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An investigation into the barriers to and priorities for research engagement in health librarianship

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To date, there have been no studies that examine issues of research engagement exclusively within the context of UK health librarianship. This is the first and largest study of its kind and aimed to consider research participation in health librarianship, and answer the question, what are the barriers to and priorities for research engagement in health librarianship? A focus group attended by 7 participants was followed by a UK wide survey involving a total of 316 representatives from eight identified categories of health librarianship. The focus group reached consensus on the five key barriers and five key priorities to research engagement in health librarianship. The survey results revealed that research engagement in health librarianship is linked to a number of factors including organisational and professional cultures around research, perceived limited resources to support research, perceived opportunities for research, and a diverse understanding and perception of what research is amongst health librarians.

Keywords

Evidence-based Librarianship, Health Librarianship, LIS Research, Practitioner Engagement, Research Engagement, Research Participation

1. Introduction

The role of the health librarian is fundamentally associated with supporting the process of evidence-based healthcare [1]. Health librarians provide information services to all disciplines of health professional, health administrators and researchers working within the organisation in which they are placed. They work in a diverse range of settings including academic organisations, NHS and other healthcare organisations, and independent settings such as royal colleges, professional bodies and public health organisations. Health librarians support the evidence-based environment in which health professionals are expected to work, providing access to the evidence base, and skills in how to use it. In addition, they often provide information support for research activities, and within the clinical librarian role, can often operate within clinical teams [1]. Worldwide, the profession is supported by national professional bodies, eg. Chartered Institute of Library and Information Professionals (UK), American Library Association (USA), Canadian Library Association, and workforce numbers vary from country to country.

Because of the close relationship health librarians have developed with the concept of evidence-based medicine and health practice, they have also been significantly influenced by it [2, 3]. As a partial consequence of this, the concept of evidence-based librarianship has emerged in recent decades. As health library services provide and support development of the evidence which underpins healthcare delivery [4, 5], it is logical that the practice of health librarianship should be as evidence-based as the healthcare which it supports as there is a fundamental relationship between the two, and ultimately to the impact on healthcare delivery. Health librarians are acutely conscious that the work they do should have a positive impact on the outcomes of patient care and continually strive to achieve this [6, 7].

In the UK, the Hill Report [5] identifies research as one of the four key areas where libraries have an essential role and has recommended that the Department of Health issues formal guidance indicating this. Recent health policy published by the Department of Health [8] outlining a move towards commissioning of health services may also apply to health library services. This increases competition and places pressure on services to demonstrate their value and impact on healthcare, and research is necessary to support this. Thus, health librarians will in future increasingly need to become more engaged with research, but in what ways do health librarians currently engage with research and at what levels?

In health librarianship there are two dimensions where work associated with research is particularly noted in the literature: clinical librarianship, and evidence-based librarianship [9-11]. Evidence-based librarianship is *production* focused and concerns the generation and use of research evidence in the practice of librarianship [2, 10, 12] whilst clinical librarianship is *consumer* focused and concerned with engagement with research on behalf of others (health professionals) in order to assist in the achievement of evidence-based health practice (Figure 1).

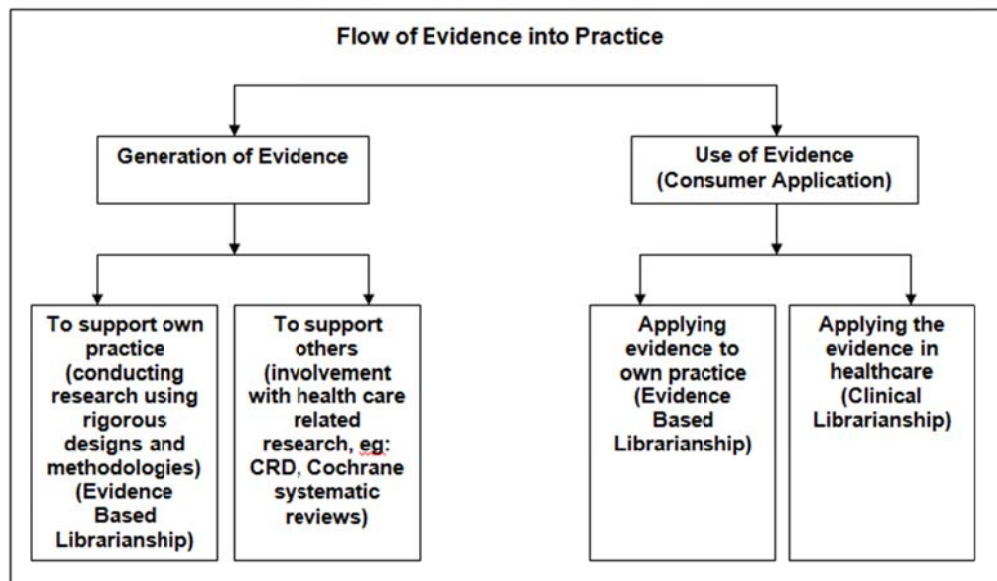


Figure 1: Flow of evidence into practice in health librarianship

Essentially, the concept of evidence-based librarianship reflects the core characteristics and principles of evidence-based medicine directly back into the practice of health librarianship and recommends that librarians incorporate evidence-based research methodologies into research activities that inform their own services and practice. It is after all, the generation of research that supports the entire process of evidence-based practice and without this there would be no suitable evidence to apply within practice. There are however, a considerable number of difficulties in doing this reported in the literature.

