ritchie, Spencer & O'Connor 2008; Kvale & Brinkman, 2014). Following this, it was decided that there was no need to follow up with the other Directors who were willing to participate in the interviews if the data collection had been

extended. This decision was made on the basis that interviewing these additional Directors might not lead to more information.

Data Collection

Semi-structured in-depth individual interviews were conducted with the participants (Tracy, 2010) in 11 DHDs in Ashanti Region between November 2013 and May 2014. The topic guide for the interviews covered the following areas: the meaning of evidence, EBPH, and sources of evidence for local public health service. Most of the interviews took place in the offices of the respondents (Wiles, Crow, Heath & Charles, 2008). Interviews were conducted in English by the first author with support from trained research assistants who took notes to record emergent thoughts and ideas. The individual interviews were recorded (Tracy, 2010) and lasted between 45 and 60 minutes. At the start of each interview, verbal reaffirmation of consent to the use of a voice recorder was requested. Participants were invited to ask that the voice recorder be switched off if at any time they felt uncomfortable with recording.

Data analysis

Thematic analysis following the steps outlined by Braun and Clarke (2006) and Attride-Stirling (2001) was used to help identify relevant constructs, concepts and categories in the interview transcript. The interviews were first transcribed verbatim by the research assistants with the first author checking the transcripts against the audio recordings for accuracy. The field notes taken by the first author and the research assistants were added to the interview transcripts to provide a complete data set for the analysis. The combined transcript was read several times by the first author to identify meaningful units of text at the familiarisation stage. Codes were developed from the key words in the transcript to ensure that the participants' voices were accurately captured to preserve the richness of the data, and the context of the interviews. Shorthand codes were written on both margins of the transcript using coloured highlighting pens to mark out different ideas and concepts. A total of 35 codes were generated from coding the transcripts. The second author independently examined the transcripts and critically inspected the first author's

coding scheme and comparisons to ensure content validity and trustworthiness (Ritchie, Spencer & O'Connor, 2008; Leung, 2015). After discussion, all authors agreed on the codes.

The codes were subsequently subjected to a thematic network analysis (Attride-Stirling, 2001) involving the grouping together of codes into basic themes, grouping together basic themes into higher order and more interpretative organising themes (see Table 1). The themes were developed inductively in order to stay close to the data as required in qualitative description (Sandelowski, 2010). However, to organise and summarise the emerging patterns, an interpretive process was used to gain broader meanings. The themes were cross-checked with the transcript to ensure that they were coherent and consistent with the data to maximise their reliability (Fereday & Muir-Cochrane, 2006).

To ensure trustworthiness and authenticity, the following strategies were employed: investigator reflexivity, verification of data and codes through peer checking and member checking.

Ethics

Ethical approval for the study was granted by the Committee on Human Research Publication and Ethics at the Kwame Nkrumah University of Science and Technology, Ghana. Though the Regional Director sent letters to the DHDs indicating his support for the study, participants were under no obligation to participate in the study. During the data collection, each participant received oral explanations of the study and informed consent was obtained. Participants were informed that they had the right to withdraw from the study at any time. Confidentiality was addressed in this research during data collection and data cleaning. To avoid deductive disclosure, during the data transcription, codes were used and information that identified respondents such as names or addresses were removed. To protect anonymity and confidentiality, we decided not to include any identifying information in the quoted extracts.

Results

A total of 11 local health managers were involved in this study. Due to the rotational nature of their work, all the participants indicated that they had worked across the length and breadth of the country as District Directors of Health. There were 5 female and 6 male participants. Nine of the participants had obtained a master's degree in public health and the remaining 2 had obtained a bachelor's degree in nursing. Three were working at the municipal level whilst 8 were working at the district level. The number of years spent in their current position as local health managers ranged from 2 to 13, and the number of years in public health service ranged from 10 to 28. Only one of the health managers indicated that evidence-based practice/public health was taught as part of the master's degree programme.

As shown in table 1, three organising themes emerged from the interview transcripts: understanding of the concept of EBPH, the process of using evidence and the value of evidence in public health practice. These organising themes and their related basic themes are discussed below to explain the global theme: use of evidence in local public health service.

