



UNIVERSITI TEKNOLOGI MARA SARAWAK
SCHOOL OF INFORMATION SCIENCE
COLLEGE OF COMPUTING, INFORMATICS AND MATHEMATICS

Diploma in Information Management

Outreach Programs of Information Agencies

(IMD 317)

Individual Assignment

**Essay on the Role of Social Media Applications in Outreach Programs
within Information Agencies**

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Date of submission:

28 November 2024

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November 2024

STUDENT PLEDGE OF ACADEMIC INTEGRITY

I, **ALIEYA MALISA BINTI ABDULLAH**, from CDIM1105A hereby declare that this individual project report is a true and original work carried out by me for the subject IMD317 Outreach Programs of Information Agencies. I confirm that all sources of information, ideas and references used in this report have been fully acknowledged.

Signature: 

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Date: 20th November 2024

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ACKNOWLEDGEMENT

First and foremost, we would like to express our gratitude to God for bestowing upon us the mental and physical qualities and other beneficial characteristics that have helped me accomplish this assignment. He cleared all the barriers I have faced and made it easier for me to overcome them.

To the following person, who is our lecture Madam Favilla Binti Zaini. I was indeed indebted to her, because she taught me patience and guided me well throughout the making process of this assignment. Her insightful remark and ideas significantly contribute to the practical completion of this assignment.

Therefore, I would like to express my deepest gratitude to all who helped complete this assignment. I was indebted to all my friends, family and classmates for their patience, compassion, and also moral support while attempting to accomplish this assignment

ESSAY ON THE ROLE OF SOCIAL MEDIA APPLICATIONS IN OUTREACH PROGRAMS WITHIN INFORMATION AGENCIES

The new age has brought about the digitalization of all sectors and the needs of people have also evolved, which is a challenge for information agencies such as libraries. They have to keep every segment of their users satisfied whilst ensuring that they remain relevant in this new world. Such issues can be addressed by the incorporation of outreach programmed which will, in turn, allow users to utilise more resources. Without a doubt, more and more libraries in the developed world are actively implementing the integration of certain marketing aspects in order to both increase the 'use of libraries' goals and more efficiently promote libraries under the conditions of the changes and problems facing society today. Such outreach programmed have the strength to explain the libraries' competitive advantage and their relevance, in functional and user aspects. In today's world, where technology has advanced and where there are more efficient and productivity-oriented users, the programmed are always on the move. As the needs and demands of library users change, so too shall users demand new user-friendly services. For countries where there is a lack of usage, globalization can assist them in transitioning from the necessary outreach to the core strategy. Instead, information agency resources will be of utmost value in any academic and general use, as it can be tough to focus on information agency resources that can simultaneously

It can be said that social media has emerged as one of the most essential tools for outreach programmed considering the ways different information agencies engage their target populations. Libraries, public relations, and other service-oriented agencies are increasingly making use of Facebook, Twitter, Instagram, and YouTube as tools to attract users, inform them, and enhance their services. Such social media activities enable organizations to maintain constant engagement in the cyberspace where their audience resides, thus enhancing interaction and access.

Methods through which community libraries have been effective in using social media for outreach programmed include events and advertising of new books with real-time updates on these social networks. Social media users connect to libraries by engaging with them through social media and around it. There are healthcare agencies that use social media to provide important health messages, awareness campaigns, and support in areas where it is needed. Social media has bridged the gap by allowing individuals who have very little access to traditional means of communication to access very important goods.

Promoting business through social media definitely has its benefits. The first one is the cost, which enables it to reach numerous masses without having to spend a lot of money. It remains

one of the most effective means of outreach, so its global marketing effort is not wasted. It helps agencies to extend their promotional and branding campaigns to those consumers who would otherwise be inaccessible. In addition, Twitter and Facebook also work to enhance the effectiveness of communication because agencies can easily resolve issues and provide explanations to the questions raised by users within a short time, hence increasing the trust that consumers have in them.

Social media also has the added benefit of creating and maintaining social networks. Such resources engage their users because they enable people to exchange information, post materials, and even hold discussions. For example, libraries incorporate social media into their activities to promote online events like webinars and tutorials and to disseminate information which can later be viewed by the audience. Therefore, some patients in treatment centers may have been instructed to use YouTube by some treatment centers in order to avoid getting lost in the ways of how to treat certain matters.

What this quote illustrates is taking down boundaries aimed at maximal coproduction by creating contact points and channels of communication that are constantly indicated and, in this case, reposted — simply a wish for contact. Social networking sites or pages, too, bear problems when used for programmed outreach activities, but then have a share of merits. Limited resources, or for that matter lack of willingness to specialize on active promotion of social media accounts is also a reason for many agencies to stay away from such activities. This is more so the case with smaller agencies where stimulating and retaining interest is a challenge for 'common' activities where time and money are not easily available. Along with such issues go the concern for privacy and security, of which there are a great deal when dealing with these agencies, most of whom quite easily come across sensitive information, and which always relates to healthcare firms. In this case, the challenge becomes to maintain a certain degree of openness while complying with the very laws designed to restrict such disclosure.

As with everything, it has a dark side or the other side of the coin; the other side of the coin issues the existence of a digital divide as not all audiences targeted are reached and also able to access the information being communicated to them through social networks or even the Internet.

What disconnects rural and underserved communities is the necessary connectivity that restrains them from active involvement in online outreach programmed. Moreover, an onslaught of information and content, or an even flood thereof, which is posted by an agency on a social media site could, in actual fact, impede its users from concentrating on the content that is displayed. On rare instances, this could be vice versa; some agencies lose a very

favorable image, and as a result, some of its users end up with very, even spiteful, opinions, together with some petty misinformation most of which is conveyed far and wide than whatever time it actually calls for.

However, despite the challenges outlined above, social media is an important tool in the hands of outreach programmed, as it enables the agencies to reach out to online audiences in a variety of ways. Within overcoming resource constraints, allowing for digital inclusion, and applying techniques to solve privacy issues, an information agency can make use of social media for their advantage to increase outreach. The development of these platforms will create more opportunities for the agencies to reach a wider audience and interact with them and provide them with many resources.

Posting on social media has really changed the outreach landscape as now the information agency can reach out to the target audience in a much cheaper and effective way.

Although there are many challenges that still require a solution, this social and technological advancement guarantees that it will be one of the cores social communications means that will be of value in outreach activities of the agencies in the age of technology.

Indeed, social media has created business opportunities that extend the boundaries of communication agencies and their audiences and social networks that allow contacting consumers and networks, sharing materials, and connecting for common goals on a new level. Time and space don't matter. Particularly these tools give the agencies worldwide clientele without the constraints of time, space, or location. This paper also considers the results of the social media outreach expansion programmed that affect organizations in conjunction with the challenges that need to be addressed, factors that have not been addressed previously such patterns that have started manifesting themselves and measures and policies that should be put in place to ensure the attainment of the envisaged objectives and goals in particular affording the outreach in the context of social media as a new mode of outreach. There are very large concealment social media in reach-out programmed.

Now, information systems and volunteers in medical establishments like hospitals have turned to work through these platforms to promote themselves and provide services to the community. Similarly, online social networking is used by libraries to organize virtual book talks, display digital resource materials, and send out notifications. As a result, there were higher turnouts and satisfaction among the users. Additionally, social media brings a new level of interaction, allowing the agency to receive comments, answers to questions, and requests for possible services. For healthcare organizations, social media has been of great help, particularly in areas that are neglected.

Over the years, campaigns on platforms like YouTube and Instagram have been effective in disseminating crucial health information, running campaigns, and more recently offering telemedicine services. Such activities not only ease access to information but also improve the ability to apply information when the need arises.

It is clear from the level of engagement, followers, likes, and shares from the audience that social media posts do work. Agencies know how many and how deeply their posts reach, and therefore, are more capable of making evidence-based decisions on the improvement of their strategies. On top of that, those metrics also aid in understanding audience demographics and preferences which in turn help agencies devise effective campaigns. Furthermore, social networks allow advertising services and events to penetrate where marketing using traditional outreach techniques has failed, thus strengthening its role as a significant tool of engagement.

However, social media accuracy comes with a caveat; the use of social media as a tool for outreach has certain hurdles. More serious concerns revolve around user privacy. However, it is through these platforms that agencies gather information that they need to use while being cognizant of privacy law and ethical practice. The infringement of users' privacy does far more damage to the reputation of the agency than compliance with legal requirements. Another issue that poses a problem is information overload.

Social media marketing can be rather problematic due to the influx of competition. There is also the challenge of creating content that would grab the audience's attention while remaining short and simple. Remember that I said it was an art that takes time and knowledge to perfect. There is no question that the lack of adequate resources always puts a further strain.

For instance, small rural social institutions, such as community health care centers or public libraries, are unable to maintain active and efficient social media due to a lack of human capital, funds, and the necessary expertise. This situation is compounded by the digital divide whereby rural or poor populations do not have the necessary tools or connection to participate in such outreach programmed. These range from non-availability to the rudimentary level of target groups and hence need flexible and all-encompassing strategies and methods.

These new potentials and trends that are emerging in social networking suggest that these challenges can be solved and outreach extended. Transformations are occurring in how audiences and agencies interrelate. These tools not only help agencies to map users' behaviors, interests, and feedback but also enable them to develop content suited for these user segments. For example, targeting included in advertising features specific measures, or resource suggestions that are applicable would add value to users. Mobile-first strategies are very important for businesses seeking to tap into newer and emerging markets since there is a continuing growth in the number of users of smartphones and social media applications.

In the past, obtaining potential customers who are younger and more technologically advanced was significantly difficult, but all that is no longer the case as now there is TikTok and Instagram. Agencies are able to significantly benefit from those two platforms, focusing on the younger audiences and tapping into new potential markets. From a different angle, video conferencing and Q&A sessions are extremely useful in interactions with users. These are effective methods as communication is done more efficiently and the person gets more involved. For example, instead of reading books, children can go to the library where storytelling is performed live, or a wide viewing audience interested in a specific medical issue can participate in a live medical seminar. Influencers, along with the agencies, or other leading figures in the campaigns, can do more in terms of improving the coverage, making the campaigns better and selling them harder.

For the smooth functioning of the firm, the workers have to be trained on social media policy and be made aware of what they should be doing or not, which also applies to all other operating procedures of the business. Ensuring such smooth running of events, however, involves resource investments into staff retraining, so that employees are able to live up to the changing requirements. Proper regulations, as well as privacy control, would lessen the users' concerns as well as guarantee compliance. In addition, agencies have to bridge the gap in rural areas by teaching them digital skills and providing better access to technology.

To accomplish this goal and contribute to building an equitable online world, local agencies and local community groups are appealing options. On the whole, they have harnessed the power of social media in promotion, advertising and recruitment campaigns and empowered their outreach activity.

Despite the fact that there are still challenges such as privacy, certain information gaps, and even resource deprivation, they can in the future be addressed by adequate design, appropriate education, and collective action. Aspects such as AI personalization, mobile techniques, and immersive media are some of the ways that will assist in enhancing outreach looking ahead. Identical predictions are made about the role of all technological improvements such as social networks intending to fulfil the same purposes as broadening audience contacts and increasing investments retentions. Hence, with the improvement of strategies and technologies of companies aiming at the pressing needs of consumers, the role of social media in interaction and tight cooperation with the customer will continue to grow.

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APPENDIX

Understanding public libraries' challenges, motivators, and perceptions toward the use of social media for marketing

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Abstract

Purpose – The purpose of this paper is to identify challenges and motivators to social media adoption for marketing purposes in public libraries and to investigate how these libraries perceive the importance of social media marketing.

Design/methodology/approach – A nation-wide online survey on public libraries in the USA was conducted to carry out this study, and a total number of 470 responses were used for data analysis.

Findings – This study determined a range of challenges and motivators to implementing social media for marketing in public libraries. The results also showed that public libraries perceive social media as an important tool for their library marketing and intend to increase their use.

Practical implications – The findings from this study can serve as a guideline for public libraries when employing social media for marketing purposes in their libraries.

Originality/value – This study assessed the current state of social media use for marketing in the public library context, a context that has been under-researched in the literature, from three perspectives: challenges, motivators, and perceptions.

Keywords Public libraries, Library marketing, Information technologies, Social media, Social networking sites, Microblogging

Paper type Research paper

1. Introduction

Social media has become an important, if not indispensable, channel for many individuals to communicate and interact with others. According to a recent report by [Greenwood et al. \(2016\)](#), for example, 68 percent of all US adults use Facebook, one of the most popular social media platforms, and 76 percent of the Facebook users visit the site on a daily basis. Social media refers to “a set of online tools that are designed for and centered around social interactions” ([Bertot et al., 2012](#), p. 30), and the tools take on a variety of forms such as networking (e.g. Facebook), publishing (e.g. Wikipedia), photo and video sharing (e.g. Flickr, YouTube), microblogging (e.g. Twitter), cataloging (e.g. Goodreads), and curating (e.g. Pinterest), etc.

Given the popularity of social media among the general public, all types of organizations have also been actively employing these tools to enhance their marketing and promotional activities. Libraries have been no exception in this respect and are constantly making efforts to increase their presence on various social media platforms ([Luo et al., 2013](#)). For instance, a survey targeting libraries in the USA indicated that the majority of the libraries use social media tools for purposes such as promoting library services, providing updates to users, and reaching out to new users ([Rogers, 2009](#)). A white paper compiled by [Taylor & Francis Group \(2014\)](#) reported that over 70 percent of the libraries that participated in its international survey were found to use social media tools, and their primary reason for using these tools was to promote library services and resources.

A number of benefits of using social media for marketing in libraries have been discussed. By conducting a SWOT analysis, for example, [Fernandez \(2009\)](#) identified a range of advantages such as low cost, high efficiency, two-way communication, and proactive outreach.