1.2. Barriers to research

Health librarians appear to experience difficulties in engaging in activities associated with research due to a number of common barriers. Schrader [13] highlights the existence of the *'troubled growth of a research presence in professional practice'* in Library and Information Science (LIS) (p170). Feather [14] observed that although networks such as the Chartered Institute of Library and Information Professionals (CILIP) Library and Information Research Group (LIRG) [15] bring together academics and research oriented practitioners, there is little evidence of librarians doing their own research. Reasons widely cited as barriers to this are often associated with resourcing and include complexities

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in existing funding arrangements for LIS research [16-19], lack of time and organisational support to engage in research [20], a poorly organized research agenda and lack of strategic leadership and direction from the professional body [18, 20, 21]. Lack of research confidence and skills amongst librarians is an additional aspect commonly cited in the literature and blamed regularly on perceived insufficiencies in LIS curricula [13, 16, 18, 22-25]. Other challenges associated with engagement in research have also been linked to the fact that the LIS community does not generally regard itself as a research oriented profession and therefore tends not to prioritise research activities [18, 24, 26-28].

1.3. Rigour in research

The current evidence base in LIS has been criticised for being poor due to its anecdotal, review or opinion based nature [22, 29-31]. Where the generation of research evidence is concerned, much is either of poor quality or too far removed from real world practice to be of any practical application. The realities of poor rigour in LIS research have been captured to some extent through investigative bibliometric and content analysis based studies aiming to identify the methodologies used and the topic areas covered. The majority of studies which have investigated the quality and status of research in librarianship are generic in nature covering a broad spectrum of disciplines. There are very few papers which specifically address health librarianship [17]. In this study, eleven papers were reviewed [17, 31-39], of which only three were exclusively focused on health librarianship. These however did not demonstrate good methodological rigour, and were limited in their generalisability to a UK situation due to two being USA specific [17, 36] and one in Japan [37].

As this study used a national survey to collect data, a number of other papers were also reviewed that investigated research engagement in LIS using a survey based approach. A total of seven articles were identified from a number of international locations [18-21, 24, 40, 41]. The large majority of this literature was found however to be disappointing in that poor methodological underpinning placed limitations on the value of the findings and conclusions.

From a UK perspective, the only studies which exist are those completed by McNicol and Nankivell [24], and McNicol [41]. Both studies aimed to be generic in focus and to cover a wide variety of librarian disciplines and sectors, and did include health. However, poor reporting and lack of robust analysis in these studies gives them limited relevance and meaning for health librarians, even when considered in the UK context within which they were set. Representation for health was poor in both studies; in the 2003 study, there was, for instance only a 10% response rate (n=31) with only one representative of the health sector who was based in a NHS trust. This is only one sector of health librarianship and does not include other sectors in which health librarians can be found. To date, these two studies, conducted essentially by the same author, remain the largest and only surveys to have been conducted in the UK from the perspective of the librarian on research engagement.

As these seven papers form the existing evidence base in terms of research conducted by librarians that has used a survey approach to explore aspects of research engagement in librarianship, it is reasonable to propose that in terms of rigour, overall this evidence base is weak.

1.4. Rationale

The need for this study can be identified on a number of levels. A considerable amount of anecdotal commentary, but only a small amount of limited research exists regarding the engagement of librarians in research. Little is known about the engagement in research related activity of health librarians, particularly in terms of the perceived barriers to and priorities for it. The only extant studies covering the UK and aiming to address this topic were completed a decade ago and have covered all LIS sectors, but have both poor methodological underpinning and poor representation of health [24, 41]. It should also be recognised that the findings of the studies are likely to be different from one LIS sector to another and arguably, different sectors should be studied separately.

In the context of strategic direction, volume of research and rigorous approaches to development of the evidence base in health librarianship, the overall picture at present is not a positive one. Without a culture of evidence-based practice and a clearly defined strategy for research capacity development in

health librarianship there is likely to be only limited engagement with research, and this has clear implications for the progression of the profession.

The aim of this study was to focus specifically on the health sector. In particular, it set out to establish current perceptions around, and the key barriers to and priorities for research engagement in health librarianship.

2. Methodology

Data collection was conducted in two phases. During the first phase a focus group was employed to gather data supporting operationalisation of the study, and to gain an understanding around research engagement within health librarianship. This phase aimed specifically to gain consensus on both the barriers to and priorities for research engagement in health librarianship. The second phase of the research required a much larger sample of individuals from which to gather supporting data reflecting the UK wide view, thus the use of an electronic survey was employed. Ethical approval for both phases was sought through the host institution.

2.1 Focus Group

In order to benefit from existing expertise, a collective approach by relevant professionals is commonly applied in research to gain consensus about the subject in question, and to increase rigour [42-46]. The focus group was therefore used to operationalise the overall study through the identification of contexts in which research engagement is perceived, practiced and defined by health librarians, and to inform the development of a questionnaire survey which would create a mechanism for opening up the discussion to a wider audience with broad coverage across the UK.

2.1.1 Focus group approach

A purposive sample was used to form the focus group comprising individuals working in positions that allowed them to identify issues from an operational, ground level perspective. Prior to the study consideration was given to the different contexts in which health librarianship exists, and seven areas were identified. Each member of the focus group was selected specifically to represent one of these seven context areas which comprised: Academic health librarians; Clinical librarians (NHS); NHS library service managers; Independent health librarians (non-NHS); Research librarians (in health); Senior information strategy managers (in health); Strategic health library managers. Seven focus group members attended in total, each recruited to represent one of the key context areas.

To identify relevant focus group members a call for representatives was sent out to targeted groups and communities in the areas of representation identified, and through the use of cascading methods. This included JISCmail groups, special interest and professional groups, and cascades through senior strategic managers and group Chairs.