Table 1. Global Theme: Use of evidence in local public health service

Codes	Basic themes	Organising themes
Does it work	Evidence is what works	Understanding of the concept of evidence-based public health
Proven to work	Evidence is what is practicable	
Does it yield results	Practice based on available information	Use of evidence in local public health service
Data	Evidence can be quantitative or qualitative	
Practice	Evidence is about data	
Scientific proof	Interventions that yield results	
Choose options		
Redirecting resources		
Innovation		
Information		
Quantitative		

Qualitative Creativity	Evidence helps in choice making	The value of evidence in public health practice
Problem identification	Evidence results in innovation and creativity Identifying problem areas for interventions through evidence	
Acceptability of interventions	Evidence helps in focusing interventions	
Get focused	Financial sustainability	
Win support	Pressure from donors	
Planning	For planning, priority setting and implementation	The process of using evidence
Set priorities	Evidence from the records and programme reports	
Getting funding	Evidence from routine data collection	
Available resources	Contact and relationships	
Academic world	Local best practices	
Database (DHIMS)		
Reports		
Monitoring		
Evaluation		
Routine data		
Research		
Records		
Personal data		
Personal experience		
Learn from others		
Getting people along		
Donors		

Understanding of the concept of EBPH

The local health managers' views on the concept of EBPH centered on the meaning of evidence, what EBPH looks like and the sources of evidence.

In defining evidence, the local health managers used words and phrases such as 'proof', 'what works', 'the facts', 'tried and tested' and 'data'. All the health managers noted that evidence can be both quantitative and qualitative. However, they noted that in practice, more weight was

placed on quantitative evidence, which was seen as the ‘fact’ to inform decisions. Some illuminating quotations from the local managers include the following:

My understanding of evidence is that...what has been proven to work. So the proof – the proof, scientific proof – is what evidence is. (Interview 1)

Yeah, yes evidence basically we depend on our routine data to generate some kind of information and use that as evidence. Our reports too that is generated through the health information system, we use that to prioritise. (Interview 2)

In responding to a question on what comes to mind when you think about EBPH, all health managers noted having some familiarity with the concept of evidence-based practice, although perceived level of expertise and the extent to which EBPH was practiced varied. Generally, EBPH was seen as using ‘scientifically proven’ evidence to inform health decisions:

Evidence-based public health is when you are using what has been proven to work in taking health decisions and in implementing health interventions. For example we know that evidence available indicates that Jadelle [hormonal implant] in family planning is very effective in preventing pregnancy – this has been proven. (Interview 1)

So yes, evidence based public health is public health practice based on proof, scientific proof, either local, by local data collection or through the net or monitoring systems_the proofs that this interventions work; that is evidence based public health. (Interview 7)

Though the managers’ definition of evidence included the use of terms such as ‘what works’ and ‘tried and tested’, largely missing from accounts on what EBPH looks like was the need to identify and adapt interventions and strategies that have been shown by research to work. This cast some doubts about their proper understanding of the concept of EBPH and its application in practice.

The predominant sources of the managers’ ‘scientifically proven’ evidence were surveillance data, records from health facilities, personal experiences, local best practices, monitoring reports and, to a limited extent, local operational research evidence:

Yes, scientifically proven and it can be through routine data collection, it can even be any structured system which will prove that this is an issue. So a proof that we have a problem or we have a challenge or this is what is happening and we need to do something about it. So basically it is a proof, yeah and it can come from these sources. (Interview 2)

That is data. Yeah, that is all about data, yes, you need to, you can only prove it by means of data...by looking at reports, yes (Interview 4).

A few of the health managers indicated that they use published research only when they are writing project proposals to seek for funding from external organisations:

Locally, we hardly use primary research because they [higher level actors] do the prioritising and planning stuff over there. That is why I was talking about the push factor. So, generally at our own level, we don't use journals and those things, yes. If we are developing a project proposal then maybe we will read journals. (Interview 3)

The managers noted with a concern that though evaluation constitutes a key source of evidence to aid health decisions, in practice, majority of their public health interventions are not evaluated to help build on evidence-based practice:

We don't evaluate our programmes but evaluation itself can also give us evidence that this...does this intervention actually work. (Interview 6)

One of the things we lack in the health sector is evaluation... we don't evaluate most of the strategies we use and our programmes as well (Interview 10).

In responding to a question on whether the hierarchy of evidence was resorted to when thinking about the source of evidence, all the health managers indicated that they were not aware of the hierarchy of evidence. In practice, however, priority was given to personal experiences, local best practices and in the case of research, the authorship of research evidence. Research and reports from the World Health Organisation were said to be of high quality and were used to inform health decisions. The District Health Information Management System (DHIMS), a flagship initiative of the GHS which collects routine data on health services, morbidity and disease as part of the surveillance, was also seen as a prized source of information to health managers when planning, budgeting and making decisions.