The white paper by [Taylor & Francis Group \(2014\)](#), mentioned above, pointed out several additional benefits including requiring little training, increasing engagement and interaction with users, and gathering feedback to improve user services. [Blakeman and Brown \(2010\)](#) also suggested a few other benefits of adopting social media for library marketing, such as increasing community efforts, developing community networks, and fund raising.

These benefits are especially attractive to public libraries considering that many of them are suffering from budget cuts and facing various contemporary challenges such as competition with the internet ([Miller, 2008](#)). Thus, they are in constant need of proving their value to funding agencies, patrons, and communities. Also, as suggested in [Rutherford \(2008a, p. 411\)](#), some of the attributes of social media, such as providing users with a place to build a library community where they can contribute their own content and share their knowledge with others, well support the mission and goals of public libraries that put great emphasis on the importance of user participation and community building.

Much of the extant research on libraries' use of social media for marketing, however, has been conducted in the context of academic libraries, the aims and users of which are largely different from those of public libraries ([Anttiroiko and Savolainen, 2011](#); [Gan, 2016](#); [Phillips, 2015](#); [Rutherford, 2008b](#)). Moreover, the previous studies have been mostly case studies examining the adoption or use of a single or a few social media tools in individual libraries ([Phillips, 2015](#)), and thus fall short in providing more general implications. In addition, although social media seems to continue to gain popularity among libraries, there has been a lack of research concerning how libraries actually perceive and value their use of social media. In order to mitigate these gaps in the literature, this study aims to determine challenges and motivators to social media adoption for marketing purposes in public libraries by conducting an online survey in the USA. The study further intends to provide a snapshot of the current perceptions of public libraries toward the use of social media tools for marketing (i.e. perceived importance and future use intention).

The remainder of this study is organized as follows. The next section reviews relevant literature; then, the research method is presented in the third section. The fourth section presents and discusses the findings of the study, and the last section highlights contributions of the study and concludes by proposing directions for future research.

2. Literature review

The rapid growth in the use of social media for library marketing has triggered various research interests. Among them, the large bulk of research effort has been devoted to sharing best social media practices in different types of libraries, often by employing a case study approach ([Phillips, 2015](#)). In the academic library context, for example, [Ganster and Schumacher \(2009\)](#) illustrated how the University at Buffalo Libraries successfully designed and used their Facebook page to reach out to the campus community and to promote library resources and services. In addition, [Luo et al. \(2013\)](#) demonstrated the processes of carrying out an award-winning online video marketing campaign in Tsinghua University Library in China and concluded that four factors (i.e. content, style, venue, and partnership with students) were key to the success of their campaign.

Likewise, in public library settings, for instance, [Gosling et al. \(2009\)](#) presented three case studies of public libraries in Victoria, Australia that effectively employed various Web 2.0 tools such as podcasts, blogs, Flickr, and wikis for improving their online presence and better marketing their services. [Krabill \(2009\)](#) shared the positive experiences of the West Palm Beach Public Library with Twitter, highlighting "Twitter is one of the most useful free publicity tools we have" (p. 14). [Krabill \(2009\)](#) also provided some samplings of tweets and further suggested that libraries should avoid treating Twitter like an online bulletin board but instead should try to give it a personality so that users like to interact with it. In addition,

[Cahill \(2009\)](#) described how Vancouver Public Library systematically enhanced their web services with a set of thoughtfully selected Web 2.0 tools. In a follow-up study, [Cahill \(2011\)](#) further provided several best practices and lessons that they learned from managing their own social media (i.e. Facebook and Twitter) accounts.

While these case studies offer valuable insights and guidance, there have also been a few studies surveying social media use and trends. For example, [Xu *et al.* \(2009\)](#) analyzed 81 academic library websites in New York and revealed that although 41 percent of them employed one or more Web 2.0 tools, the actual utilization of those tools greatly varied by individual library. By reviewing the literature on library 2.0 and analyzing the websites of public libraries that have successfully deployed Web 2.0 tools, [Anttiroiko and Savolainen \(2011\)](#) identified four main categories of Web 2.0 application areas (i.e. communication, content sharing, social networking, and crowdsourcing) in the public library context. [Mahmood and Richardson \(2011\)](#) investigated the websites of 100 member academic libraries of the Association of Research Libraries in the USA and concluded that a growing number of Web 2.0 tools were greatly accepted in these libraries for different uses. Similarly, [Boateng and Liu \(2014\)](#) surveyed the websites of the top 100 US academic libraries and found that Facebook, Twitter, and blogs were the most widely employed Web 2.0 tools, while wikis and social bookmarking/tagging were the least used. More recently, [Gan \(2016\)](#) examined 46 sub-provincial and provincial Chinese public libraries' WeChat accounts, one of the most popular mobile social media tools in China, and provided an overview of the application of WeChat in Chinese public libraries.

In addition, a handful of studies have delved into the challenges of implementing social media in libraries. For example, in a study of seven public libraries in the USA and New Zealand, [Rutherford \(2008b\)](#) revealed that the most significant implementation issues that they had in common were people-related, such as reluctant staff, staff training cost, and human resource constraints. [Hall \(2011\)](#) argued that librarians need to actively transfer their increasingly sophisticated use of social media into applications to library services delivery. Drawing on Roger's diffusion of innovations theory ([Rogers, 2003](#)), [Neo and Calvert \(2012\)](#) interviewed nine public libraries in New Zealand and identified a number of demotivating factors that had hindered the adoption of Facebook in these libraries, such as limited staff time and poor customer response. [Chu and Du \(2013\)](#)'s survey study of 38 academic libraries across Asia, North America, and Europe also found that when implementing social networking tools in their libraries, they faced several challenges such as limited engagement by staff and users, and maintenance cost. Similarly, [Smeaton and Davis \(2014\)](#) performed a case study on two Australian public libraries and indicated that both organizational culture and staffing (i.e. level of staff skills and staff acceptance) were key factors contributing to their successful adoption and use of social media. Additionally, [Cavanagh \(2016\)](#) conducted a survey on 71 public libraries in Canada, regarding their use of Twitter, and found that more than 90 percent of the challenges that they experienced in using Twitter were related to management issues (e.g. time constraints and double-posting).

Despite the continuing popularity of social media among libraries, only a few studies, mostly in the academic library context, have investigated the perceptions of librarians toward the use of social media in their libraries. For instance, in their survey study of 126 academic librarians concerning their perceptions toward Facebook, [Charnigo and Barnett-Ellis \(2007\)](#) found that most of the librarians were neutral about Facebook although some were enthusiastic about its potential for library marketing. In contrast, [Chu and Du \(2013\)](#)'s study, discussed in the previous paragraph, indicated that most library staff perceived the usefulness of social networking tools positively, suggesting a "shift" in how libraries value these tools from the above [Charnigo and Barnett-Ellis \(2007\)](#)'s finding ([Chu and Du, 2013](#), p. 69). In another more recent survey study of 58 college libraries in the UK, however, [Jones and Harvey \(2016\)](#) reported that the average rating for the effectiveness of social media as a promotional tool for their library was only 2.9, just above the middle of the rating scale from

one (ineffective) to five (effective). In addition, [Fasola \(2015\)](#)'s survey study of 81 librarians in Oyo state, Nigeria revealed that while librarians from academic and special libraries exhibited high perceptions and acceptance of using Facebook and Twitter for promoting library services, a large number of the respondents in public libraries were negative about their usefulness. Thus, this review shows that there have been some mixed results across these perception studies.

3. Method

3.1 Measures

As mentioned in the Introduction section, an online survey was conducted to carry out the study. The initial version of the survey questionnaire was derived from in-depth interviews with three local public librarians who were responsible for their libraries' social media. It was then further developed based on extant research reviewed in the previous section as well as studies on software adoption in information systems related research (e.g. [Cavanagh, 2016](#); [Chu and Du, 2013](#); [Glynn *et al.*, 2005](#); [Jones and Harvey, 2016](#); [Macredie and Mijinyawa, 2011](#); [Paré *et al.*, 2009](#); [Rutherford, 2008b](#); [Seddon and Kiew, 1996](#); [Smeaton and Davis, 2014](#)). The final survey questionnaire with both close- and open-ended questions is shown in the Appendix.

3.2 Data collection

The collection of contact information (i.e. e-mail addresses) was first done manually by visiting the websites of 50 state library departments in the USA and locating their library directories containing the e-mail addresses of the state's public library directors/librarians. A total of 4,252 public library directors/librarians' e-mail addresses were obtained from 25 state library directories. The public library directors/librarians were then asked to forward the survey invitation to the staff member who is in charge of social media in their libraries. As an incentive, survey participants were optionally entered to win one of five \$50 Amazon gift cards. After the removal of surveys with a large number of missing values, a set of 470 usable surveys remained for data analysis.

3.3 Descriptive statistics

The descriptive statistics of our sample by library service population and popularity of social media tools are presented in the following.

[Table I](#) categorizes responses according to library service population ([The Institute of Museum and Library Services, 2017](#)), which is often used as a proxy for the size of a library (e.g. [Cavanagh, 2016](#)). Libraries serving 2,500-9,999 people (26 percent) and 10,000-24,999 people (24.5 percent) together constitute about half of the respondents. Libraries serving less than 2,500 people or more than 50,000 people contributed the second most responses at 18.7 percent each. At last, the libraries that contributed the least amount of responses were libraries serving 25,000-49,999 people at 12.1 percent.

Service population	Freq.	%
Less than 2,500	88	18.7
2,500-9,999	122	26.0
10,000-24,999	115	24.5
25,000-49,999	57	12.1
50,000 or greater	88	18.7
Total	470	100.0

Table I.
Responses by library
service population

The second question asked survey respondents to check all social media tools that their library uses for marketing purposes. As shown in Table II, Facebook (97.7 percent) was found to be the most popular social media tool for marketing in public libraries, followed by Twitter (47.0 percent). A number of studies have previously examined the use of these two popular tools in public libraries (e.g. Aharony, 2012; Cavanagh, 2016; Neo and Calvert, 2012; Witte, 2014), and this finding indicates that they continue to be widely employed in public libraries. It is also consistent with findings from other recent studies (e.g. Boateng and Liu, 2014; Chu and Du, 2013) that found Facebook and Twitter to be the most popular tools in the academic library context. The next popular tool was Pinterest (37.4 percent), suggesting that it is becoming more favored (Dowd, 2013). Other popular tools include Instagram (26.6 percent), YouTube (21.3 percent), and Goodreads (18.7 percent). In addition, respondents who selected “other” (13.2 percent) were further asked to specify their answer, and the tools mentioned multiple times include Constant Contact (7), Flickr (6), LinkedIn (5), WordPress (4), Snapchat (3), blogs (2), and MailChimp (2). The tools that appeared only once include LibraryThing, Meetup, MyEye, Peach, Periscope, and so on.

We were also interested in finding out if there was any correlation between library service population, and the number of social media tools employed for marketing purposes. As seen in Table III, the mean number of tools used becomes greater as the library service population increases. The total mean was 2.77 across the respondents’ libraries. A Spearman’s rank-order correlation analysis also confirmed that the two are in a positive relationship ($r_s=0.466, p<0.01$).

4. Findings and discussion

In this section, we outline and discuss the current state of social media use for marketing in public libraries from the following perspectives: challenges, motivators, and perceptions (i.e. perceived importance and future use intention).

Table II.
Popularity of social
media tools for
marketing

Social media	Freq. (n=470)	%
Facebook	459	97.7
Twitter	221	47.0
Pinterest	176	37.4
Instagram	125	26.6
YouTube	100	21.3
Goodreads	88	18.7
Google+	46	9.8
Tumblr	38	8.1
Other	62	13.2

Table III.
Number of social media
tools by library service
population

Service population	n	Mean	SD	Min.	Max.
Less than 2,500	88	1.75	1.20	0	6
2,500-9,999	122	2.17	1.33	0	7
10,000-24,999	115	2.97	1.76	0	8
25,000-49,999	57	3.07	1.36	1	6
50,000 or greater	88	4.19	2.02	1	10
Total	470	2.77	1.77	0	10

4.1 Challenges

To determine challenges on social media adoption for marketing in public libraries, the survey respondents were presented with a list of 12 factors (C1 to 12) identified from the interviews and literature mentioned in section 3.1 as challenges for libraries to employ social media, and were asked to indicate their level of agreement with each factor as a challenge on a Likert scale of one to seven, where one was strongly disagree, four was neither agree nor disagree, and seven was strongly agree.

Table IV shows that the means of three factors: C4, 5, and 9 were either over five – somewhat agree (C4) or four – neither agree nor disagree (C5 and 9), confirming that the majority of respondents felt that these factors were indeed challenges to implementing social media in their libraries for marketing purposes. A number of previous studies have already pointed out a lack of staff resources (C4) as one of the main issues hindering the adoption of social media (e.g. Chu and Du, 2013; Jones and Harvey, 2016; Neo and Calvert, 2012; Rutherford, 2008b). Given the lack of budget in most public libraries across the nation, this finding indicates that public libraries continue to struggle with finding staff time for social media management. At the same time, it also indirectly highlights “the time-consuming nature of SM [social media]” (Jones and Harvey, 2016, p. 11) and that the successful use of social media requires relentless upkeep and monitoring. Both C5 and 9 with the next highest ratings are related to a lack of staff skills and expertise, and like C4 they have also been repeatedly revealed as critical barriers in several existing studies (e.g. Chu and Du, 2013; Jones and Harvey, 2016; Rutherford, 2008b). This suggests that although there are a plethora of practice-oriented publications (Phillips, 2015) and the staff are expected to have gained greater familiarity with social media, public libraries are still in need of active and constant investments into these areas. While the means of about a half of the factors (i.e. C11, 12, 8, 6, 7, and 2) fell under, but very closely to, the neutral point of four, it is interesting to report that the factors pertinent to library culture and staff acceptance (i.e. C10, 3, and 1) were found to have the lowest means at a mean close to three, the “somewhat disagree” category. It is apparently contradictory to the finding of Rutherford (2008b) that demonstrated a lack of staff acceptance as the most critical challenge to implementing social media in public libraries about a decade ago. This implies that, unlike the early stages of social media when doubts about its effectiveness were common, it is now better accepted as playing an important, not an optional, role in public libraries.