The focus group was run as a half day event in which the members were split into two small groups. Each group was chaired by a nominated focus group member and they worked together (without members of the research team present) to identify their top five barriers and top five priorities for research development in health librarianship. The two groups were then brought together to discuss both sets of priorities and agree consensus on the top five overall in both areas (see Figures 2 and 3). Participants were also given five minutes in silence at the start of the focus group event to write down key points from the perspective of their representational area. This ensured that all participants had a voice in relation to their own area.

2.2 Survey

The overall aim of the survey was as to gain a national picture of research engagement and clarify the barriers to and priorities for research development as perceived by health librarians in the UK. The survey instrument (available on request) used was an electronic questionnaire applied to a representative population in the UK. Questions asked were shaped around and influenced by the focus group consensus, and findings from the literature review. The questions addressed a number of areas including current and previous roles in health librarianship, formal experience and length of service in health librarianship, qualifications, research related professional development and training, membership of professional bodies, membership of research networks, and involvement in research activities. Perceptions of the respondents were also investigated through questions on levels of organisational support received for research, importance of personal role in research development activities, barriers to research engagement, priorities for research development, and overall importance of research to health librarianship.

Validity in survey design is commonly achieved through pilot testing [47-50]. Morgan [51] recommends that where a focus group has been used in the developmental stage of a survey, piloting on the focus group before wider distribution is advisable. Members who attended the focus group were therefore asked if they would pilot test the survey. This approach contributed towards ensuring the survey questions would also be meaningful to the rest of the representative sample and assured content validity in the survey design.

2.2.1 Survey sample

Following the focus group event, the seven categories of health librarianship were revised. The final sample frame comprised eight categories of librarians, thought to be representative of all sectors and disciplines in which health librarianship is involved and practiced. This comprised: Academic health librarians; Clinical librarians: Health library service managers; Health library service librarians; Independent health librarians; Research librarians; Strategic health library managers; Pure academics.

2.2.2 Administration and analysis

Distribution of the survey was administered via cascading through list, network and group managers, and direct email approaches with a direct link to the survey embedded in the invitation email. Due to this approach, it was not possible to estimate a true and accurate sample size.

All data collected from SurveyMonkey were analysed using SPSS statistical analysis software, and analysis tools within SurveyMonkey. Additional variables were created with which to analyse the data based on levels of research experience, research training and research related qualifications derived from responses from three specific survey questions. These variables were created using a scoring system based on numbers of responses given. For instance, to measure levels of research experience (variable depicted in results Tables 3 and 5 as *res_exp_score*), responses given to the question 'To what extent have you been involved in research relating to health librarianship?' there were four possible answers (see Figure 5). Responses which indicated no involvement received a score of 0, and responses which indicated any of the other options received a score of either 1,2 or 3 depending on how many had been ticked. Other variables (depicted in the results Tables 2, 3 and 4 as *res_cat*, *qual_cat*, and *res_training_score*) were created using similar methods. This allowed a certain amount of insight into levels of research related experience, training and qualifications the respondents possessed, and supported a small amount of inferential analysis.

3. Findings

3.1 Focus group

The focus group identified the major priority areas for research as being linked to the need for increased research related networking, and also training to develop research skills and professional development. Identification of important research questions was highlighted and also improving research impact and the management of research. Aspects associated with marketing and service delivery were also identified.

Barriers were seen by the group as being associated with issues around lack of time, funding and research skills. Uncertainty about aspects of research prioritization were also identified together with fragmentation and lack of opportunities for networking.

All aspects identified were discussed in a variety of different contexts and ultimately, the focus group members reached consensus on five key priority areas for research in health librarianship, and what they felt were the five major barriers to this (see Figures 2 and 3).



Figure 2: Five Key Priorities for Research Engagement in Health Librarianship



Figure 3: Five Key Barriers to Research Engagement in Health Librarianship

3.2 Survey

3.2.1 Response Rate

The survey returned 316 usable responses. The response rate by category is outlined in figure 4.