With regard to the use of research evidence, most of the managers indicated that limited knowledge in determining the relevance and applicability of research evidence was a hindrance to its uptake in decision-making. Others also expressed a concern about the lack of relevant local research evidence to aid decision-making:

I think that what we need as managers of the local public health sector is training in this evidence-based public health including how to search for credible scientific evidence and make judgement about what is effective or not. (Interview 8)

As local public health managers, we need a lot of training in evidence-based practice and this should start from the schools, and should cover all categories of public health workers – so it's important to incorporate this into the curriculum in our schools. (Interview 4)

Local health managers are decision makers but you don't make decisions just in a vacuum, you make decisions based on available evidence – evidence that you have around you. So for me I feel that managers should be trained on how to appraise other journal papers which have been written elsewhere and then we will be able to use whatever information that we have to make decisions. Relevant local research evidence is also lacking. (Interview 6)

This suggests that the minimal uptake of research evidence (both local and external) in local public health decisions and the lack of identification of interventions that have been shown through research to work are related to the participants' lack of training in EBPH. For instance, some health managers stressed the need to incorporate training in evidence-based practice into the curriculum of public health and allied health programmes in Ghanaian educational institutions to introduce graduates to EBPH practice.

The process of using evidence

The local managers described the level at which evidence was used in local public health service. Generally, some form of evidence was used at the three levels of health decision-making process: prioritisation, planning and implementation. The majority of the health managers noted that evidence use was low at the prioritisation stage of health decision-making since most of the health interventions were said to be directly coming from policy makers at the national level or

donor agencies. Across all interviews, the phrase ‘push system’ was frequently used by the respondents. The ‘push system’ was used to refer to the situation whereby local health managers were asked to implement certain kinds of interventions which were said to have been ‘dumped’ on them by higher level actors. One manager voiced his frustration about not being able to prioritise:

I will say we are incapacitated because you don't have your own will to change things, so if you have your own will to change things, then you can prioritise whatever... then you can say, this intervention is what we think will work, you understand? But we are incapacitated because somebody sits somewhere and say, and says that this is the intervention which will work for you (Interview 3).

The managers noted that in taking decisions on what to prioritise given the district's own available local resources, local evidence particularly surveillance data and occasionally operational research evidence were used.

...but when we have our own funding and then we are confronted with where to invest, or create an intervention to solve a health problem, then we sit down and analyse our routine data or carry out an operational research and say that this has worked over the years so if we invest our resources this way, we will be able to make a difference. (Interview 4)

The health managers further noted that evidence was also less used at the planning stage in situations where interventions had been initiated by higher level actors. At the planning stage, the managers felt that community views and their personal experiences could have been used in determining which local approaches and methods would yield the best results. However, in most cases they were denied this opportunity, particularly as interventions had been prioritised and designed at the national level or by multilateral organisations:

Resources are scarce so in planning interventions, you have to stick to what has been proven to work...the evidence available will let you know which of the options to choose – but in most cases we're denied this opportunity. (Interview 5)

The use of evidence was, however, said to be high at the implementation level. The managers noted that in situations where interventions had been prioritised and designed at the national

level, local evidence in the form of community experiences/feedback, monitoring reports and professional experiences were used to guide the implementation of the intervention:

You can look at your own data that you have generated locally, you analyse it to suit your local conditions and you will know that, look this programme that we are implementing let's do it this way because that is what the local data is telling us. So basically, it is the data that we generate, which advises us on how to go about the implementation of the activities. (Interview 9)

Generally, the process of using evidence commenced with making a decision about the direction of a programme which had been already prioritised and planned by other high level actors and then various sources of evidence at the local level were used to justify the decision:

We are not too sure whether those up there [national level actors and donor agencies] use evidence in setting the priorities or for designing the projects before asking us to implement them. But at our level we have to gather whatever evidence that is available to justify the decisions and also direct our interventions. (Interview 11)

The value of evidence in public health practice

All the health managers acknowledged the importance of using evidence to inform health decisions. Throughout the interviews, it was emphasised that it is a requirement now that all public health interventions are informed by evidence. The use of the slogan: 'where is the evidence' was thus frequently quoted by the respondents during the interviews. One health manager for instance, noted:

Now if you don't show the evidence no donor agency will give you money. Even at the local level everybody is talking about where is the evidence. So using evidence is important these days. (Interview 7)

For these health managers, evidence must be used in local public health service so as to meet donor agency requirements and also secure funding for health interventions. The use of evidence in implementing health programmes/projects was also said to give some level of credibility to the intervention and also helped to focus interventions. The local health managers further noted that evidence is important for effective and efficient planning of interventions as captured by the following quote:

If you really want to plan and plan well and get good results, certainly you need some kind of supportive evidence that will be able to guide you to achieve the objectives that you want to – want to reach. Evidence-based practice is also important as it helps prevent waste of resources – it helps to prioritise where resources should be expended. (Interview 10)