At last, we performed one-way ANOVA and Tukey HSD tests using SPSS 23 software to determine if there were any significant statistical mean differences by library service population. We found that the mean of C9, a lack of staff training, decreases as the library service population increases. In addition, there were statistically significant differences as

Challenges	<i>n</i>	Mean	SD
Difficulty in finding staff time to plan, maintain, and monitor (C4)	470	5.31	1.71
Lack of expertise in social media marketing (C5)	470	4.59	1.73
Lack of staff training (C9)	469	4.34	1.76
Lack of analytic tools to assess social media marketing efforts (C11)	470	3.98	1.77
Difficulty in obtaining relevant best practices (C12)	470	3.91	1.61
Concern over leaving out people who do not have access to or use social media (C8)	470	3.88	1.81
Concern over security and privacy issues (C6)	470	3.76	1.70
Difficulty in setting up a policy for social media use (C7)	470	3.56	1.61
Staff unwillingness to undertake new learning (C2)	469	3.45	1.86
Library culture resisting to change (C10)	469	3.27	1.76
Doubt about the effectiveness of social media for marketing (C3)	470	3.20	1.71
Lack of staff acceptance (e.g. seeing social media as trendy) (C1)	470	2.99	1.71

Table IV.
Challenges on social
media adoption for
marketing

determined by one-way ANOVA, $F(4, 464)=5.975, p=0.000$. A Tukey *post hoc* test revealed that the mean of the less than 2,500 category (4.85) was statistically significantly higher than those of the 25,000 to 49,999 (3.84) and 50,000 or greater (3.80) categories ($p=0.006$ and 0.001 , respectively). In addition, the mean of the 2,500 to 9,999 category (4.60) was statistically significantly higher than that of the 50,000 or greater category (3.80) ($p=0.001$). Thus, it can be inferred that public libraries with a smaller service population may be in a greater need of staff training on social media marketing than those with a larger service population.

In addition, respondents were asked if they could think of any other challenges. A total of 60 respondents answered this open-ended question. Some answers addressed more than one challenge, and thus a total of 72 comments were analyzed. As shown in Table V, 50 out of 72 comments were reiterating some of the challenges presented in Table IV. In total, 22 comments (44.0 percent) underlined a lack of staff resources (C4) as a crucial issue, and 11 comments (22.0 percent) highlighted a lack of staff training and/or expertise (C5/9) as two other major barriers. Thus, about 65 percent of comments echoed the same findings from Table IV regarding C4, 5, and 9 to emphasize the significance of these challenge factors. Interestingly, however, the comments most mentioned next, at 16.0 percent, were related to C8, which was found to be slightly below the neutral point of four in Table IV. They all stressed the issue of digital divide that small and/or rural libraries often face.

The remaining 22 comments were on other challenges that were not covered in C1-12 (see Table VI). The two most common categories (7/22, 31.8 percent each) were: the controls by

Challenges	Freq.	%	Sample comments
C4	22	44.0	Staff time is the biggest challenge Most public libraries, it comes down to how staff time affects the budget The only challenge is having enough staff to create staff time for running social media
C5/9	11	22.0	Finding time to do it without giving anything else up Time and expertise are the big ones Difficulty of figuring out how to effectively use social media networks that younger audience is using Trying to decide which social media to use to reach our target demographic, especially knowing that we want to reach a wide range of ages
C8	8	16.0	Digital literacy, access and inclusion are challenges we are currently dealing with. Many of our patrons do not have access to a computer or the internet, because of this many of them don't feel particularly inclined to visit our website or Facebook page since they get the information from the library directly We are in a rural area where internet access is difficult for about 40% of our population. Outlying patrons may be on dial-up, or use dish access which is unreliable due to weather
C1	3	6.0	I use it, but other staff have not adopted it. I assume their resistance is due to not feeling comfortable, not enough time, not interested in doing so
C11	3	6.0	Tools to assess and track local trends would be useful in the efforts to plan and steer mobile social efforts. Assessments of area business, organizations, groups social media activity at a geographical glance would be an amazing bit of harnessed information to explore and replicate for libraries
C3	2	4.0	It's hard to tell if it is making a difference. The only time we noticed a marked difference was when we launched a paid advertising campaign on Facebook to promote our ebooks and noticed that the number of signups per month doubled. Our baseline was low, so we figured it probably wasn't worth the cost
C2	1	2.0	We are extremely small, there are only two paid staff members and both of us are past the "easy-to-learn-technology" phase
Total	50	100	

Table V.
Comments reiterating
the challenges in
Table IV

Table VI.
Other challenges

Challenges	Freq.	%	Sample comments
Controls by upper administration	7	31.8	Politics: the County Commissioners have attempted to consolidate all social media tools, particularly Facebook, as one entity. This strategy fails to effectively reach the target market As a public library/city agency, we must follow municipal policies regarding the use of social media and in some cases these policies limit “social” activity on social media
System issues	7	31.8	Resistance from governing boards – trustees, local town authorities Facebook limits our fans from seeing some of our posts. We do not always know if they can see what we have posted We find Facebooks algorithms to be difficult to work with, in that too many posts can lead to *less* visibility at times Facebook makes it difficult to reach all of our followers due to the way FB allows posts to be seen
Lack of user engagement	4	18.2	Getting the community involved on social media Motivating patrons to open posts
Other	4	18.2	Our biggest concern is whether multiple staff who are able to post to social media will create competition among programs. We have a lot of programming and try to be mindful that we don’t drown out each other’s events The ever-shifting interests from the populace, e.g., kids moving from Facebook to Instagram. Hard to keep up with the trends Staff does not have smartphone to participate By the very nature of using social media to market we are taking risks that will eventually challenge us, if our goals remain to provide our community members with deep meaningful reading experiences. Social media is shallow at best, although it’s better than no media interactivity, it is not optimal and probably never will be
Total	22	100	

upper administration, such as local government and board members, and some system issues with certain social media tools such as post visibility issues on Facebook. Four comments (18.2 percent) expressed difficulty in attracting user engagement, and four other minor comments (4/22, 18.2 percent) were grouped under the “other” category.

4.2 Motivators

The survey respondents were also presented with a list of five factors (M1 to 5) identified from the interviews and literature mentioned in section 3.1 as motivators to social media adoption for marketing purposes in public libraries, and were asked to indicate their level of agreement with each factor as a motivator on a Likert scale of one to seven, where one was strongly disagree, four was neither agree nor disagree, and seven was strongly agree.

As shown in [Table VII](#), all five motivators were either over five – somewhat agree (M2, 1, 3, and 4) or four – neither agree nor disagree (M5), indicating that the majority of our

Table VII.
Motivators to social media adoption for marketing

Motivators	<i>n</i>	Mean	SD
Peer influence (e.g. other libraries’ active use of social media for marketing) (M2)	470	5.70	1.21
Top management support (M1)	470	5.68	1.37
Patrons’ demand and acceptance (M3)	470	5.41	1.27
Library’s organizational innovativeness (M4)	470	5.41	1.26
IT support (M5)	470	4.38	1.63

respondents agree that they are drivers toward social media implementation in their libraries. The two motivators with the highest means were peer influence (M2) and top management support (M1), and both are often cited as important motivators for technology adoption in IS-related research (e.g. Glynn *et al.*, 2005; Macredie and Mijinyawa, 2011). Both patrons' demand and acceptance (M3) and library's organizational innovativeness (M4) were found to be regarded the second best motivators with the next highest mean of 5.41. The mean of information technology support (M5) marked the lowest, but was still found to be higher than the neutral point of four.

At last, we performed one-way ANOVA and Tukey HSD tests using SPSS 23 software to determine if there were any statistical mean differences by library service population, and we did not find any meaningful patterns or significant mean differences.

Respondents were also asked if they could think of any other motivators. A total of 37 respondents answered this open-ended question. Some answers addressed more than one motivator, and thus a total of 41 comments were analyzed. As shown in Table VIII, only 7 out of 41 comments were reiterating three of the motivators (M1, 2, and 3) presented in Table VII. Four comments highlighted peer influence (M2) as a strong motivator while two other comments emphasized patron's demand and acceptance (M3) as the key to social media adoption. One comment stressed top management support (M1) as an important driver.

A large number of comments (34/41, 82.9 percent) were on other motivators that were not covered in M1-5 (see Table VII). The most common category (12/34, 35.3 percent) pointed to the efficiency of social media (e.g. ease of use, less expensive, fast) as the key to social media adoption. In the second category, 32.4 percent (11/34) stated that social media offers public libraries ways to reach greater/targeted audiences. A smaller group (5/34, 14.7 percent) expressed the interactivity of social media as an important motivator. Two comments (5.9 percent) suggested staff use was driving the library-level implementation. Four other minor comments (4/34, 11.8 percent) were grouped under the "other" category (Table IX).

4.3 Perceptions

One of the main goals of this study was to offer a snapshot of the current perceptions of public libraries toward the use of social media for marketing in their libraries. In the last paragraph of the literature review section, we pointed out that only a handful of studies have examined the perceptions, largely in the academic library context, and that they reported some mixed findings. To better capture the survey respondents' perceptions toward the use of social media for marketing in their libraries, we employed two constructs containing multiple items: perceived importance and future use intentions (Seddon and Kiew, 1996). The first construct, perceived importance, consists of five items assessing different aspects of the concept,

Table VIII.
Comments reiterating
the motivators in
Table VII

Motivators	Freq.	%	Sample comments
M2	4	57.1	Seeing other companies, especially libraries, using these outlets was definitely an indicator that it was time to set our own account up Peer influence internally is a strong motivator It's the way of the world today
M3	2	28.6	Not just patron acceptance, but their positive feedback Obviously our patrons' use of social media is the highest motivator
M1	1	14.3	Even though the board of trustees are hesitant and not all together supportive or have the vision to see the uses of social media for marketing purposes, the library's director is pushing of this technology. It's just harder to get staff "buy in" considering everyone is already stretched as it is
Total	7	100	

Motivators	Freq.	%	Sample comments
Efficiency (e.g. ease of use, less expensive, fast)	12	35.3	Ease of use (as opposed to printing and hanging posters, mail campaigns, etc.) and price A motivator is that it's another FREE way to market the library (for the most part – I have paid for boosting recently) Timeliness – ability to reach target audience more quickly than other marketing tools
Greater/targeted reach	11	32.4	It is relatively easy to keep updated Reaching the digital generation The desire to share images, promotions, and interesting information to a larger swath of the library service population The desire to reach a tech-savvy audience It's the way younger generation (Those 30 and under) keep in contact. Great way to outreach to this group
Interactivity	5	14.7	Desire for marketing that allows for direct interaction and feedback from patrons We enjoy engaging with our patrons in this on-line format Enjoyable way to interact and get feedback with patrons
Staff use	2	5.9	Personal use by staff Individual staff people are driving usage of social media
Other	4	11.8	Popular books launches, publishers, national library campaigns and community initiatives that make content ready to share for libraries is a highly effected motivation for posting/adoption Library transparency Opportunities for involvement from a wide spectrum of staff positions Library Board insists we must be active on Facebook
Total	34	100	

Table IX.
Other motivators

“importance,” on a semantic differential scale of one to seven. As shown in [Table X](#), four of the five aspects were close to six, and the remaining one aspect (Trivia – Fundamental) was still over five, indicating that social media as a tool for marketing is perceived highly positively by public librarians. Similarly, the second construct, future use intention, has three items measuring different aspects of the concept, “future use,” on a Likert scale of one to seven, where one was strongly disagree, four was neither agree nor disagree, and seven was strongly agree. As shown in [Table XI](#), respondents overall indicated that they intend to

Social media marketing in your library is	<i>n</i>	Mean	SD
Unimportant (1)-Important (7)	469	5.95	1.15
Irrelevant (1)-Relevant (7)	468	5.97	1.15
Trivial (1)-Fundamental (7)	467	5.37	1.31
Non-Essential (1)-Essential (7)	468	5.54	1.25
Non-Needed (1)-Needed (7)	468	5.93	1.15

Table X.
Perceived importance

	<i>n</i>	Mean	SD
Our library intends to more actively use social media for marketing (FUI1)	470	5.82	1.06
Our library will increase the depth and breadth of social media use for marketing (FUI2)	470	5.57	1.13
Our library will invest more resources into using social media for marketing (FUI3)	470	4.96	1.42

Table XI.
Future use intention

increase the use of social media for marketing purposes (FUI1 and 2), but when asked if they would invest more resources into using social media for marketing (FUI3), they only slightly agreed. This could be attributed to the lack of staff resources that was found to be the most critical challenge to social media adoption (see C4 in [Table IV](#)).

5. Conclusion

By conducting an online survey targeting public libraries in the USA, this study made several contributions to the literature and the library field, particularly the public library field. First, this study identified the types and popularity of social media tools employed in public libraries for marketing purposes. Consistent with some recent studies (e.g. [Boateng and Liu, 2014](#); [Chu and Du, 2013](#)) and the current trend, popular social media channels such as Facebook, Twitter, and Pinterest were found to be the most widely employed in public libraries. Unsurprisingly, we also found that the number of social media tools used is positively associated with library service population.