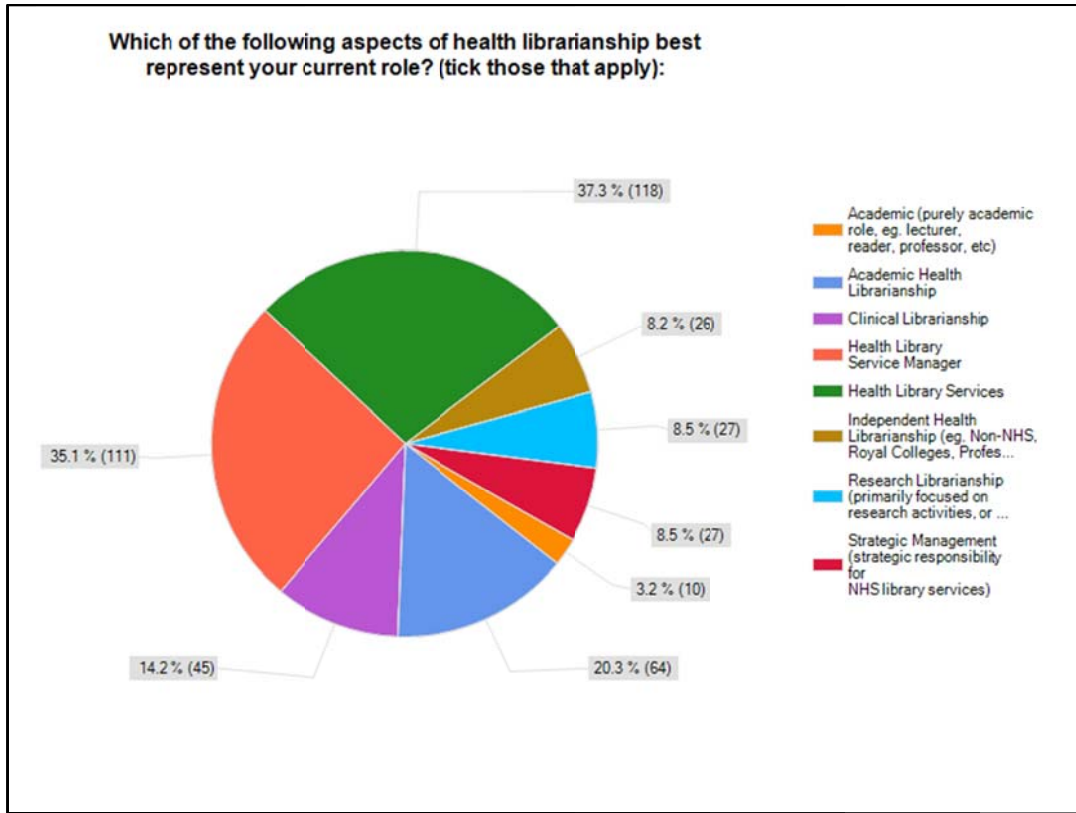


Figure 4: Response rate by category of health librarians

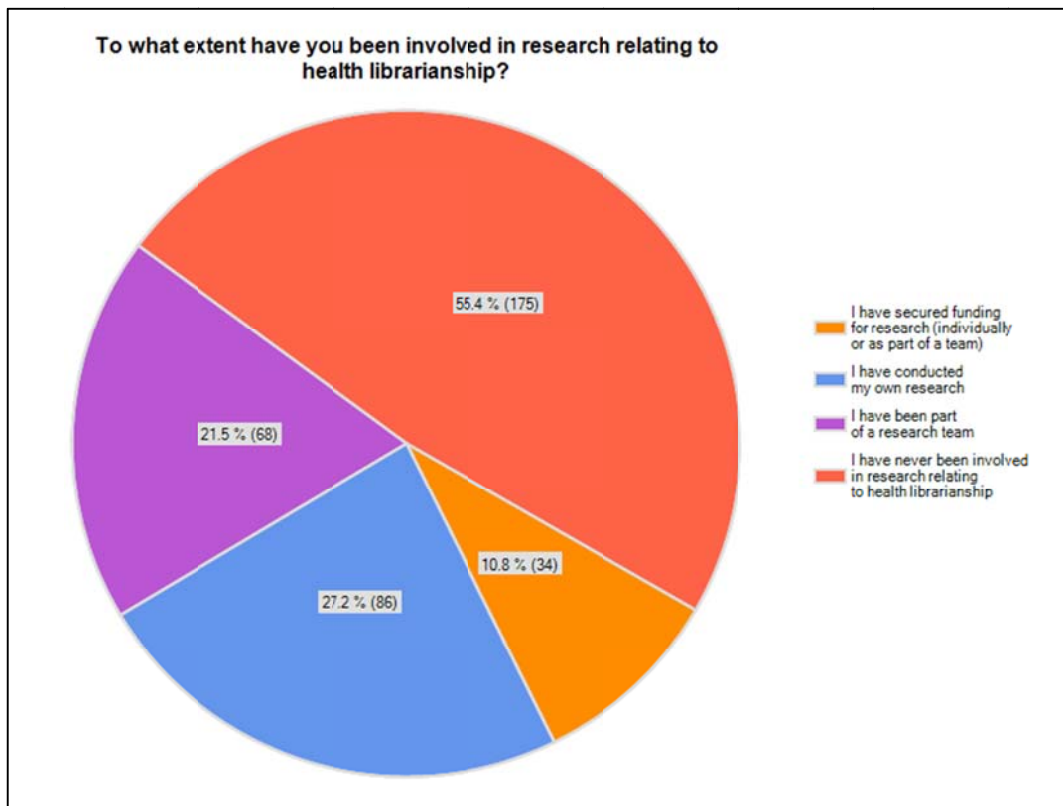


Figure 5: Frequency of activities relating to research involvement

3.2.2 Research Involvement

Over half the respondents indicated that they had never been involved in research relating to health librarianship. Frequency of research involvement activities are indicated in Figure 5.

3.2.3 Importance of role in aspects of research

When participants were asked their perceptions of how they viewed the importance of their role in four different aspects of research development (own research skills, research skills of others, evidence-based librarianship, and evidence-based health practice), consistently across all categories of qualification (and particularly those with teaching qualifications) the greatest importance was seen as being the development of role in evidence-based health practice, with developing the research skills of others receiving a similar response. Collectively, less importance was placed on role development relating to health librarianship specific research or evidence-based librarianship (see Figure 6). Further cross-tabulation analysis was completed in this area using a variable created for use in the analysis based on levels of research involvement (as depicted in Figure 5) and is presented in Table 1.