At the local level, it was mentioned that evidence was critical to securing the political will for health interventions. One of the managers shared an instance where at a local assembly meeting, a proposal submitted to secure funding from the District Assembly to carry out an intervention which aimed to educate communities on the appropriate use of insecticide-treated bed nets was strongly opposed by the assembly members, who demanded proof of the effect of such public health education programmes before approving the proposal. The local health manager who uses evidence to inform decisions was thus said to be creative and innovative and could win the required political will. All the health managers indicated that evidence provides justification for their work:

Evidence is important because as public health practitioners we need to provide justification for what we do. So we always have to justify what we do to convince some people, you see. (Interview 5)

Discussion

To our knowledge, this study is the first of its kind to examine the use of evidence in local public health service in Ghana from the perspectives of local public health managers. In this article, we have clearly described Ghanaian local public health managers' understanding of EBPH, how and why they use evidence in the decision making process, and their perceived barriers to the use of evidence in local public health service.

Perspectives on EBPH

The findings suggest that the participants in this study had a narrow perspective on EBPH as they saw the concept as the use of 'scientifically proven evidence' to aid public health decisions. The participants' main sources of evidence were data obtained from the District Health Information Management System, epidemiologic or qualitative data, personal experiences and monitoring

reports. This suggests that knowledge that is sufficiently framed as ‘scientific’ can easily be accepted as true or valid. At one level, this finding is in line with the wider literature which suggests that many sources of evidence, including data, are used in public health decision-making (Armstrong, Doyle, Lamb & Waters, 2006). However, local health managers should note that the scope of EBPH process is much broader, and entails making decisions on the basis of the best available peer-reviewed evidence, applying program-planning frameworks, using data and information systems systematically, making use of community perspectives; conducting sound evaluation, and disseminating what is learned (Brownson et al., 2013).

Use of research evidence

The use of strong research evidence on effectiveness of interventions and strategies to aid public health decisions has been widely acclaimed (Lavis et al., 2009; Orton et al., 2011). Surprisingly, the health managers in this study had a minimal use of research evidence across the three stages of the decision-making process. This can be explained by the fact that the local managers had limited knowledge in translating research into practice and also complained about the lack of access to relevant primary research produced locally. Lack of relevant primary research and skills have been reported in the literature as challenges to evidence-based practice (Oliver et al. 2014).

Within the field of public health, systematic reviews have been identified as the strongest form of evidence to inform health decisions and interventions (Higgins & Green, 2008; Lavis et al., 2009; Oliver et al., 2014). In this study, however, with the exception of one health manager who indicated familiarity with systematic reviews, all others were not familiar with systematic reviews and as a result did not use them in their practice. This finding supports Waters, Doyle and Jackson’s (2003) assertion that systematic reviews are well advanced only in HICs as compared to LMICs. Despite this claim, it is important for local health managers in LMICs such as Ghana to be exposed to other sources of evidence, including systematic reviews of various kinds, in addition to the routinely collected local data. This is particularly important as there are some local health decisions especially at the prioritisation and planning stages that have far-reaching consequences and would require robust local and external research evidence. For

instance, in Uganda, aside routine monitoring and evaluation evidence, and local people's community perspectives, rigorous research evidence (both local and external) was instrumental in changing the malaria treatment policy (Nabyonga-Orem, Ssengooba, Macq, & Criel, 2014). Clearly, information from research evidence can play an important role in identifying what programmes may be applicable and effective to implement at a local level, and how these might be operationalised, taking cognisance of the local context.

In making judgements about the quality of evidence used to aid health decisions, the local managers' 'hierarchy' of evidence had nothing to do with the traditional hierarchy of evidence whereby randomised controlled trials are the 'gold standard' of effective interventions. They rather prioritised their personal local experiences and best practices as the highest form of evidence for health decisions. Preference for local evidence has been reported in a similar study in Uganda, where district health managers prioritised local evidence generated from routine monitoring and evaluation and reports from service providers (Nabyonga-Orem and Mijumbi, 2015). The managers in this study expressed a concern about the methods used to gather research evidence. They stressed that the lived experiences of the local community who are the ultimate beneficiaries of public health interventions should not be discounted in evidence generation. In this framing, the managers draw upon their several years of working with communities which suggest that community members' knowledge, perspectives, and experiences are key in identifying priority areas as well as determining what interventions might work or might not work in a particular setting. The managers' use of research evidence to inform decisions without recourse to the orthodox 'hierarchy' of evidence clearly points to the potential difficulty that might be associated with its application in public health practice. This supports Petticrew and Roberts' (2003) argument that what would be helpful for public health practice is a framework to guide the use of evidence rather than a hierarchy of evidence.

Why use evidence?