Second, this study determined a range of challenges and motivators to implementing social media for library marketing, which public libraries can consult when employing social media in their libraries. As already pointed out by several existing studies (e.g. [Chu and Du, 2013](#); [Jones and Harvey, 2016](#); [Rutherford, 2008b](#)), a lack of staff resources, skills, and expertise (C4, 5, and 9) were found to be the most critical challenges public libraries faced when adopting social media. Interestingly, however, the factors related to library culture and staff acceptance (C10, 3, and 1) were no longer perceived to be a critical challenge by public librarians. When asked if they could think of any other challenges, the majority of the comments reiterated a lack of staff resources, skills, and expertise (C4, 5, and 9) as the major barriers. A few newly identified challenges from the open-ended question include the controls by upper administration, system issues, and a lack of user engagement.

With regard to the motivators, the majority of the survey respondents indicated that all five factors (M1-5) help promote the implementation of social media in their libraries. The two motivators with the highest means were peer influence (M2) and top management support (M1). When asked if they could think of any other motivators, many mentioned other motivators that were not already listed in the questionnaire (see [Table VII](#)) such as efficiency (e.g. ease of use, less expensive, fast), greater/targeted reach, interactivity, and so on.

In addition, this study provided a snapshot of the current perceptions of public libraries toward the use of social media for library marketing. As previously pointed out, some mixed results were reported, mostly in the academic library context. For better assessment, this study used the two constructs containing multiple items: perceived importance and future use intentions ([Seddon and Kiew, 1996](#)). The results showed that respondents perceive social media as an important tool for their library marketing and intend to increase their use.

Based on the above, our recommendations for public libraries are as follows:

- Be aware of and prepared for the issues of a lack of staff resources, skills, and expertise (C4, 5, and 9) that were found to be the three most critical challenges in this study.
- The factors related to a lack of staff acceptance (C10, 3, and 1) are no longer perceived to be a critical challenge, and thus there is little need to make efforts to address them.
- Also, pay attention to the several other challenges that were identified via our challenge open-ended question, such as the issue of digital divide, controls by upper administration, system issues, and lack of user engagement.
- In addition to the five factors (M1-5) that were found to be an important motivator in this study, promote the several other motivators that were also identified through our

motivator open-ended question, such as the efficiency, greater/targeted reach, and interactivity of social media.

- At last, if your library has not employed social media for marketing purposes, keep in mind that many perceive social media as an important tool for their library marketing and intend to increase their use.

This study has several limitations and offers some suggestions for future research. First, by the phrase, library service population (see the first question in the Appendix), we meant the area population that the library serves. The answer choices of the question were adapted from [The Institute of Museum and Library Services \(2017\)](#), which is the latest version of the annual public library survey administered nationally by the Institute of Museum and Library Services. [The Institute of Museum and Library Services \(2017\)](#) uses the phrase, population served, and we believe that our respondents are familiar with the survey, and thus the phrase. However, to eliminate any other possible interpretation (e.g. the actual members of the library), it is suggested that future studies provide further clarification when employing this question. Second, only librarians were surveyed, and their users were not considered in this study. There has been a lack of research on the user side ([Jones and Harvey, 2016](#)), and thus it is suggested that for more balanced implications, future studies address questions such as how to improve user engagement, what their needs are, what types of contents they are most interested in and/or contribute, etc. A number of suggestions can also be drawn directly from our findings. For example, one of the responses to the question asking for any other challenges pointed out a concern pertinent to how to coordinate posting among multiple staff members that are in charge of different programs (see [Table VI](#)). Related to this, it would be interesting to look into any best practice that can guide this type of managing issues. Some of the responses also highlighted the issue of digital divide that small and/or rural libraries often face (see [Table VI](#)). Thus, it would also be interesting to examine if there is any difference by locale, which was not a part of our data. In addition, with regard to the lack of staff skills and expertise, future studies are encouraged to examine public librarians' training and education needs, which can inform library science curriculum and libraries' continued learning program developments. As discussed in section 4.1, a finding from our one-way ANOVA and Tukey HSD tests also suggests that public libraries with a smaller service population may be in a greater need of staff training than those with a larger service population. Thus, future research is recommended to further delve into this difference for any possible implications such as relevant funding policy.

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Appendix. Survey questionnaire

Library service population (The Institute of Museum and Library Services, 2017) and Social media type

Q1. What is the approximate service population of your library?

- Less than 2,500
- 2,500 to 9,999
- 10,000 to 24,999
- 25,000 to 49,999
- 50,000 or greater

Q2. Please check all social media that your library uses for marketing purposes?

- ☐ Facebook
- ☐ Twitter
- ☐ Pinterest
- ☐ Google+
- ☐ Instagram
- ☐ YouTube
- ☐ Tumblr
- ☐ Goodreads
- ☐ Other

If you have chosen “other” in the above question, please specify:

Challenges (1: Strongly Disagree; 7: Strongly Agree) (e.g., Cavanagh, 2016; Chu and Du, 2013; Jones and Harvey, 2016; Neo and Calvert, 2012; Paré *et al.*, 2009; Rutherford, 2008b; Smeaton and Davis, 2014)

Q3-1. Challenges on social media adoption for marketing purposes in your library:

- C1. Lack of staff acceptance (e.g., seeing social media as trendy)
- C2. Staff unwillingness to undertake new learning
- C3. Doubt about the effectiveness of social media for marketing
- C4. Difficulty in finding staff time to plan, maintain, and monitor
- C5. Lack of expertise in social media marketing
- C6. Concern over security and privacy issues
- C7. Difficulty in setting up a policy for social media use
- C8. Concern over leaving out people who don't have access to or use social media
- C9. Lack of staff training
- C10. Library culture resisting to change
- C11. Lack of analytic tools to assess social media marketing efforts
- C12. Difficulty in obtaining relevant best practices

Q3-2 If you can think of any other challenges, please specify:

Motivators (1: Strongly Disagree; 7: Strongly Agree) (e.g., Glynn *et al.*, 2005; Macredie and Mijinyawa, 2011; Rutherford, 2008b)

Q4-1. Motivators to social media adoption for marketing purposes in your library:

- M1. Top management support
- M2. Peer influence (e.g., other libraries' active use of social media for marketing)
- M3. Patrons' demand and acceptance
- M4. Library's organizational innovativeness
- M5. IT support

Q4-2. If you can think of any other motivators, please specify:

Perceptions (Seddon and Kiew, 1996)

Q5. Perceived importance

Social media marketing in your library is:

- Unimportant (1) – Important (7)
- Irrelevant (1) – Relevant (7)
- Trivial (1) – Fundamental (7)
- Non-Essential (1) – Essential (7)
- Non-Needed (1) – Needed (7)

Q6. Future Use Intention (**1: Strongly Disagree; 7: Strongly Agree**)

- FUI1. Our library intends to more actively use social media for marketing
- FUI2. Our library will increase the depth and breadth of social media use for marketing
- FUI3. Our library will invest more resources into using social media for marketing

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Information outreach interventions to promote the information access, use and exchange in the rural areas of Pakistan

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Abstract

Purpose – This study is a part of the doctoral dissertation that proposes concrete measures to improve health-care information outreach program for rural health-care professionals in primary and secondary health care in Punjab, Pakistan. This study aims to report on the barriers to accessing and using online health-care information from rural settings of the Punjab province of Pakistan.

Design/methodology/approach – A cross-sectional survey was conducted in primary and secondary health-care settings in the Punjab province of Pakistan. The study's population consisted of the rural primary care physicians (PCPs), who were geographically dispersed across 2,873 different remote health-care settings across Punjab. These practice settings included 2,455 basic health units, 293 rural health centers, 89 tehsil headquarter hospitals and 36 district headquarter hospitals.

Findings – Limited internet access, non-availability of required equipment and lack of training facilities were identified as the main barriers. PCPs' gender, previous enrollment in post-graduation programs and type of health-care facility were significant factors in the perceived barriers related to both "non-availability of required equipment" and "inadequate training facilities on the use of information resources".

Practical implications – The findings of the study hold some important practical implications for different stakeholders. This study identifies and addresses the barriers to accessing and using health-care information for PCPs in rural settings. The success of the health-care information outreach program in Punjab, Pakistan, should rely on the eradication of these barriers.

Originality/value – To the best of the authors' knowledge, this is the first large-scale study in Pakistan that assesses the barriers and proposes ways to overcome these barriers to effectively access and use health-care information.

Keywords Pakistan, Barriers, Information access, Health-care information outreach programme, Primary care physicians, Rural settings

Paper type Research paper

Introduction

Primary care physicians (PCPs), like all physicians, require access to the latest health-care information to support the care of their patients. Access to information resources in their health-care facilities enables self-reliance and better approach to informed patient care decisions. Limited access to the latest, most reliable and wide-ranging information resources results in compromised patient care which is a fundamental problem that rural PCPs face in developing countries such as Pakistan. The problem is particularly acute when the effectiveness of potential interventions is considered (Naeem and Bhatti, 2015; Rural Health Research and Policy Centre, 2009). Without this information being accessible to the majority of health workers in their practice settings, ineffective practices cannot be removed, and new, beneficial practices cannot be introduced. Instead, rural PCPs are likely to remain dependent mostly on ad hoc-related learning events, such as attending workshops and conferences.

Recently, technology has enabled librarians to reach rural and far-flung areas with health-care information (Sapp and Cogdill, 2010; Shumaker, 2009). Several different successful approaches have been reported in the literature to diminish the information inequality between rural and non-rural health-care settings through establishing small libraries, online clinical information systems, mobile libraries and information outreach programs. For example, the British Medical Association has done work via *Clinical Evidence to produce systematic reviews*. The Cochrane Collaboration has also made their reviews freely available in developing countries (Davies, 2011). The World Health Organization has also established the Health InterNetwork Access to Research Initiative program to make many medical journals freely accessible in developing countries (Ajuwon and Olorunsaye, 2013). Unfortunately, Pakistan is not among the countries with access to this network.

Information outreach is the most recommended approach in the literature to improve information access, use and exchange in rural settings (Naeem and Bhatti, 2015; Naeem and Bhatti,

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Information Discovery and Delivery
48/4 (2020) 187–197
© Emerald Publishing Limited [ISSN 2398-6247]
[DOI 10.1108/IDD-09-2019-0066]

The authors would like to acknowledge the support of Dr Keith Cogdill, Director National Institute of Health Library, and Professor Khalid N. Haque, Professor of Neonatal Medicine, for conducting and improving the quality of this research work.

Received 21 September 2019
Revised 7 October 2019
9 February 2020
Accepted 17 February 2020

2016b; Cogdill *et al.*, 2007). The term “information outreach” is very frequently used in library and information science literature. It is defined as a set of activities carried out by librarians for reaching out to targeted audience in the rural settings or far flung areas with information (Burroughs and Wood, 2000). It is also defined as the extending library activities beyond its traditional physical wall (Robinson and Bawden, 2007), entering into someone else’s space – their community to provide un-interrupted access to library and information services (Dutcher and Hamasu, 2005). For example, the London Health Libraries designed an outreach service for mental health workers in primary care (Robinson and Bawden, 2007). The US National Library of Medicine (NLM) has also sponsored numerous outreach programs targeting health professionals in rural settings (Cogdill *et al.*, 2007). NLM’s focus on outreach has contributed to health sciences libraries adding outreach services to their mission statements and strategic plans (Cogdill, 2006; Cogdill *et al.*, 2007).

Unfortunately, rural PCPs’ information access and use in Punjab/Pakistan is hampered by several barriers that include: poor information and communications technology (ICT) infrastructure, geographical distance and non-availability of health sciences libraries (as libraries are only attached to teaching hospitals, also known as tertiary care hospitals, which are available in bigger cities of the Punjab province). Never the less, no information outreach program has ever been initiated in Pakistan for rural health-care professionals. Therefore, information inequality (the gap between information have and have not) has continued to grow between rural and non-rural practice settings to the extent that it has become a risk to public health (Naeem and Bhatti, 2015; Naeem and Bhatti, 2016b, Naeem and Bhatti, 2018).

This study is a part of the doctoral research that proposes an information outreach program for PCPs working in rural areas of Punjab province, Pakistan. It reports on the barriers to accessing and using online health-care information from rural settings. The study aims to base the proposed outreach intervention on evidence; for example, what are the barriers that the population under study facing while accessing and using health-care information from their practice settings, rather than assuming the barriers.

The results of the study provide a foundation for future information outreach targeting PCPs in the Punjab province. It is the first large-scale study of its type in Pakistan and holds essential practical implications for practicing librarians, policymakers, the professionals maintaining electronic libraries across the province, Pakistan Library Association (PLA) and the Health Department of the Punjab province, as it identifies the underlying barriers preventing PCPs from accessing and using online health-care information, as well as highlights their training needs. The study also proposes that the barriers can be reduced with the help of introducing outreach programs.

Research questions

The study attempts to answer the following research questions:

RQ1. What is the satisfaction level of PCPs with the availability and their existing methods of accessing online health-care information from their practice settings?

RQ2. What are the barriers PCPs face while accessing and using online health-care information from rural practice settings?

RQ3. What are the common methods PCPs use for seeking help in solving the barriers to accessing and using the information?

RQ4. What types of equipment and training do PCPs need to access and use online health-care information from their practice settings?