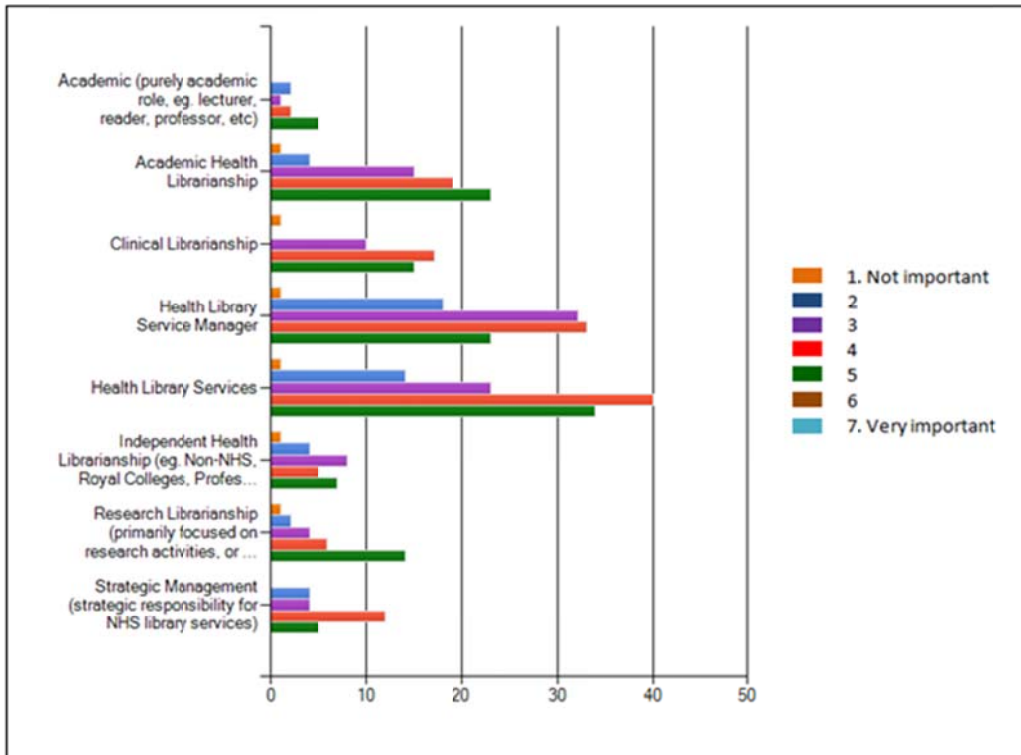


Figure 6: Importance of research to health librarianship (by category)

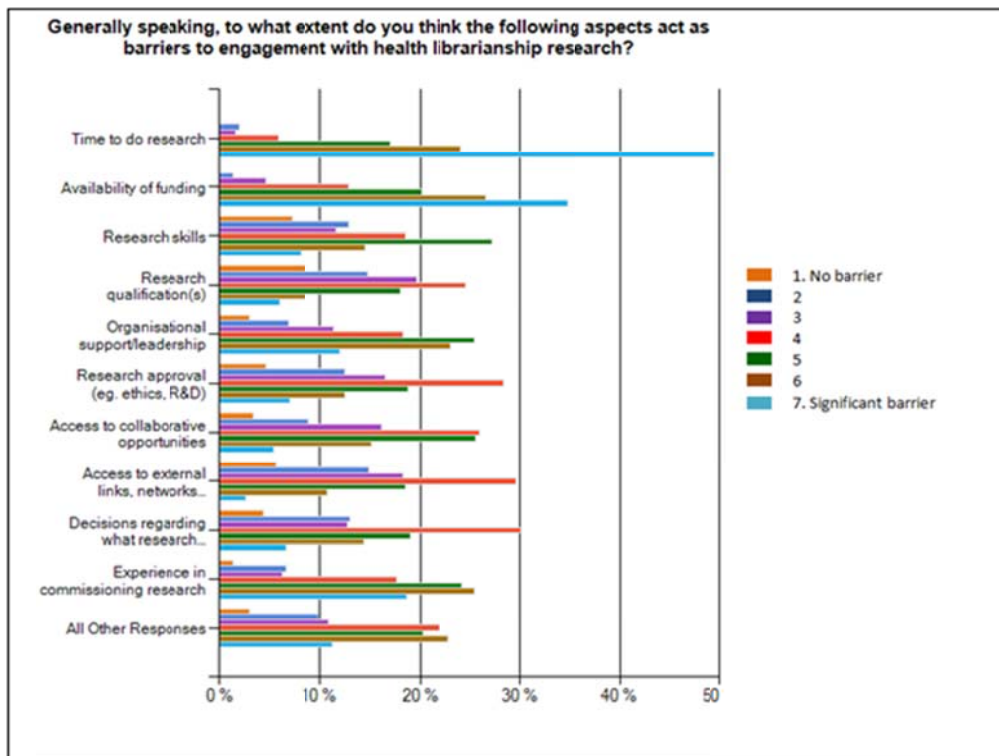


Figure 7: Barriers to research engagement in health librarianship

Table 1. Cross-tabulation: Importance of role in research development

Research category		Developing own research skills	Developing the research skills of others	Developing EBL	Developing EB health practice
	Mean	4.64	5.63	4.57	5.51
nil	Std. Deviation	1.881	1.459	1.909	1.663
	N	168	172	167	172
	Mean	5.15	5.84	5.15	5.89
low	Std. Deviation	1.692	1.409	1.676	1.449
	N	107	107	107	107
	Mean	5.63	5.37	5.94	5.74
medium	Std. Deviation	1.535	1.422	.998	1.851
	N	19	19	18	19
	Mean	6.14	6.00	6.46	5.86
high	Std. Deviation	1.292	1.617	.660	1.703
	N	14	14	13	14
	Mean	4.94	5.71	4.93	5.67
Total	Std. Deviation	1.812	1.447	1.814	1.609
	N	308	312	305	312

3.2.4 Barriers to research engagement in health librarianship

When asked about barriers to research engagement, time and availability of funding were perceived as the two most significant barriers across all eight categories of respondents. Other areas receiving high frequencies of ratings by all categories near the 'significant barrier' end of the Likert scale, were organisational support to do health LIS related research and experience in commissioning research.

Collectively, research qualifications and access to external links, networks and partnerships were perceived as presenting the least barriers to research (see Figure 7).