Local health managers in this study saw many benefits to using EBPH approaches, including better, more effective, programme and policy initiatives; improved decision making; and the likelihood of obtaining funding for interventions. This framing of the value of evidence in local

public health service by the managers is worthy of note. Though it captures some aspects of the importance of using evidence in public health practice, it misses out on its key value, which is to improve population health and also provide knowledge about public health problems and consequences (Brownson et al., 2009, 2013; Green et al., 2015). However, as we have shown, these local health managers work within a complex bureaucratic governance structure where both the central and local government are more concerned with the provision of physical infrastructure than public health priorities. In this case, local health managers become overly concerned with the use of the best available local evidence to justify public health interventions such as health education and screening in order to get the needed political will and to secure funding for these interventions. These findings have been reported in a similar study in Denmark (Larsen et al., 2012) and in Uganda (Orem, Mafigiri, Nabudere & Criel, 2014) where public health managers noted that the use of evidence contributes to improved decision-making, effective programme planning and the possibility of gaining local government support.

Barriers to EBPH implementation

The results of this study suggest that a number of factors affected the level of evidence used by local public health managers. The relatively limited use of various forms of evidence in prioritisation and planning of local health interventions was predominantly attributed to the top-down approach to prioritisation where policy makers and donor partners set the priorities, design interventions and then ask local health managers to implement them. Requests from politicians both at the national and local level, desires from various organisations and the exigency of the situation were similarly said to have impacted on prioritising local public health issues. It has been reported in the literature that other conditions than evidence such as policymakers' priorities, opinions and beliefs, and the interests of different stakeholders influence prioritisation and the planning process (Hanney, Gonzales-Block, Buxton & Kogan, 2003).

Similarly, all the participants mentioned that funding mandating evidence-based practices served as an important influence on their use of evidence. Though they saw positives with regard to some funding agencies demanding the use of evidence to inform interventions, they were, however, worried about situations where funders are categorical and restrictive with respect to

how the money should be spent. This was seen to undermine prioritisation of local initiatives as well as addressing the felt needs of communities. These findings have been reported in studies in New York State, where Weiss, Sosnowy, Maylahn, Katagiri and Pirani (2012) found that legislative buy-in and funding restrictions impacted on the use of evidence in local public health. In Uganda, Orem et al. (2014) also found that international priorities and funding restrictions influenced local public health decisions.

At the individual level, lack of training in EBPH was found to be a major barrier limiting the use of evidence in local public health services. This was seen to affect the managers' ability to systematically search, critically appraise and analyse the body of evidence as well as determining the applicability and generalisability/transferability of research evidence to better inform health decisions and interventions. Several studies have identified lack of training in EBPH as a major hindrance to incorporating evidence into health decisions and interventions in LMICs (Nagpal, Sinclair & Garner 2013; Oliver et al., 2014). For instance, a study by Orem et al. (2012) in Uganda which explored the perspectives of policy actors on improving the uptake of evidence in health policy development and implementation identified capacity building in evidence-based practice as key to improving the use of evidence in decision-making. Armstrong et al.'s (2014) study conducted among Australian local public health managers also revealed that managers who had received training in EBPH had increased level of confidence in searching, assessing quality and combing various sources of evidence to aid decision-making.

Policy and practice implications

The appreciation of the value of evidence-based practice by the local health managers shows the extent to which they are prepared to fully integrate evidence into local public health service, particularly at the prioritisation and planning stages. Of importance to policy and organisational culture, there is the need for comprehensive in-service training programmes that build and maintain common skillsets, language and the application of the principles of EBPH among local public health practitioners in Ghana to accomplish EBPH goals. An important step in this process will be the need to critically and comprehensively identify the training needs and supports for evidence-based practice among public health workers in Ghana. Similarly, the study

has revealed the need to incorporate a course on EBPH into the curriculum of public health and allied health training programmes in higher educational institutions to enable graduates to integrate evidence-based practice into their work upon graduation from school. This would, for example, help build the critical appraisal skills of local managers to handle the daunting task of sorting the valid, sound and useful literature from the non-useful to inform health decisions (Orton, Lloyd-Williams, Taylor-Robinson, O’Flaherty & Capewell, 2011), for improved health outcomes (Jacob et al., 2014). In addition to building the capacity of local health managers, it is important to ensure their free access to databases where they can access public health research evidence and synthesis.

The findings also indicate that a mixture of evidence, but more locally routine data and personal experiences than research and evaluations were influential in local public health decision-making. Providing a practice guideline to guide local public health managers on how to incorporate evidence into public health decisions would therefore be beneficial for improving EBPH practice (Brownson et al., 2009).