Literature review

Information divide between rural and non-rural practice settings

The digital divide between rural and non-rural areas is growing in developing countries. It has started affecting rural PCPs’ information-seeking behaviors (Pakenham-Walsh and Bukachi, 2009). Several studies have reported that the information needs experienced by PCPs working in rural and non-rural practice settings are the same, but rural PCPs have significantly less access to health-care information resources (Rockefeller Foundation, 2008; González-González *et al.*, 2007; Dee and Blazek, 1997) because of several barriers. These barriers are well documented in the literature. Professional isolation, inadequacy of specialist personnel and limited access to health-care information resources are among the main barriers that prevent PCPs from accessing, using and exchanging the needed health-care information from rural practice settings (Turner *et al.*, 2008; EbELL, 2009; González-González *et al.*, 2007; Dee and Blazek, 1993). The other barriers are related to:

- personnel themselves (e.g. “I don’t have enough training,” “using computers is time-consuming” and “I don’t like computers”) (D’Alessandro *et al.*, 1998);
- lack of internet connectivity;
- lack of access to medical library or evidence-based resources (Rural Health Research and Policy Center, 2009); and
- poor ICT infrastructure and lack of facilities of continued professional development (Dorsch, 2000; Ogbomo, 2012).

Stinson and Mueller (1980) and Short (1999) reported that solo practice in a small community and many years of practice in the same community were also associated with a lack of use of health-care information resources.

A handful of studies conducted previously in the local context have reported that rural PCPs are at a disadvantage regarding new information, as they are underserved by health science libraries and librarians, compared to non-rural PCPs. This ultimately affects their ability to make evidence-based decisions (Naeem and Bhatti, 2015; Naeem and Bhatti, 2016a; Naeem and Bhatti, 2016b). Rural PCPs face numerous difficulties in accessing the required health-care information because of the absence of health-care information outreach programs, health sciences librarians/libraries, lack of training programs and the sparse information infrastructure in their practice setting (Naeem and Bhatti, 2015). This is one of the main reasons for inequality of information access, use and

exchange between rural and non-rural practice settings in Pakistan.

Historical development of health information outreach programs

Information outreach programs are widely recommended and used approach to diminish the information divide between rural and non-rural practice settings (Naeem and Bhatti, 2015; Burroughs and Wood, 2000). In the USA, the American Medical Association (AMA) and NLM have a rich history of designing outreach services for rural PCPs. The “package library” concept was developed by the library of the AMA in 1924. It was the first successful outreach service model in which members and subscribers of the association’s journals were served with health-care information (Pifalo, 2000). “Extension service model” was another name of package library model, in which reference and document delivery services were expanded to users other than the affiliated members (Duffield, 1962; Bloomquist, 1962). The “circuit-riding librarian model” introduced in 1970, was another successful model for health-care information outreach, in which a designated librarian from the staff of a participating hospital visited a group of hospitals to provide the library services such as searching, document delivery and collection development, which were not possible otherwise (Feuer, 1977; Moore, 1973; Cheshier, 1975). The regional medical libraries (RMLs) under NLM’s Regional Medical Library Program served as a network that helped NLM and other libraries across the USA reach marginalized PCPs with health-care information (Cummings and Corning, 1971; Cogdill, 2006). In the 1970s, outreach activities of RMLs networks focused on the establishment and improvement of hospital libraries in rural areas (Cummings and Corning, 1971; Cogdill, 2006).

A significant development in rural outreach took place after the development of telecommunication networks and computers such as the Georgia Interactive Network, that helped provide round-the-clock services to PCPs in rural areas (Pifalo, 2000). This was before the introduction of the internet. Medical Literature Analysis and Retrieval System was developed in 1964. It became available online in 1971 with a new name, MEDLINE. The development of MEDLINE has contributed significantly to information access, use and exchange of information among PCPs in rural and urban settings.

Barriers to information outreach

As health-care information outreach programs have been conducted around the world, several barriers to their success have been identified. Fama *et al.* (2005) identified 18 barriers after reviewing the relevant literature and subsequently carrying out a nation-wide (USA) survey of health sciences libraries. The inadequacy of staff or limited staff expertise, the commencement of an outreach program without users’ requests, lack of funding and limited enthusiasm of library staff were among the main barriers to a successful outreach program. Other barriers were lack of marketing, communication breakdown, limited time, poor coordination, no face-to-face contact, geographic distance, limited access to computers, copyright restrictions, lack of library management support, language barriers, limited collaboration, differences in

a professional culture and repeating failed approaches. Whitney *et al.* (2013) reviewed the published studies on outreach programs between 2000 and 2010 and reported high attrition rates from one session to another in multi-session interventions, low attendance from the target audience in a single session intervention, lack of time and recruitment issues as the main challenges for health-care information outreach programs. Other barriers were related to participants’ transportation to training sites, inadequate experience in the use of computers and the internet and limited financial support. Several outreach projects were initiated in the face of time and financial constraints; therefore, many of these health-care information outreach projects failed to produce the required results as anticipated.

Provision of training

The outreach program literature suggests training to targeted communities to improve their capacity in seeking health-care information as a significant element in the success of outreach programs (Dorsch, 1997; Cogdill *et al.*, 2007; Whitney *et al.*, 2013). After conducting interviews with the project directors of 37 outreach projects, Cogdill *et al.* (2007) establish practical approaches to training, which included: provision of training at convenient locations, one-on-one training, hands-on-practice, customized training, creation of a website to serve as teaching tool, provision of tangible material and publicizing the training. Dorsch and Pifalo (1995) established that future outreach projects should include training continuity. Many outreach programs propose the provision of follow-up training for sustainable use of outreach programs (Robishaw and Roth, 1994; Dorsch, 1997). Whitney *et al.* (2013) highlight that the provision of training materials to targeted audiences in the form of electronic presentation handouts, workbooks with extra exercises and development of project websites are necessary for the sustainability of outreach programs. Dorsch (1997) recommends that training sessions be tailored according to the needs of PCPs and should be divided into small groups and short sessions with emphasis on evidence-based medicine.

In summary, review of literature concludes that information outreach programs have been the recommended approach to improve information access, use and exchange in rural health-care settings for a century. Development of MEDLINE has strengthened outreach services. However, information outreach programs have been affected by several barriers, such as non-availability of required equipment, inadequacy of staff or limited staff expertise, lack of funding, inadequate training facilities and geographical distance. These barriers along with several other barriers reported in the literature have been identified and used to develop the questionnaire for this study.

Although a handful of attempts at a district-level analysis have been made that highlighted the barriers affecting information access, use and exchange in rural settings of Pakistan, so far, no step has been taken to address the barriers at a practical level. The present study is, therefore, conducted at the province level to identify the barriers and provide a foundation for the proposed information outreach program in the province of Punjab, Pakistan. Implementation of this program will help in eradicating the barriers hampering information access so that better information is accessible to PCPs in rural areas.

Material and methods

The study is conducted using a lens of post-positivism philosophical world views. The researchers adopted a quantitative research design. A cross-sectional survey was conducted in primary and secondary health-care settings of the Punjab province in Pakistan. It is essential to understand how health services are provided across provinces in Pakistan. Public health and health-care services function as an integrated health system that is administratively handled at the level of districts. Presently, Punjab has 36 districts that contain 127 tehsils. A tehsil is an administrative sub-division of a district and is administratively subdivided into union councils.

The cohort for the present study was comprised of rural PCPs who were geographically dispersed in 2,873 different remote health-care settings. Primary and secondary health-care settings in Punjab include 2,455 basic health units (BHUs), 293 rural health centers (RHCs), 89 tehsil headquarter hospitals (THQs) and 36 district headquarter hospitals (DHQs).

The survey population ($n = 4,033$) comprised of rural PCPs. Using a Krejcie and Morgan's sample size table, we calculated sample size ($n = 357$) with a confidence level of 95 per cent, and margin of error of 5 per cent for this study (Krejcie and Morgan, 1970). The table used the following sample size formula:

$$n = \frac{X^2 \times N \times P \times (1 - P)}{(ME^2 \times (N - 1) \div (X^2 \times P \times (1 - P)))}$$

Where:

- n = sample size;
- χ^2 = chi-square for the specified confidence level at 1 degree of freedom;
- N = population size;
- P = population proportion; and
- ME = desired margin of error (expressed as a proportion).

A non-probability sampling technique, quota sampling, was adopted to draw a sample from the population. Using quota sampling, we divided the population into four strata i.e. PCPs working in BHUs in stratum A ($n = 1,668$), those working in RHCs in stratum B ($n = 605$), those working in THQs in stratum C ($n = 822$) and those working in DHQs in stratum D ($n = 938$). To keep the equal proportion in each stratum to population, the researchers have drawn 9 per cent of sampling proportion from each stratum (A, B, C and D) to reach the minimum number of required sample size ($n = 357$). As there is a reverse relationship between sample size and margin of error, therefore, the data were collected from 517 PCPs to yield a smaller margin of error.

A two-part questionnaire was developed after reviewing the related literature on health information outreach programs and barriers to information outreach, and pre-assessing the study's settings, including potential information barriers for PCPs. The first part of the questionnaire consisted of questions related to demographic information of the respondents, i.e. gender, age group, working experience, professional category, enrollment in post-graduate education programs and the type of health-care facility. In the second part, a list of 14 possible barriers that were frequently reported in the literature to accessing and using health-care information outreach program in rural practice settings was provided to respondents. These barriers include:

- limited internet access;
- non-availability of required equipment;
- inadequate training facilities on the use of information resources;
- limited awareness of the online resources and services;
- lack of time/busy schedule;
- non-availability of health science library/librarian;
- limited knowledge of computer or internet usage;
- easier to ask a colleague;
- no collaboration;
- geographic isolation;
- limited staff expertise;
- not needed;
- level of management support; and
- cost.

A choose-all-that-apply (often also known as check-all-that-apply) scale was used to obtain the responses on barriers. The respondents were able to choose more than 1 option, therefore, results may not add to 100 per cent in Tables II and V.

The questionnaire was pre-tested by two specialists from information management and library and information science and pilot-tested on 20 respondents. Recommended changes were incorporated into the questionnaire. For example, a list of 20 barriers-items was compiled initially, which was reduced to 14 items after pre-testing by experts. These were included in the questionnaire. Cronbach's alpha coefficients were used to assess the content reliability and internal consistency of the questionnaire. A Cronbach's alpha score (0.83) for 14 items related to barriers indicated very high reliability of a scale.

The final questionnaire, along with a cover letter and self-addressed stamped envelope, was sent to 1,204 PCPs, of which 517 PCPs returned the filled questionnaire (response rate of 42.94 per cent) after 3 follow-up reminders through a telephonic call with a gap of 2 weeks.

The collected data were analyzed using "Statistical Package for Social Sciences" (v-21). The researchers analyzed and reported the data using both descriptive and inferential statistics. The missing responses were replaced using a method of "expectation maximization." Post hoc chi-square statistics were used to determine the significant differences, if any, in the perceived barriers to information access and use based on PCPs' health-care facility, gender distribution, age groups and working experience.

Findings

Demographic information

The majority of respondents i.e. 351 (67.9 per cent) were male, and 166 (32.1 per cent) were female. The gender distribution of the respondents varied in the five different types of health-care facilities (e.g. BHUs and THQs). The difference in gender was much higher in primary (58.4 per cent male vs 41.6 per cent female) than in secondary health-care facilities (48 per cent male vs 52 per cent female).

Respondents were distributed somewhat evenly across primary and secondary settings. Most respondents i.e. 199 (38.5 per cent) were from BHUs, 137 (26.5 per cent) were from DHQs, 118 (22.8 per cent) were from THQs and the least number of respondents i.e. 63 (12.2 per cent) were from RHCs.

Most responding PCPs i.e. 271 (52.4 per cent) were between 21 and 30 years of age and 103 (38 per cent) respondents in this age group worked in BHUs. Only 15 (2.9 per cent) respondents were between 51 and 60 years of age. Most responding PCPs had less than five years of clinical experience.

A total of 203 (39.3 per cent) of the responding PCPs were enrolled in a post-graduate training or degree program [e.g. a master's degree, Fellow College of Physicians and Surgeons (FCPS) or Member College of Physicians and Surgeons (MCPS)]. The enrollment in post-graduation programs varied among PCPs of five different types of health-care facilities. A higher proportion of PCPs from secondary health care was enrolled in post-graduate programs than those in primary health care (50.58 per cent vs 28.24 per cent).

RQ1. What is the satisfaction level of PCPs with the availability and their existing methods of accessing online health-care information from their practice settings?

Respondents were asked to indicate their level of satisfaction with the availability of health-care information sources from their practice settings. Most respondents i.e. 305 (71.4 per cent) were either “very dissatisfied” or “dissatisfied” with the availability of health-care information sources from their health-care facilities. On the other hand, only 49 (11.4 per cent) of the responding PCPs were either “satisfied” or “very satisfied” with the availability of health-care information sources from their practice settings (Table I).

Respondents were also asked to indicate their level of satisfaction with their existing methods of accessing information from their health-care facilities. Most respondents i.e. 248 (57.8 per cent) were either “very dissatisfied” or “dissatisfied” with their existing methods of seeking new health-care information for patient care decisions. On the other hand, 90 (21 per cent) respondents were either “satisfied” or “very satisfied” with their existing methods of accessing online health-care information from their health-care facilities (Table I).

RQ2. What are the barriers PCPs face while accessing and using online health-care information from rural practice settings?

Respondents were asked to select the barriers that prevent their access, use and exchange of health-care information from a list of 14 items. They could identify multiple barriers. More than half of the respondents identified “limited internet access” (61.9 per cent), “non-availability of required equipment (e.g. computers)” (61.1 per cent) and “inadequate training facilities on the use of information resources” (60.2 per cent) as barriers (Table II).

Other barriers selected by respondents included “limited awareness of the online resources and services” (27 per cent), “lack of time/busy schedule” (24.2 per cent) and “non-availability of health sciences library and librarians” (21.3 per cent). Response options such as “not needed,” weak “level of management support” and “cost” were selected by 2.7 per cent or fewer respondents (Table II).