3.2.5 Priorities for research engagement in health librarianship

When asked about priorities for research engagement, collectively, respondents provided a very similar spread of ratings across all options with few rating the options as low priority. Whilst organisational support received the highest rating, the largest proportion of ratings were placed above the central point on the Likert scale, therefore placing high priority on them all (see Figure 8).

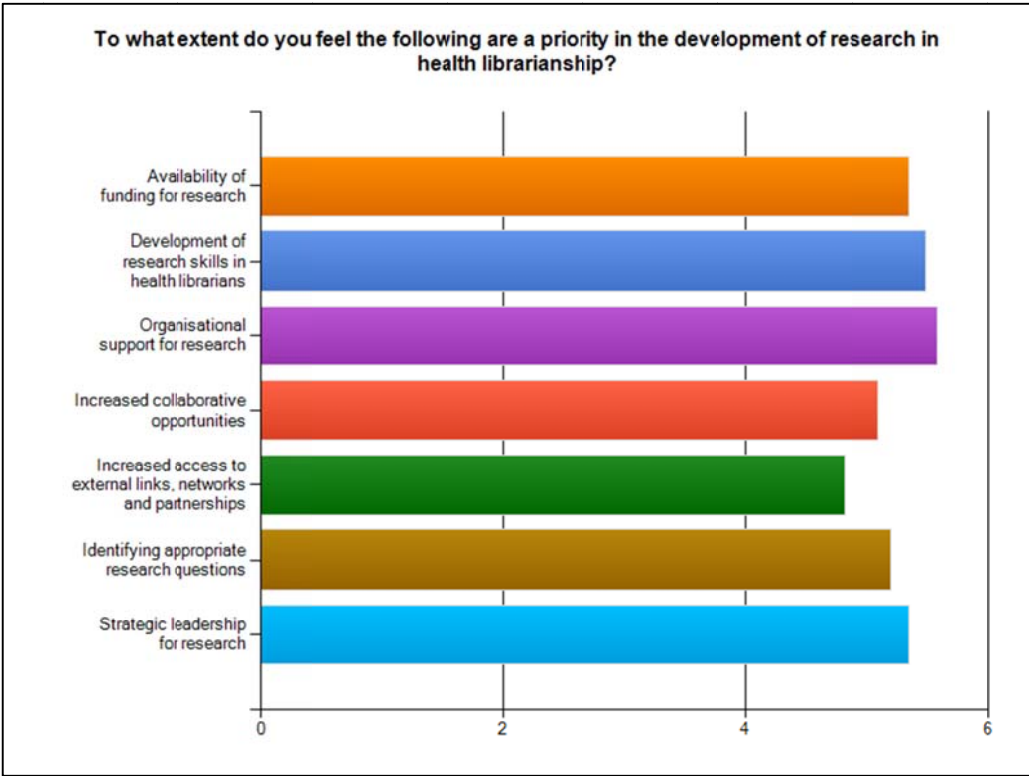


Figure 8: Priorities for research in health librarianship

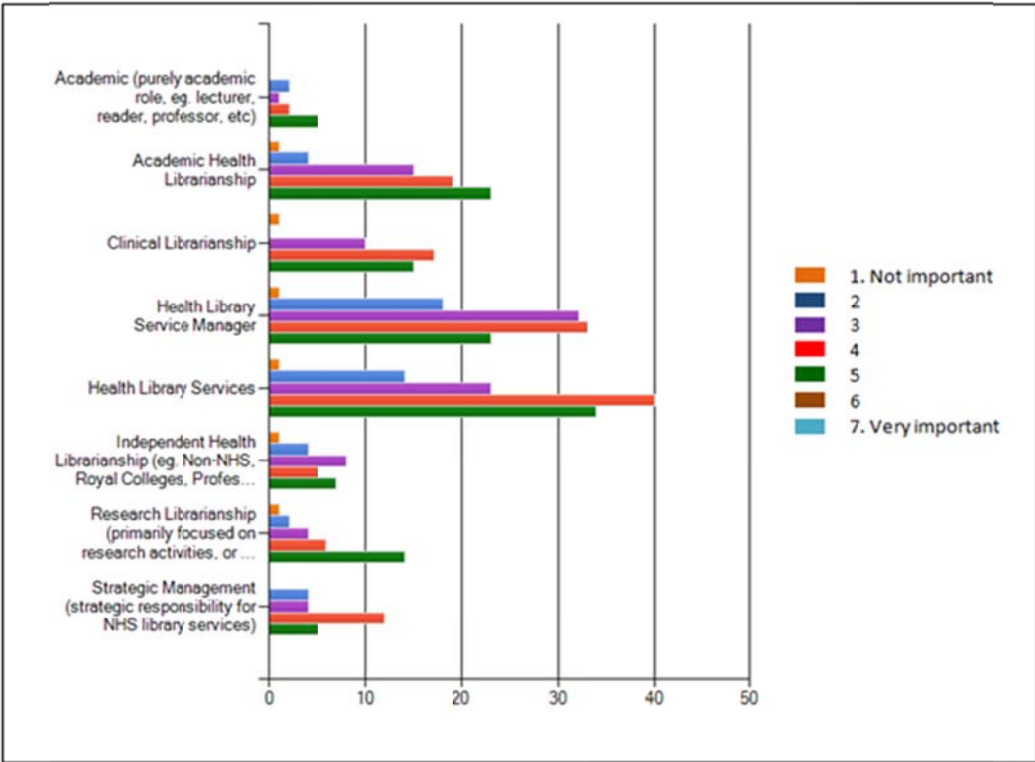


Figure 9: Importance of research to health librarianship (by category)

3.2.6 Importance of research to health librarianship

When asked how important the participants felt research was to health librarianship, the large majority of responses were on the middle to high range of the Likert scale. Collectively the rating average was 5.70 with the research librarians scoring the highest (rating average 6.04) and the independent health librarians scoring the lowest (rating average 5.31). Full details are shown in Figure 9.