The results further suggest that it is important to address the structural barriers relating to national policy making practices, and donor agency requirements and priorities which actively undermine the principles and practices of EBPH. This is a major challenge facing local health managers in this study as it largely determines the extent to which they can use evidence to inform decisions within the complex political and financial landscape within which they work. Local health managers should thus be allowed the flexibility to prioritise, plan and implement interventions. In this way, they can draw upon the best available evidence combined with their expertise, unique local experiences, and the values and preferences of communities to inform public health practice. This is in line with other studies which have noted that context/localism influences the use of evidence in public health decisions (Kemmer, 2006; Woolcock, 2013; McGill et al., 2015; Phillips & Green, 2015) suggesting the need to integrate local best practices and experiences into public health decisions.

Research implications

The findings suggest that local health managers in this study largely resorted to local level data as the best available evidence. It is therefore important that the validity and reliability of these locally routine data are improved to enhance their quality for decision-making. While we support the argument that evidence is not necessarily findings from methodologically sound peer-reviewed research, we would suggest that for effective local public health practice, the level of use of research evidence should be improved across the decision-making process. The findings thus point to how academics can contribute to the uptake of evidence in local public health service by partnering with practitioners to co-produce local primary research and evaluation of local public health interventions to enhance the transferability and generalisability of study findings. Finally, this study only considered the views of local public health managers and, to complement this research, it would be interesting to know how local government officials outside the health sector use evidence to inform decisions which have potential influence on health and health inequalities.

Limitations

This study was based on a sample of individuals who were interested in participating and agreed to speak to us. Notwithstanding this, critical cases which we have used in this study can help in making logical conclusions. That is, given that DHDs in Ghana have similar characteristics, and that all the participants in this study had worked in various DHDs in the country on rotational basis, and had good knowledge about their other colleagues working in the same capacity, the views they expressed provide useful insights into the use of evidence in local public health service in Ghana. The findings of the study should be read bearing in mind that nearly all the respondents had no prior training in EBPH and this might have accounted for the limited use of evidence in decision-making as well as their perspective on EBPH. One of the reasons why EBPH has gained importance in HICs such as the UK, Canada, Australia and the USA may be that there exist training programmes and opportunities for public health professionals which allows for easy transfer and use of research evidence in decision-making (Gibbert et al., 2013).

Conclusion

The results from this research provide a unique case study of how EBPH is perceived and conceptualised by local health managers, and the level of use of evidence in a local public health setting. There has been an incessant call for the use of evidence in public health decisions in LMICs. However, the findings demonstrate that there is a lot more to be done to strengthen capacity of local health managers in order to promote the use of evidence in local public health service in LMICs.

Given that local health managers in this study prioritised local evidence in the form of data and personal experiences, as against research evidence in the decision-making process, this study supports the call that to increase the use of research evidence in local public health service, it is important that academics and practitioners co-produce research evidence that would be useful for decision-making (Greenhalgh, 2014). Finally, we argue that local health managers should be given more room to prioritise, plan and implement decisions, so as to increase the uptake of evidence in local public health service. That is, factors such as political buy-in and funding restrictions are beyond the control of local health managers; thus, to improve the use of evidence in local public health service, these structural barriers should be addressed in addition to strengthening institutional capacity for EBPH in Ghana.

References

- Ahwoi, K. (2010). *Local government & decentralisation in Ghana*. Unimax Macmillan: Accra.
- Armstrong, R., Doyle, J., Lamb, C., & Waters, E. (2006). Multi-sectoral health promotion and public health: the role of evidence. *Journal of Public Health (Oxf)*, **28**, 168–72.
- Armstrong, R., Waters, E., Moore, L., Dobbins, M., Pettman, T., Burns, C., Swinburn, B., Anderson, L., & Petticrew, M. (2014). Understanding evidence: a statewide survey to explore evidence-informed public health decision-making in a local government setting. *Implementation Science*, *9*, article 188. DOI 10.1186/s13012-014-0188-7
- Attride-Stirling, J. (2001). Thematic networks: an analytic tool for qualitative research. *Qualitative Research*, **1**, 385-405.
- Baker, E.A., Brownson, R.C., Dreisinger, M., McIntosh, L.D., Karamelic-Muratovic, A. (2009). Examining the role of training in evidence-based public health: a qualitative study. *Health Promotion Practice*, **10**, 342-348.
- Bangdiwala, S.I., Fonn, S., Okoye, O., Tollman, S. (2010) Workforce resources for health in developing countries. *Public Health Reviews*, **32**:296-318.
- Baum, F. (2008). *The new public health*. Melbourne: Oxford University Press.
- Bossert, T.J., Beauvais, J.C. (2002). Decentralization of health systems in Ghana, Zambia, Uganda and the Philippines: a comparative analysis of decision space. *Health Policy and Planning*, **17**, 14–31.
- Braun, V., Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, **3**: 77–101.
- Brownson, R.C., Fielding, J.E., Maylahn, C.M. (2009). Evidence-based public health: a fundamental concept for public health practice. *Annual Review of Public Health*, **30**:175-201.
- Brownson, R.C., Fielding, J.E., Maylahn, C.M. (2013). Evidence-based decision making to improve public health practice. *Frontiers in public health services & systems research*, **2**, article 2
- Couttolenc, B.F. (2012). *Decentralization and governance in the Ghana health sector*. Washington DC: World Bank.
- Evans, L., Hall, M., Catherine, M., Jones, C.M., Neiman, A. (2007). Did the Ottawa Charter play a role in the push to assess the effectiveness of health promotion? *Promotion & Education*, **14**, 28-30.