Difference between respondents' health-care facility and barriers to information

Using post hoc chi-square analysis, a statistically significant difference with a small effect size was found across the PCPs of

different health-care facilities in the perceived barriers related to “limited internet access” [$\chi^2(4) = 23.024, p = 0.000$, Cramer's $V = 0.211$] and “non-availability of required equipment” [$\chi^2(4) = 27.414, p = 0.000$, Cramer's $V = 0.230$]. These were greater barriers for PCPs working in BHUs as compared to PCPs working in other health-care facilities such as RHCs, THQs and DHQs. No statistically significant difference was found in the opinion of PCPs from different health-care facilities in considering “inadequate training facilities on the use of healthcare information resources” as a barrier [$\chi^2(4) = 1.603, p = 0.808$] (Table III).

In all, 27 per cent of responding PCPs considered “limited awareness of the online resources and services” as a barrier that prevented their access to health-care information. However, no statistically significant difference was found in the opinion of responding PCPs across different health-care facilities related to this barrier [$\chi^2(4) = 1.061, p = 0.900$] (Table III).

Difference between respondents' gender distribution and barriers to information

Post hoc chi-square statistic was used to determine any differences, if any, in the barriers faced by male and female respondents. Of the 14 barriers, a statistically significant difference was found in 3 barriers: “non-availability of required equipment (e.g. computers)” [$\chi^2(1) = 4.627, p = 0.031, phi = 0.095$], “inadequate training facilities on the use of information resources” [$\chi^2(1) = 11.028, p = 0.001$, Cramer's $V = 0.146$] and “non-availability of health sciences library/librarian” [$\chi^2(1) = 5.641, p = 0.018, phi = 0.104$].

“Non-availability of required equipment” was more of a barrier for male respondents as compared to female respondents (64.1 per cent vs 54.2 per cent). Similarly, “limited awareness of the online resources and services” (31.3 per cent vs 17.5 per cent) and “non-availability of health science library/librarian” (24.2 per cent vs 15.1 per cent) were identified more frequently by male respondents than by females.

Difference between respondents' age groups and barriers to information

Post hoc chi-square statistics were used to determine significant differences, if any, among the perceived barriers across four age groups (21–30, 31–40, 41–50 and 51–60 years). The p -values for all 14 statements are above a significance level of 0.05, indicating that there is no statistically significant difference in the perceived level of barriers across different age groups.

Difference between respondents' working experience and barriers to information

Post hoc chi-square statistics were used to determine significant differences, if any, in the perceived barriers to health-care information across four different groups of PCPs' years of work experience (< 5, 6–10, 11–15 and 15+ years). The p -values of all 14 statements are above a significance level of 0.05, indicating that there is no statistically significant difference in the perceived level of barriers based on years of experience.

Difference between respondents' enrollment in post-graduation and barriers to information

Post hoc chi-square statistics was used to determine significant differences, if any, in the perceived barriers based on

Table I Respondents' satisfaction with the availability and their existing methods of accessing online health-care information

	Primary health care		Secondary health care		Others	Total
	BHUs (N = 199)	RHCs (N = 63)	THQs (N = 118)	DHQs (N = 101)	(N = 36)	(N = 517)
<i>Respondents' satisfaction with the availability of health-care information sources from their practice settings</i>						
Very dissatisfied	28 (6.6%)	14 (3.3%)	8 (1.9%)	10 (2.3%)	2 (0.5%)	62 (14.5%)
Dissatisfied	101 (23.7%)	23 (5.4%)	64 (15%)	44 (10.3%)	11 (2.6%)	243 (56.9%)
Unsure	17 (4%)	10 (2.3%)	19 (4.4%)	22 (5.2%)	5 (1.2%)	73 (17.1%)
Satisfied	13 (3%)	3 (0.7%)	12 (2.8%)	16 (3.7%)	4 (0.9%)	48 (11.2%)
Very satisfied	0 (0%)	0 (0%)	0 (0%)	0 (0%)	1 (0.2%)	1 (0.2%)
Total	159 (37.2%)	50 (11.7%)	103 (24.1%)	92 (21.5%)	23 (5.4%)	427 (100%)
<i>Respondents' satisfaction with their existing methods of accessing online health-care information from their practice settings</i>						
Very dissatisfied	52 (12.1%)	16 (3.7%)	18 (4.2%)	19 (4.4%)	1 (0.2%)	106 (24.7%)
Dissatisfied	62 (14.5%)	17 (4%)	34 (7.9%)	20 (4.7%)	9 (2.1%)	142 (33.1%)
Unsure	21 (4.9%)	7 (1.6%)	26 (25.2%)	30 (32.6%)	7 (28%)	91 (21.2%)
Satisfied	23 (5.4%)	9 (2.1%)	25 (5.8%)	23 (5.4%)	8 (1.9%)	88 (20.5%)
Very satisfied	1 (0.2%)	1 (0.2%)	0 (0%)	0 (0%)	0 (0%)	2 (0.5%)
Total	159 (37.1%)	50 (11.7%)	103 (24%)	92 (21.4%)	25 (5.8%)	429 (100%)

Table II Barriers to accessing and using online health-care information

Rank	Statements	Primary health care		Secondary health care		Others	Total
		BHUs (N = 199)	RHCs (N = 63)	THQs (N = 118)	DHQs (N = 101)	(N = 36)	(N = 517)
1	Limited internet access	148 (28.6%)	37 (7.2%)	66 (12.8%)	50 (9.7%)	19 (3.7%)	320 (61.9%)
2	Non-availability of required equipment (e.g. computers)	147 (28.4%)	34 (6.6%)	70 (13.5%)	51 (9.9%)	14 (2.7%)	316 (61.1%)
3	Inadequate training facilities on the use of information resources	121 (23.4%)	40 (7.7%)	73 (14.1%)	58 (11.2%)	19 (3.7%)	311 (60.2%)
4	Limited awareness of the online resources and services	53 (10.3%)	18 (3.5%)	35 (6.8)	24 (4.6%)	10 (1.9%)	140 (27%)
5	Lack of time/busy schedule	48 (9.3%)	15 (2.9%)	32 (6.2%)	19 (3.7%)	11 (2.1%)	125 (24.2%)
6	Non-availability of health science library/librarian	37 (7.2%)	10 (1.9%)	26 (5.0%)	28 (5.4%)	9 (1.7%)	110 (21.3%)
7	Limited knowledge of computer or internet usage	45 (8.7%)	16 (3.1%)	21 (4.1%)	15 (2.9%)	11 (2.1%)	108 (20.9%)
8	Easier to ask a colleague	30 (5.8%)	13 (2.5%)	15 (2.9%)	15 (2.9%)	11 (2.1%)	84 (16.2%)
9	No collaboration	30 (5.8%)	4 (0.8%)	8 (1.5%)	7 (1.4%)	5 (1%)	54 (10.4%)
10	Geographic isolation	40 (7.7%)	7 (1.4%)	4 (0.8%)	0(0%)	2 (0.4%)	53 (10.3%)
11	Limited staff expertise	17 (3.3%)	6 (1.2%)	8 (1.5%)	5 (1%)	4 (0.8%)	40 (7.7%)
12	Not needed	7 (1.4%)	0 (0%)	2 (0.4%)	4 (0.8%)	1 (0.2%)	14 (2.7%)
13	Level of management support	5 (1%)	2 (0.4%)	5 (1%)	1 (0.2%)	1 (0.2%)	14 (2.7%)
14	Cost	1 (0.2%)	1 (0.2%)	2 (0.4%)	1 (0.2%)	0 (0%)	5 (1%)

respondents' enrollment in post-graduate programs, e.g. FCPS, MCPS and Master of Surgery. Statistically significant differences were found in barriers related to "non-availability of required equipment (e.g. computers)" [$\chi^2(1) = 5.482, p = 0.021, phi = -0.103$, 54.7 per cent vs 65 per cent], "inadequate training facilities on the use of information resources" [$\chi^2(1) = 5.467, p = 0.019, phi = -0.103$, 53.7 per cent vs 64 per cent] and "limited staff expertise" [$\chi^2(1) = 6.747^a, p = 0.009, phi = -0.114$, 3.9 per cent vs 10.2 per cent]. The respondents who were enrolled in post-graduate programs perceived these barriers significantly less as compared to those who were not enrolled.

RQ3. What are the common methods PCPs use for seeking help in solving the barriers to accessing and using the information?

Respondents were asked to indicate the sources that they used to seek help to solve the problems they encountered while

seeking online health-care information. They were given a list of seven most commonly used sources. They could identify multiple sources. In all, 36 per cent of the respondents indicated that they sought help from "colleagues." "Online tutorial" and "printed manuals" were selected by 24.33 and 14.04 per cent of respondents, respectively, for seeking help in solving the barriers (Figure 1).

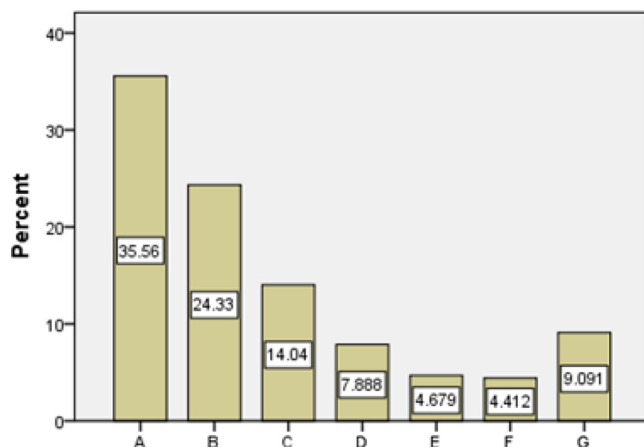
A statistically significant difference with a small effect size was found among the PCPs of different health-care facilities in seeking help by using "online tutorial" [$\chi^2(4) = 13.053, p = 0.011$, Cramer's $V = 0.221$]. However, no significant difference was found among the PCPs of different health-care facilities in seeking help from "colleagues" [$\chi^2(4) = 7.620, p = 0.107$] and printed manuals [$\chi^2(4) = 2.370, p = 0.668$].

Only 9 per cent of respondents reported that "no help is available" to them, with most of these respondents being from BHUs. PCPs from "others" and "RHCs" indicated less

Table III Inferential statistics of barriers to accessing and using online health-care information

Rank	Statements	χ^2 -value	p-value	Cramer's V
1	Limited internet access	23.024	0.000*	0.211
2	Non-availability of required equipment	27.414	0.000*	0.230
3	Inadequate training facilities on the use of information resources	1.603	0.808	0.056
4	Limited awareness of online resources and services	1.061	0.900	0.045
5	Lack of time/busy schedule	2.947	0.567	0.075
6	Non-availability of health science library/librarian	4.798	0.309	0.096
7	Limited knowledge of computer or internet usage	6.079	0.193	0.108
8	Easier to ask a colleague	7.737	0.102	0.122
9	No collaboration	9.176	0.057	0.133
10	Geographic isolation	39.470	0.000*	0.276
11	Limited staff expertise	2.287	0.683	0.067
12	Not needed	3.310	0.507	0.080
13	Level of management support	2.260	0.688	0.066
14	Cost	1.706	0.790	0.057

Note: *The difference is significant at the 0.05 level. Chi-square statistics. Grouping variables: health-care facility (BHUs, RHCs, THQs and DHQs) and others (dispensaries and municipal health centers). $df = 4$

Figure 1

Notes: A. Colleagues, B. Online Tutorials, C. Printed Manuals, D. On-Site Computer Person, E. Medical Library/Librarian, F. Pharmaceutical Representatives and G. No Help is Available

frequent use of “online tutorial” to seek help in solving problems related to health-care information access and use. Only 35 (4.67 per cent) respondents indicated that they sought help from “medical library/librarian” (Table IV and Figure 1).

A statistically significant difference with a medium effect size was found in seeking help from “medical library/librarian” among the PCPs of different health-care facilities [$\chi^2(4) = 15.774$, $p = 0.003$, Cramer's $V = 0.323$]. PCPs from the larger settings were more likely to identify a medical library or librarian as a source of help.

Only 8 per cent of PCPs indicated that they sought help from an “on-site computer person” to solve the problems they encountered while seeking online information. A statistically significant difference was found with a small effect size in seeking help from “on-site computer person” among PCPs of different health-care facilities [$\chi^2(4) = 14.187$, $p = 0.007$, Cramer's $V = 0.281$]. PCPs from the larger settings were more

likely to identify an onsite computer person as a source of help. Respondents were able to choose more than one option. Therefore, results may not add to 100 per cent (Table IV and Figure 1).

RQ4. What types of equipment and training do PCPs need to access and use online health-care information from their practice settings?

Respondents were asked a set of five statements (e.g. “provision of computers and an internet connection” and “information-seeking skills”) to indicate the needed equipment and training to seek the information effectively from their health-care facilities. Most respondents (373; 72.1 per cent) indicated that they needed “computers and internet connection” in their health-care facilities to access the health-care information (Table V).

A statistically significant difference with a medium effect size was found in “the provision of computers and internet connection” among PCPs of different health-care facilities [$\chi^2(4) = 24.628$, $p = 0.000$, Cramer's $V = 0.218$]. PCPs of BHUs identified this need more than the PCPs of other health-care facilities.

About 60 per cent of the PCPs reported that they needed “information-seeking skills training.” In all, 58 per cent of PCPs indicated the need for “in-depth training in using specific resources” (Table V). No significant difference was found in need of PCPs across different types of health-care settings in the “provision of information-seeking skills training” [$\chi^2(4) = 4.035$, $p = 0.401$] and “in-depth training in using specific resources” [$\chi^2(4) = 9.166$, $p = 0.057$].

Almost half of the responding PCPs reported a need for “computer skills training” or “information evaluation skills training” (47.8 per cent and 42.7 per cent, respectively) to seek online health-care information effectively (Table V). No statistically significant difference was found in need for “computer skills training” [$\chi^2(4) = 8.613$, $p = 0.072$] or “information evaluation skills training” [$\chi^2(4) = 14.547$, $p = 0.069$] across PCPs working in different health-care facility types.