3.3 Results from inferential analysis

Inferential analysis was carried out to answer the following questions:

1. Does research experience differ in terms of qualification types?
2. Is there a relationship between research experience and research training?
3. Does research experience or research training relate to perceptions of research importance?

3.3.1 Does research experience differ in terms of qualification types?

For question 1, does research experience differ in terms of qualification type (null hypothesis: *research experience of health librarians does not differ in terms of qualification types*), a Kruskal-Wallis comparative test was used to analyse the data from variables depicting research experience score, and qualification category. Significance was less than 0.05 and therefore the null hypothesis was rejected and it was concluded that the research experience of health librarians differs in terms of qualification types (see Table 2). It should be noted however that this test provides an analysis based only on the mean differences in the data and therefore it is not possible to identify within this analysis where those differences might be. It is likely however that the differences occurred between respondents who have a qualification categorised as research and those who have a qualification categorised as non-specialist.

Table 2 Research experience and qualification type

Qual_cat	Mean	N	SD
non_specialist	1.2073	82	.53835
teaching	1.4667	15	.74322
research	1.5111	45	.75745
Total	1.3310	142	.64930

3.3.2 Is there a relationship between research experience and research training?

For question 2: Is there a relationship between research experience and research training? (null hypothesis: *there is no relationship between the research experience score and research training score of health librarians*), a Spearman Rho correlation test was used to analyse the data from variables depicting

research experience score and research training score. This achieved a Rho value of 0.145 ($p = .085$) which is higher than the accepted value of 0.05 for statistical significance. Based on this analysis, the null hypothesis was retained and it was concluded that there is no relationship between the research experience score and research training of health librarians. In summary significant mean differences exist between the qualification groups but no relationship exists between individual scores in research experience and research training scores (see Table 3).

Table 3: Correlations: Research experience and research training

		Res_exp_score	res_training_score
Correlation Coefficient		1.000	.145
Res_exp_score	Sig. (2-tailed)	.	.085
N		142	142
Spearman's rho			
Correlation Coefficient		.145	1.000
res_training_score	Sig. (2-tailed)	.085	.
N		142	316

3.3.3 Does research experience or research training relate to perceptions of research importance?

For question 3: does research experience or research training relate to perceptions of research importance? The research training score variable and research experience score variable were run for each of the four context areas specific to role (eg. development of own research skills, research skills of others, evidence-based librarianship, evidence-based health practice). With a Spearman Rho test, all values failed to reach significance. Therefore perceptions of the importance of research development in these four key areas were not found to be related to the levels of research training or experience the respondents held.

3.4 Cross-tabulation analysis

Cross-tabulations were also run in some areas, with results of note as follows:

- There were a higher percentage of those in a NHS setting with non-specialist qualifications (45.9%) and with no research experience than those in academic settings (27.1%).
- There were a similar number of those in NHS settings with non-specialist qualifications (1.1%) but with high levels of research experience as those in academic settings (2.1%).
- Some librarians (6.2% of those in academic settings and 13.3% of those in NHS settings) have research qualifications but no research experience.

A further cross-tabulation was completed in the area of importance of role in research development with the variable reflecting research experience. Those with a high level of research experience perceived more importance in all four context areas of question 13 compared to those with lower levels of experience. Overall, the highest scores with this group were in the contexts of evidence-based librarianship and the development of personal research skills. Those with less research experience placed more importance on evidence-based health practice and developing the research skills of others (see table 4).

Table 4: Cross-tabulation: Importance of role in research development

Research category		Developing own research skills	Developing the research skills of others	Developing EBL	Developing EB health practice
	Mean	4.64	5.63	4.57	5.51
nil	Std. Deviation	1.881	1.459	1.909	1.663
	N	168	172	167	172
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	Mean	4.94	5.71	4.93	5.67
Total	Std. Deviation	1.812	1.447	1.814	1.609
	N	308	312	305	312

4. Limitations

It should be acknowledged that all research studies carry limitations affecting their rigour and generalisability to wider groups. In relation to this study, the small sample size characteristic of the focus group means that the results cannot be generalised to a wider population. However, by defining the context and disciplines of health librarianship through the categories defined for the purpose of the focus group, the study did carry good and accurate representation of the intended population. This arguably is more important than sample size.

Limitations of the survey approach include the self-selecting nature of how survey responses are often received, and the unevenness in number of responses in each of the eight categories of health librarian. This also limited the depth at which some data analysis could take place.

5. Discussion and Conclusion

Respondents contributed a considerable amount of additional data in the form of optional further comments from which some thematic analysis was possible. From this, the focus group and main survey data, a number of themes were emergent that broadly encompassed professional cultural factors, lack of resources, limited research opportunities, and challenges relating to existing and future research (see Figures 10-13). Many of these themes were not single entities that affected engagement in research, but rather were fundamentally linked with varying degrees of association to one another. This was insofar as similar factors were frequently discussed but in different contexts. Two facets emerged from the cultural issues theme. These were perceptions 'external' to health librarians and originating from their employing organisations and other connected external institutions. The second was perceptions 'internal' to the culture of health librarianship and originating from health librarians themselves. The second theme to emerge from the data was in relation to perceived lack of resources for research. This theme transpired through six unique but intrinsically interlinked facets which comprised funding, staffing, time, literature sources, research skills, and research skills support. The third theme revealed perceived limited opportunity for research related activity and this translated into two key areas, opportunities to do research, and opportunities for collaboration in research. Factors relating directly to the research itself in health librarianship was a further theme which emerged from the data, and was addressed by the respondents from two different perspectives. These related to the relevance of the existing research, and to what research should be done.