- Fereday, J., Muir-Cochrane, E., (2006). Demonstrating rigor using thematic analysis: a hybrid approach of inductive and deductive coding and theme development. *International journal of qualitative methods*, **5**, 1-11.
- Frommer, M., Rychetnik, L. (2003). From evidence-based medicine to evidence-based public health. In: Lin V, Gibson B, eds. *Evidence-based health policy*. Oxford: Oxford University Press.
- Ghana (Government of Ghana). (1996). *Ghana Health Service and Teaching Hospitals Act (Act 525)*. Accra: Ghana Health Services.
- Gibbert, W.S., Keating, S.M., Jacobs, J.A., Dodson, E., Baker, E., Diem, E. et al. (2013) Training the workforce in evidence-based public health: an evaluation of impact among US and international practitioners. *Preventing chronic disease*, 10 article 148. DOI: <http://dx.doi.org/10.5888/pcd10.130120>
- Green, J., Tones, K., Cross, R., Woodal, J. (2015). *Health promotion: planning and strategies*. 3rd ed. London: Sage Publications.
- Green, J., South, J. (2006). *Evaluation: key concepts for public health practice*. Maidenhead: Open University Press.
- Green, J. (2013). Public health and local government: challenges and possibilities. CEIPS Discussion Paper 2013–01. Victoria: Centre of Excellence in Intervention and Prevention Science Limited.
- Greenhalgh, T. (2014). Evidence based medicine: a movement in crisis? *BMJ*, 348:g3725. Doi: 10.1136/bmj.g3725 .
- Higgins, J.P, Green, S. eds. (2008). *Cochrane Handbook for Systematic Reviews of Interventions (Version 5.0) updated February 2008*. Oxford: The Cochrane Collaboration.
- Hanney, S.R., Gonzales-Block, M.A., Buxton, M.J., Kogan, M. (2003). The utilisation of health research in policy-making: concepts, examples and methods of assessment. *Health research policy and systems*, **1**, article 2. Doi:10.1186/1478-4505-1-2.
- Jacob, R.R., Baker, E.A., Allen, P., Dodson, E.A., Duggan, K., et al. (2014). Training needs and supports for evidence-based decision making among the public health workforce in the United States. *BMC health services research*, **14**, 564. doi:10.1186/s12913-014-0564-7.
- Kemm, J. (2006). The limitations of ‘evidence-based’ public health. *Journal of evaluation in clinical practice*, **12**, 319–324.
- Kvale, S. & brinkman, S. (2014). *InterViews: learning the craft of qualitative research interviewing*. 3rd Ed. Thousand Oaks, CA: Sage.