Table IV Respondents' common methods of seeking help in solving the barriers to accessing and using the information

	Frequency and percentage of respondents						
	A	B	C	D	E	F	G
BHUs (<i>N</i> = 199)	81 (30.5%)	57 (31.3%)	38 (36.2%)	9 (15.3%)	11 (31.4%)	10 (30.3%)	43 (63.2%)
RHCs (<i>N</i> = 63)	29 (10.9%)	20 (11%)	11 (10.5%)	6 (10.2%)	1 (2.9%)	1 (3%)	6 (8.8%)
THQs (<i>N</i> = 118)	66 (24.8%)	49 (26.9%)	22 (21%)	23 (39%)	4 (11.4%)	11 (33.3%)	12 (17.6%)
DHQs (<i>N</i> = 101)	72 (27.1%)	48 (26.4%)	20 (19%)	16 (27.1%)	14 (40%)	10 (30.3%)	4 (5.9%)
Others (<i>N</i> = 36)	18 (6.8%)	8 (4.4%)	14 (13.3%)	5 (8.5%)	5 (14.3%)	1 (3%)	3 (4.4%)
Total (<i>N</i> = 517)	266 (100%)	182 (100%)	105 (100%)	59 (100%)	35 (100%)	33 (100%)	68 (100%)

Table V Types of equipment and training PCPs need to accessing and using online health information

Rank	Statements	Primary health care		Secondary health care		Others (<i>N</i> = 36)	Total (<i>N</i> = 517)
		BHUs (<i>N</i> = 199)	RHCs (<i>N</i> = 63)	THQs (<i>N</i> = 118)	DHQs (<i>N</i> = 101)		
1	Provision of computers and internet connection	161 (31.1%)	43 (8.3%)	89 (17.2%)	63 (12.2%)	17 (3.3%)	373 (72.1%)
2	Information-seeking skills training	124 (24%)	32 (6.2%)	74 (14.3%)	63 (12.2%)	19 (3.7%)	312 (60.3%)
3	In-depth training in using specific resources	101 (19.5%)	35 (6.8%)	74 (14.3%)	68 (13.2%)	20 (3.9%)	298 (57.6%)
4	Computer skills training	109 (21.1%)	29 (5.6%)	53 (10.3%)	38 (7.4%)	18 (3.5%)	247 (47.8%)
5	Information evaluation skills training	75 (14.5%)	20 (3.9%)	60 (11.6%)	51 (9.9%)	15 (2.9%)	221 (42.7%)

Discussion

Our findings establish “limited internet access,” “non-availability of required equipment (e.g. computers)” and “inadequate training facilities on the use of information resources” as the principal barriers preventing PCPs from accessing and using information from their practice settings. These findings are comparable with the findings of a content analysis of the impact of outreach programs sponsored by the US NLM (Huber *et al.*, 2011), which showed that inadequate training facility and scheduling training sessions as barriers to information access in rural settings. The findings also endorse the barriers reported in previous studies such as non-availability of the internet (Turner *et al.*, 2008; EbELL, 2009; Ogbomo, 2012), lack of equipment, poor telecommunications infrastructure (Marshall, 1992; Naeem and Bhatti, 2015; Naeem and Bhatti, 2016b), access to computers (Fama *et al.*, 2005) and technical problems such as lack of hardware and software (Huber *et al.*, 2011).

The findings also show that PCPs' gender, enrollment in post-graduate programs and type of health-care facility (e.g. DHQs, THQs, RHCs and BHUs) are significant factors in the perceived barriers related to “non-availability of required equipment” and “inadequate training facilities on the use of information resources.” These findings are inconsistent with the findings of a study by Naeem and Bhatti (2016b), which showed that “type of healthcare facility” is not a significant factor in this regard. One of the reasons for this inconsistent finding could be the nature of rural study settings. Of the 2,873 remote health-care settings, 2,455 (85.45 per cent) sampling sites were BHUs based at union councils, which are deprived of internet connectivity, ICT infrastructure and even essential needed equipment. Second, the study presents a broader picture of the barriers than the previous studies that were conducted at the district level; therefore, they were limited in scope. Most of the respondents from secondary health care were enrolled in post-graduate programs compared to those in

primary health care; therefore, the later perceived these barriers significantly less. Thus, the difference in the nature of rural settings from study to study was responsible for the inconsistent findings.

Previous studies reported that PCPs' age and working experience as significant factors to perceived barriers to accessing and using information from rural settings (Naeem and Bhatti, 2016b; Naeem and Bhatti, 2016a). However, age and working experience were not significant factors in our study.

Our findings are comparable with the findings of a previous study, which showed that only 13 per cent of PCPs were either “quite satisfied” or “very satisfied” with their access to health-care information (Naeem *et al.*, 2013). It showed that the majority of responding PCPs are dissatisfied with their access to online information resources from their practice settings, which is quite alarming. Medicine is a highly information-oriented field with biomedical literature expanding very rapidly (Wyatt, 1996). It has been reported that PCPs who read two articles a day will, after 1-year, be centuries behind (Lundberg, 1992). There is evidence that dissatisfaction with access to information resources can lead PCPs to despondency, which can result in compromised patient care decisions (Gatero, 2011; Naeem, Ahmed, and Ishfaq, 2013).

The problem of lack of access is quite alarming in rural settings because of poor ICT infrastructure, the absence of information outreach programs and the non-availability of health sciences librarians/libraries. In Pakistan, health sciences library services are only available at teaching hospitals, also known as tertiary hospitals. PCPs working in primary and secondary health care have little or no access to health sciences libraries or a professional librarian (Naeem and Bhatti, 2016b). Therefore, Naeem and Bhatti (2018) proposed recently a health-care information outreach program for rural settings. The practical implementation of this program is to improve information access and use among PCPs in rural settings.

Regarding receiving help in solving the barriers, 36 per cent of the responding PCPs indicated that they receive help from colleagues, 24.3 per cent use online tutorials and 4.7 per cent from get help from the medical library/librarian. The use of “online tutorial” varies among PCPs of different health-care settings. PCPs from “RHCs” reported less use of “online tutorial” as compared to other health-care facilities. These findings are compatible with the findings of Adeleke *et al.* (2015), that showed that PCPs at RHCs prefer to seek help from experienced colleagues, discussion with consultants (Naeem and Bhatti, 2015) and using online tutorials (Naeem *et al.*, 2013).

Our findings show that 60.3 per cent of respondents need “information-seeking skills training,” 57.6 per cent need “in-depth training in using specific resources,” 47.8 per cent need “computer skills training” and 42.7 per cent required training on “information evaluation skills.” This training can be provided in the form of customized hands-on-practice at convenient locations. One way to engage PCPs in training could be by offering these training sessions as part of their continuing medical education with credit points, which are an essential requirement for PCPs to complete the required number of training hours for registration with Pakistan Medical & Dental Council, the regulatory authority, for issuance of a practicing license in Pakistan (Pakistan Medical & Dental Council, 2019). As far as convenient locations are concerned, these sessions could be organized at district hospitals, or one-on-one training may be given at each rural practice setting. The librarian could provide outreach services, including information skills training to the doctors in their district. The educational activities proposed in the information outreach program not only provide a comprehensive framework for delivering training but also suggest strategies and activities that could be adopted to improve the capacity of PCPs information seeking from their rural practice settings (Naeem and Bhatti, 2018).

Implications of the study

Our study provided baseline data that goes further in identifying two types of sub-goals: “process” and “educational” as essential to the proposed outreach program. The objective being “to improve access, use, and exchange of health information that could benefit patient care in primary and secondary health care facilities in Punjab, Pakistan.” The “educational” sub-goal includes “to increase awareness, develop knowledge and skills among physicians of primary and secondary health care and to make them able to effectively access, use and exchange online health information that could benefit patient care.” The “process” sub-goal includes “establishment and maintenance of internet connectivity in primary and secondary health care facilities in order to facilitate physicians to access, use and share health care information” (Naeem and Bhatti, 2018).

Our study also provided a broader picture of the barriers preventing information access and use in rural settings. Librarians and professional communities have an opportunity to play an active role in minimizing these barriers and improving information access in rural settings. The findings also highlight the type of training required to access and use health-care information from rural settings effectively. The

provision of training to PCPs will improve their knowledge and skills that will help them in accessing and using the needed information.

The practicing librarians should provide information-related services to rural PCPs in terms of information, literacy instructions, reference services and clinical-related information. The Health Department of Punjab province should take a step forward in diminishing the information gap between rural and non-rural practice settings in its health care settings. It should provide the required funds to improve the information infrastructure and recruit health sciences librarians in its rural setting clinics and primary care facilities. PLA along with Library & Information Science professionals of electronic libraries in the province should organize awareness seminars of online resources and services, hands-on training and workshops on the use of information resources. The success of the health-care information outreach program in Punjab, Pakistan, will rely on the eradication of the barriers identified in this study.

Limitations of the study

The study has some limitations, one of which includes using a survey method. Among the limitations of the survey method is respondents’ understanding of the survey questions. To minimize this limitation, the questionnaire was pre-tested and validated as a pilot by two specialists in the fields of information management and library and information science.

Another limitation was the respondents’ restriction to select from a list of 14 barriers. These barriers were identified from a literature review and pre-assessing the study settings. Moreover, the study reports the perceived barriers to information access and use that might differ from actual barriers. Nevertheless, it is recommended that a qualitative study may be conducted to understand barriers to health-care information use, access and exchange more thoroughly.

The data for this study were collected from rural PCPs of the Punjab province. Therefore, the findings of this study may not be generalizable to other health-care professionals such as physicians, consultants and post-graduate trainees, working in tertiary/teaching hospitals. The findings also may not be generalizable to PCPs working in other provinces such as Sindh, Baluchistan and Khyber Pakhtunkhwa, because of differences in the health-care system, rural practices, ICT infrastructure and health-care facilities.

Conclusion

The results of our study identifies limited internet access, non-availability of required equipment, and lack of training facilities as the principal barriers preventing health-care professionals from accessing, using and exchanging health-care information in the primary and secondary health-care facilities of Punjab, Pakistan.

The study recommends that the eradication of these barriers is essential for diminishing the information gap between rural and non-rural health-care settings and building a sustainable and ethical information future. The study also recommends the practical implementation of proposed information outreach programs in Punjab. These outreach programs will help significantly in improving information access, use and exchange

in rural health-care settings. Thus, the success of this program in Punjab, Pakistan, will rely on the eradication of these barriers.

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Marketing of Library Resources and Services: A Structured Literature Review

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ABSTRACT

This conceptual paper reviews literature on marketing of library products and services, and discusses various ways and means for the same. Several marketing techniques to promote the usage of library resources and services have been highlighted in the literature. It is seen that majority of libraries do not have a marketing culture. It is recognised that libraries need to formulate marketing plan along with financial budget on a yearly basis so that library resources can be utilised optimally. Libraries in developing countries have been struggling to conduct outreach programmes to market their resources and services. Latest technologies such as, Web 2.0 and mobile services have opened up new avenues to do marketing in efficient and cost effective ways. Therefore, libraries should not leave any stone unturned to apply the latest technologies in promotion of resources and services amongst the stakeholders. The funding agencies must formulate guidelines for marketing the library resources and services so that the library resources can be utilised optimally.

Keywords: Marketing, Web 2.0, mobile services, guerrilla marketing, marketing culture, relationship marketing, library resources, library services

1. INTRODUCTION

Marketing is an approach to achieve users' satisfaction. The idea of applying the concept of marketing in academic libraries started taking momentum during 1969 to 1973 when a series of articles were published by eminent scholars in the field. Marketing and promotion is vital for libraries to enhance their reputation and usage. Library professionals' positive attitude towards marketing is a prerequisite for a successful plan and execution to market library products and services¹. Maximum research published on marketing in library and information science describes the concept, and a few discuss the practical aspects of marketing in libraries. Surprisingly, a small number of studies have been published on the attitude of library professionals towards marketing². The methods of marketing have changed from print media to social media. For example, Wiki, blog, Facebook, Twitter, Flickr, YouTube, instant messaging, etc., can be used to foster the usage of library sources and services. Libraries are under tremendous pressure to cope with users' demands, and it is the need of the hour that the libraries adopt tools and techniques for marketing to satisfy the diverse user groups. Non-print materials are more prevalent and digitised material is the new trend. Tools and techniques have given an opportunity to promote effective use of library resources³.

2. MARKETING OF DIGITAL SERVICES

Libraries should have a clear plan to market their digital services. Several studies have been conducted

to look into this aspect. Libraries need to adopt a coherent approach instead of scattered ones. Further, it is of utmost importance to deliver the right service at the right time to appropriate users in the right place in a cost effective manner⁴. Therefore, libraries should try to formulate marketing strategies. It will also aim to satisfy the five laws of library science. Libraries must continue to evolve to respond to the digital, financial and societal changes.

If libraries do not come up to the expectations of the users, then commercial ventures may grab the opportunity. To counter the situation, the National library of Scotland (NLS) decided to introduce effective marketing relations to ensure the awareness of library sources and services among stakeholders⁵. Harrington & Li⁶ found that marketing initiatives require thorough examination of competitors. They need to identify suitable methods of marketing, assigning the responsibility to the staff and assess the effective methods used on a periodic basis. Adoyoyin⁷ stated that marketing library services is also important because of its scope and also since major portion of the organisations' expenditure goes to services. Major sector of employment is in service sector worldwide. The demand for the service is fluctuating. Hence, marketing of products or services have several implications. The author defined marketing in relation to library services as follows:

- Marketing is user-centered.
- Marketing is profit centered.
- Marketing anticipates the changes through time.