Figure 10: Theme 1: Professional cultural



Figure 11: Theme 2: Limited resources



Figure 12: Theme 3: Limited research related opportunities

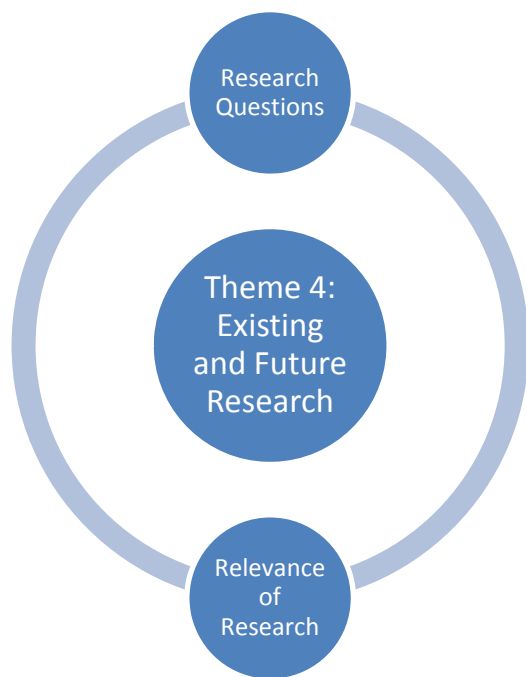


Figure 13: Theme 4: Existing and future research

The study established that whilst there are some strong common perceptions as to the aspects which prevent health librarians engaging in research, the attitudes of health librarians also present a barrier. This is evidenced largely in (internal) traditional and cultural aspects of the profession from which there has commonly been a poorly developed research culture and a lack of belief in the relevance or importance of research. With the exception of the pure academics, the study also reveals the perception amongst health librarians that there is poor support for research from their employing organisations, and of an (external) organisational tendency not to see the role of the health librarian as one that can or should be evidence-based in nature. Both perceived internal and external cultural issues are complex, inherently interlinked, and appear to serve as a major barrier to research development.

Further levels of complexity are added by a perceived lack of resources and lack of research opportunity, and these, to a large extent, stem from the cultural variations identified. Health librarians blame lack of time, and lack of availability of funding as the most significant barriers to their participation in research, problems which are perceived to originate largely from the employing organisations. Further barriers are presented by the nature of both existing and future research. Confusion and lack of understanding appears to exist around published research in terms of both how it is presented, and of its relevance to everyday practice, with the perception that it has limited utility in the real world. Difficulties are also perceived in terms of what research should be carried out in the future.

Furthermore, evidence has been collected which suggests the extent to which health librarians in the UK currently engage with research is low with over half the respondents having never participated in any research related activity. The study has also established some preliminary evidence which, whilst needing further testing, indicates the strength of relationship between research activity and the training, qualifications, and experience of health librarians and suggesting these aspects may not have any relationship to actual research engagement.

A stronger theme emerging more clearly from the analysis and consistent with the observations in the literature is the goodwill and enthusiastic attitude towards research engagement amongst all categories of health librarian suggesting that if some of the more significant barriers to research participation were removed, the engagement may well increase, irrelevant of prior experience and training. This however is an assumption which this study does not have data to support, but it presents an interesting area for future investigation. Yet at present, most practitioners appear to place more importance on supporting the research and evidence-based practice of others, rather than that of evidence-based librarianship. This in itself is testament that in most categories of health librarianship practice, research for the purposes of supporting the profession is not seen as a priority when considered against the supportive consumer focused role which encompasses the day-to-day work of those practitioners.

The survey results also indicated that in many cases health librarians perceive themselves to be carrying out a very diverse range of roles. This was evident in the categories of health librarianship that respondents identified themselves as fitting with. In some cases, respondents categorised themselves within their current role in up to five of the eight categories. This diversity and fractured nature of individual roles in health librarianship practice is likely to create added pressure and exacerbate the difficulties in prioritisation of day to day tasks, perhaps leaving less opportunity, or perceived opportunity for engagement in research to support evidence-based health librarianship.

A surprising finding of the study is the existence of a cultural element within health librarianship about what research means to health librarians, what it is, and also about what activities they associate with 'doing' research. In both the survey and focus group respondents referred to the term in a number of different and diverse contexts which had not been anticipated. They also associated research with a considerable number of organisations, networks and professional interest groups that did not have any obvious connections to research from the viewpoint of the survey, or research focus within aspects such as terms of reference. In addition, when asked about involvement in health librarianship related research, the responses received indicated activities that in many cases health librarians were still contextualising in relation to the delivery of library user support. Day to day work activities associated with literature searching both in terms of delivering literature search training to library users, and doing literature searches on behalf of library users for example featured heavily as an activity relating to research in health librarianship. In actual fact, such activities are not associated with research in health librarianship but rather, they are directly linked to research in the healthcare professions (consumer support).

A limitation of the study is presented in the two distinct areas in which research seemed to be contextualized, eg. outwards (library user focused) and inwards (librarianship focussed). Thus, despite the question wording of the survey, it was not always possible to know to what extent respondents framed their responses in particular contexts such as these, and this may to some extent have affected the content validity of the survey data.

Research is an activity that health librarians feel is a large part of what defines their work. As such, this close relationship with research, and to a greater extent, the research that is carried out by library users may have led to a situation in which librarians have adopted the habit of assuming 'research' and what it is in the context of the library user, and overlooked what it means to them and their own profession. The diversity of understanding and contexts in which research is perceived by health librarians is an important finding of the study which may benefit from further future investigation.

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