- Larsen, M., Gulis, G., Pedersen, K.M (2012). Use of evidence in local public health work in Denmark. *International Journal of Public Health*, **57**,477–483.
- Lavis, J.N., Oxman, A.D., Grimshaw, J., Johansen, M., Boyko, J.A., Lewin, S. & Fretheim, A. (2009). SUPPORT Tools for evidence-informed health Policymaking (STP) 7: Finding systematic reviews. *Health Research Policy and Systems*, **7**(Suppl 1):S7. Doi:10.1186/1478-4505-7-S1-S7.
- Leung, L. (2015). Validity, reliability, and generalizability in qualitative research. *Journal of family medicine and primary care*, **4**, 324–327. doi: [10.4103/2249-4863.161306](https://doi.org/10.4103/2249-4863.161306)
- McGill, E., Egan, M., Petticrew, M., Mountford, L., Milton, S., et al. (2015). Trading quality for relevance: non-health decision-makers' use of evidence on the social determinants of health. *BMJ Open*, **5**:e007053. doi:10.1136/bmjopen-2014-007053
- McMichael, C., Waters, E., Volmink, J. (2005). Evidence-based public health: what does it offer developing countries? *Journal of Public Health*, **27**, 215–221.
- Nabyonga-Orem, J., Mijumbi, R. (2015). Evidence for informing health policy development in Low-income Countries (LICs): perspectives of policy actors in Uganda. *International Journal of Health Policy and Management*, **4**: 285–293. doi: 10.15171/ijhpm.2015.52
- Nabyonga-Orem, J. Ssengooba, F., Macq, J. and Criel B. (2014) Malaria treatment policy change in Uganda: what role did evidence play? *Malarial Journal*, **13**, article 345. doi: 10.1186/1475-2875-13-345.
- Nagpal, S., Sinclair, D., Garner, P. (2013). Has the NTD community neglected evidence-based policy? *PLoS Neglected Tropical Disease*, **7**(7): e2238. doi:10.1371/journal.pntd.0002238.
- Neergaard, M.A., Folesen, F., Andersen, R.S., Sondergaard, J. (2009). Qualitative description—the poor cousin of health research? *BMC Medical Research Methodology*, **9**, article 52. doi:10.1186/1471-2288-9-52
- Oliver, K., Innvar, S., Lorenc, T., Woodman, J., Thomas, J. (2014). Barriers and facilitators of the use of evidence by policy makers: an updated systematic review. *BMC Health Services Research*, **14**, article 2. doi: 10.1186/1472-6963-14-2
- Orton, L., Lloyd-Williams, F., Taylor-Robinson, D., O'Flaherty, M., Capewell, S. (2011). The use of research evidence in public health decision making processes: systematic review. *PLoS ONE* **6**(7): e21704. doi:10.1371/journal.pone.0021704
- Orem, J.N., Mafigiri, D.K., Marchal, B., Ssengooba, F., Macq, J., & Criel, B. (2012). Research, evidence and policymaking: the perspectives of policy actors on improving uptake of evidence in health policy development and implementation in Uganda. *BMC Public Health*, **12**, article 109. doi: 10.1186/1471-2458-12-109

- Orem, J.N., Mafigiri, D.M., Nabudere, H. Criel, B. (2014). Improving knowledge translation in Uganda: more needs to be done. *Pan African Medical Journal*, 17 Suppl 1, article 14. doi:10.11694/pamj.suppl.2014.17.1.3482.
- Oxman, A.D., Lavis, J.N., Lewin, S., & Atle Fretheim, A. (2009). SUPPORT Tools for evidence-informed health Policymaking (STP) 1: What is evidence-informed policymaking? *Health Research Policy and Systems*, 7(Suppl 1):S1 doi:10.1186/1478-4505-7-S1-S1
- Pappaioanou, M., Malison, M., Wilkins, K., Otto, B., Goodman, R.A. et al. (2003). Strengthening capacity in developing countries for evidence-based public health: the data for decision-making project. *Social Science & Medicine*, 57, 1925–1937.
- Patton, M. Q. (2015). *Qualitative research and evaluation methods*. Thousand Oaks, CA: London: Sage
- Petticrew, M., Roberts, H. (2003). Evidence, hierarchies, and typologies: horses for courses. *Journal of Epidemiology and Community Health*, 57,527-529.
- Petticrew, M. (2013) Public health evaluation: epistemological challenges to evidence production and use. *Evidence & Policy*, 9: 87–95
- Phillips, G., Green, J. (2015). Working for the public health: politics, localism and epistemologies of practice. *Sociology of health & illness*, 37, 491–505. doi: 10.1111/1467-9566.12214.
- Ritchie, J., Spencer, L., O’Connor, W. (2008). Carrying out qualitative analysis. In Ritchie J, Lewis J (eds). *Qualitative Research Practice*. London: Sage. pp. 219–262.
- Rychetnik, L., Hawe, P., Waters, E., Barratt, A., Frommer, M. (2004). A glossary for evidence-based public health. *Journal of Epidemiology and Community Health*, 58, 538–545.
- Saleh, K. (2012). *The health sector in Ghana: a comprehensive assessment*. Washington, DC: World Bank.
- Sandelowski, M. (2010). What’s in a name? Qualitative description revisited. *Research in Nursing & Health*, 33:77-84.
- Tracy, S.J. (2010). Qualitative quality: Eight “big-tent” criteria for excellent qualitative research. *Qualitative Inquiry*, 16, 837-851.
- Waters, E., Doyle, J., Jackson, N. (2003). Evidence-based public health: improving the relevance of Cochrane Collaboration systematic reviews to global health priorities. *Journal of Public Health Medicine*, 25, 263–266.

Weiss, L., Sosnowy, C., Maylahn, C., Katagiri, N., Pirani, S. (2012). Evidence-based decision making in local health departments. *Frontiers in public health services & systems research*, 1, article 3. DOI: 10.13023/FPHSSR.0103.03

Woolcock, M. (2013). Using case studies to explore the external validity of complex development interventions. *Evaluation*, 19, 229–48.