3. PLANNING AND STRATEGIES OF MARKETING

Libraries do not have competitors in an academic organisation; even then, libraries should avoid complacency. Therefore, a well structured written plan should be the part of library strategies to promote the usage of resources⁸. The purpose of any marketing plan in the library is to increase the number of users, develop favourable mindsets, and convincing the users about the benefits of accepting the library services and products. Therefore, in such an environment, user-centric approach in delivering the information becomes market driven. However, library professionals have been slow in adopting a marketing attitude. Hence, an urgent need is felt to get rid of complacency to face the challenges assertively⁹. Kanaujia¹⁰ postulated that each library should have marketing plan which involves contextualization of process, objective defined on yearly basis, 4P (product, price, place and promotion), training of the staff and allocation of funds to execute the plan. Each library should follow the defined marketing strategies so that expectations of the users can be matched with library products and services. She recommended that, to increase user awareness about library sources and services, the financial support of the respective organisation is essential. Librarians must be careful in deciding charges of selective services to recover the cost so that services can be popular among the user group. A wrong decision to recover the cost of service may fade the reputation of the library¹¹.

Kaur & Rani¹² advocated that library and information centres ought to have the mission to do marketing of library products and services. Researchers expressed their disappointment, during surveys in Punjab and Chandigarh regions in India that no library is found with own logo, mission statement and a professional designated to perform the marketing of resources. A successful marketing plan should include librarians, faculty members, and students.

4. MARKETING CULTURE

In his study, Singh¹³, while examining the Finnish research libraries, found three kinds of marketing cultures—(i) strong, (ii) medium, and (iii) weak. Germano¹⁴ advocated the development of service with a valuable plan. The marketing activities must have their own narrative to patrons while reflecting their specific needs at appropriate times. In this way, libraries can establish a strong sense of value among its users to create loyalty. Singh¹⁵ advised in his study that organisations ought to know their marketing culture prior to the move for branding information sources and services.

Robinson¹⁶ communicated that, to remain relevant in this fast changing world, libraries must adopt a marketing orientation. Libraries must try to understand who their users are and what they do. Garoufallou¹⁷ conducted a survey in 151 central and departmental libraries in Greece and found that majority of libraries recognised

the concept of marketing but had not adopted very well. Operational problems are identified as the main hindrance in application of the marketing concept in these academic libraries. These libraries need to go a long way to implement marketing efficiently.

5. RELATIONSHIP MARKETING

Relationship marketing (RM) is the approach to build relationships with users. Broadly, RM cultivates the relationships among users and staff. Thus, it helps in retaining the existing users and enhances loyalty among staff. The RM uses ICT to contact and communicate more easily with library users and potential users in the society. David & Sagun,¹⁸ in a study conducted at Rizal Library of the Ateneo de Manila University, suggested that libraries ought to start relationship marketing strategies with students, faculty, to make the library resources and services visible, and open lines of communication. Henderson¹⁹ stated that RM approach be adopted by library professionals while marketing digital collections. Further, he described the reason of adopting this approach as follows:

- No cost involved;
- Less need to offer incentives to users;
- Less price sensitive;
- Satisfied customers will recommend the service to others users. Thus, library visibility will be enhanced among the user groups.

6. USERS-CENTRIC APPROACH

Library personnel need to formulate a proactive approach of marketing to promote the usage of library sources and services²⁰. Users of the library need personal attention and recognition, apart from satisfying their information needs. To make the library products and services user-centric, library personnel must remember the 4Ps, i.e., products, price, place and promotion. To satisfy the user groups, librarians must evaluate the services on a regular basis so that libraries can give best products and services.

Mu²¹ found that academic libraries ought to market the services actively. Apart from this, reference librarians must keep in mind the language aptitude, learning style and subject of interest of users while marketing library resources. Library should provide a comfortable environment of interaction so that users feel free to ask questions to the reference librarians. Moreover, university libraries should adapt more systematic technique in users' needs assessment so that libraries can provide the best services²².

7. MARKETING VIA WEBSITE

Website of library is a vital tool to share the vision and mission. It is a handy tool to announce the yearly plan, new additions and new initiatives of the library. The resources subscribed by the library can be delivered

to users in a systematic way by building a website of the library. Schmidt²³ stated that libraries can adopt new mode of promotional strategies to access the books and journals in print and digital format to make sure every book has its reader in the new age. Study suggested that librarians must adopt the change by enhancing their skills, attitude and aptitude so that the needs of the users can be understood and resources can be utilised optimally. Kaur & Rani²⁴ postulated that libraries must organise orientation programmes, publicity of resources, and personal contacts on a frequent basis. Besides this, library should have a website which can be used for advertising library products and services and to distribute and disseminate library products and services.

Islam & Hossain²⁵ examined 57 university libraries in Bangladesh and found the websites are not fully utilised for marketing of library resources and services. Majority of websites do not provide online literacy, online help, and copyright documents. Besides this, no library conducts online survey or networking using the website. Similar study was conducted by Kaur²⁶ in Malaysian libraries and found that libraries are not using the websites properly to do promotional activities among the user groups. Gardner²⁷, *et al.*, conducted a study on 69 academic library websites to learn how they promote library resources and services among faculty members. The study found that faculty webpages are most significant to promote library services for research and teaching. Further, the study revealed that libraries have not utilised the opportunities in contributing scholarly communication through creating institutional repositories and open access measures. Libraries need to take such initiatives to remain relevant and visible among the users.

Wenhong²⁸ stated that library marketing is a matching process between library resources and expectations of the users. Using marketing techniques libraries can enhance their visibility and make users more successful in using the library resources and services. The author suggested that exhibitions are a good marketing idea in academic institutions. Libraries have been demanding inclusion of marketing links on their websites. Therefore, library professionals must grab this opportunity in the digital environment²⁹.

8. MARKETING VIA WEB 2.0 TOOLS

A proliferation of information is reaching the society after development in information technology. Web 2.0 has changed the delivery and marketing methods of information sources and services. Commercial agencies have come forward to do this work for big commercial ventures to promote their products. Similarly, libraries have adopted the Web 2.0 tools. In the last ten years, several studies have been conducted on the use of Web 2.0 tools in libraries. Landis³⁰ stated that using the social networking tools such as Facebook can be handy to market the resources and events. The social networking sites can also be useful to remove the barriers in dissemination

of information. Xia³¹ found in his study that use of Web 2.0 tools to market the library resources and service builds a positive connection between the library and users. Ekart³² explained in his study that using Twitter, libraries not only get feedback about library services but also get valuable information about the library users. This valuable information can be used in planning library resources and services.

Mamatha³³ concluded in a study that Twitter was used as an interaction and communication tool as libraries had a large number of followers, which can be helpful. She suggested that professional staff members be used for regularly updating and maintaining the library Twitter feeds to attract more users. Yi³⁴ conducted a study on 400 librarians in 37 academic libraries in Australia to know their perception on Web 2.0 tools. The study found that librarians are using a variety of Web 2.0 tools such as, blog, Facebook, Twitter, Wiki, and You Tube. Vucovich³⁵ *et al.*, pointed out that YouTube can be successfully used in imparting instructions to promote library use. In addition, reference services can be provided successfully using YouTube.

Hendrix³⁶, *et al.*, conducted a study on 70 librarians to know the use of Facebook and found that majority of libraries use the social networking sites (SNSs) to predominately market library services. Besides this, several studies have been conducted to know the application of rich site summary (RSS) feeds applications in libraries. It was found that the RSS feeds updates are being used by academic libraries to market new library services and new additions of print and electronic collections. It is well established that proper use of these feeds services can be useful tools in promotion of library resources and services^{37, 38}. Breeding³⁹ advised the libraries to use the RSS feeds to attract potential users to the library and found the key challenges in the use of Web 2.0 technologies are applications of these tools in marketing and promotion. Xia⁴⁰ revealed in his study that by active participation of librarians on Facebook Groups they can always keep the discussion alive by responding to the queries of students. Therefore, these tools can be a crucial medium to promote the library and help the users in study and research.

9. MARKETING VIA MOBILE PHONE

Goh & Liew⁴¹ states that mobile-based services have been adopted by many users. These services have become extremely popular among the users. The technology has been used to start a library alerts service. A study was conducted by Anbu & Mavuso⁴² at University of Swaziland in collaboration with Emerald Group Publishing Limited and a need was identified to create a prototype model for SMS-based service to do marketing of the library resources. Study also found that longer SMSs need to split up to shorter messages. The SMS service is found effective for timely delivery of information resources to the users in an economic way. Rheingold⁴³ found the

use of mobile phone in marketing library services and resources as economic. Further, it also provides instant response and contacts with users. Modern tools and technology are versatile and SMS-based services are cost effective. These SMS-based services can be used as a tool to cater to the information desire of users.

Five gaps have been identified which are responsible for unsuccessful delivery of service and affect the quality of service^{44, 45}. First gap is between users and perception of the management. The major reason is that managements do not understand what exactly the users need. The other reason of this gap is that most libraries don't conduct user's survey prior to the start of any service for the users. Second gap is between management perception and service quality specifications. The reason is, most of the time specifications prescribed by the management do not adhere to service quality specifications. The third is quality specifications and service delivery. The fourth is between delivery and promises to the users. The fifth and last gap is between perceived service and likely service.

10. MARKETING VIA VIDEO

Library instructional video can be used in promotion and marketing the library resources to save the time of users and library personnel. Martin⁴⁶ shared his experience of using a video in the promotion of the library at California State University, Northridge. Videos of library resources and services were posted on the library website. The videos were shared using YouTube. 2744 people viewed the videos between September 9, 2010 and July 26, 2012. The campaign received positive feedback from faculty members. Using the video the library increased the users' awareness about resources and services, and communicated well. Similar attempt was made at Dartmouth College and results were satisfactory in promotion of library activities and services⁴⁷.

11. MAJOR REASONS OF MARKETING

Okon & Umoh⁴⁸ conducted a study at Nigerian university libraries and described the major reasons of adopting marketing strategies for library services:

- Attracting funding agencies;
- Showcase the potential of libraries and attract users;
- Image enhancement;
- Relevancy in digital age;
- Recognition of library and library professionals in society.

A study by Patil & Pradhan⁴⁹ described the needs of adopting marketing of library resources and services as:

- Promotion of resources
- User awareness
- Improving the library's reputation
- Marketing the services to generate corpus

12. COLLABORATIVE EFFORTS

Several collaborative efforts have been identified which can be used as a model in promoting library resources and services. Duke⁵⁰, *et al.*, highlighted a collaboration among students and library to promote the library's reference service. In this project, library reference service and sources were promoted using the students' ideas and feedbacks.

Besides this, collaboration has been done between libraries and information aggregators. Betz⁵¹, *et al.*, reported a peer-to-peer outreach programme in marketing the citation databases namely, Scopus and Web of Science. They named the programme as student ambassador program (SAm). The programme imparts training, and instructional and marketing material to the participants. Fourie & Ball⁵² revealed that librarian, faculty members and students should be part of the promotional programmes to promote the use of newly subscribed resources and services. Competition programmes can be organised for active participation.

13. LIBRARIANS' ATTITUDE TOWARDS MARKETING

Marketing concept is not well adopted by librarians. Shontz⁵³, *et al.*, surveyed 623 library professionals in public libraries in New Jersey to understand their attitudes on marketing library resources and services. The study found that library administrators and library professionals who have done a course in marketing or attended any workshop on marketing have a high priority to apply the marketing concept in their respective libraries. Grunenwald, Felicetti & Stewart⁵⁴ postulated that several library professionals are unwilling to adopt and implement marketing in the library and information centres. Majority of them believe that marketing of library resources and services is unnecessary and unsuitable for libraries. Hence, the adoption of the concept is subject to and varies from professional to professional. Librarians with good knowledge of marketing prefer to apply the concept to promote the library resources among users. Besides this, they market the library resources to enhance the reputation of library.

13.1 Guerrilla Marketing

This type of marketing explains untraditional marketing campaigns and/or strategies which are very effective to promote products and services. The major highlight of this marketing is that it can be achieved with minimum budget⁵⁵. Ries & Trout⁵⁶ explained the term in a book as 'Marketing Warfare' and depicted marketing activities as a combat to surmount the user's mind. The basic principles of this marketing, Mao-Tse Tung's guerrilla warfare, have seven rules that describe the principles of this technique⁵⁷⁻⁵⁹ as:

- Concentrate your resources
- Sell the ideology along with the product

- Identify established patterns, analyse them and overcome these patterns
- Search for synergies
- Try to outsmart any perception filters established
- Avoid the direct way
- Be flexible and agile

14. CONCLUSIONS

The select review study concludes that librarians have shown a positive attitude towards the adoption of marketing. However, libraries have not adopted marketing as a working culture. Research on library marketing is also slow compared to other emerging areas in the field. The syllabi of Master programmes in Library and Information Science do not have provision to discuss case studies to promote the marketing culture in libraries. Developing countries' libraries are struggling to conduct outreach programmes to promote their resources and services. Therefore, libraries ought to formulate a marketing plan along with yearly budget so that every book can get its reader and every reader can have his or her book. The recent study of Nelson Edewor also revealed the low level use of social media such as, Facebook, blogs, Twitter, e-mail alerts, for marketing. The author expressed that absence of marketing plan, ignorance on the content, i.e., what to market, lack of related facilities and lack of sufficient funds are some of the major barriers in marketing library and information services⁶⁰. Further, open access and search engines have created new challenges and at the same time opened a new frontier to deliver the services to clients. Therefore, promoting and marketing of the resources have become essential for libraries. Accreditation agencies of academic institutions ought to consider the library marketing plan in grading and evaluation. At the same time, funding agencies of institution must formulate guidelines for marketing the library resources and services so that resources and services can be used optimally.

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