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The Lived Experience and Training Needs of Librarians Serving at the Clinical Point-of-Care

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Abstract

This study examines the emotional experiences and perceptions of librarians embedded into clinical care teams and how those perceptions affect their training and preparation needs. Qualitative research methodologies were applied to textual data drawn from focus groups (n=21), interviews (n=2), and an online survey (n=167), supplemented by quantitative survey data. Phenomenological results show librarians experience strongly effective responses to clinical rounding. Important factors include personal confidence; relationships with team members, patients, and families; and the stressful environment. Analysis of librarians' perceived educational needs indicates that training must address specialized subjects including medical knowledge, clinical culture, and institutional politics.

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Keywords

Clinical librarians; embedded librarianship; grounded theory; phenomenology; point of care; professional education; training

INTRODUCTION

Medicine and related health care disciplines are increasingly emphasizing the importance of evidence-based practice to improve the quality of patient care. Simultaneously, patients and their caregivers are increasingly seeking medical information in the process of collaborating with medical teams to make personalized care decisions. The integration of a trained information specialist into clinical rounding teams and bedside patient care activities bridges the gap between the need for tailored, high-quality clinical evidence in direct care environments and the overwhelming amount of data available in today's information-rich world.¹⁻⁴ Effectively preparing librarians to meet the information needs of both health care professionals and patients requires fully understanding how medical librarians experience the clinical environment in practice and expanding training based on that understanding so that it encompasses the intricacies of this unique role.

Most published literature on clinical librarianship focuses on assessing the value of the service to health care professionals, patients, and institutions⁵ or on descriptively reporting one librarian's or one institution's approach.⁶ Only a few studies have used more thorough qualitative data analysis to describe the clinical librarian role. Tan and Maggio used semi-structured interviews to identify a wide range of responsibilities including expert searcher, teacher, content manager, and patient advocate.⁷ While focusing specifically on identifying actively performed roles, their results highlight many complexities of clinical librarianship. Similarly, Harrison and Sergeant documented great variability in the training and preparation of UK clinical librarians.^{7, 8}

Further, Becker and McCrillis reported the use of a validated questionnaire, the Secondary Traumatic Stress (STS) Scale, to survey health sciences librarians undertaking regular contact with patients and found positive evidence of stress, particularly of the 'avoidance' type (deliberate avoidance of the trauma situation and similar stimuli).⁹ Comparison of scores of professionals with similar levels of patient contact, such as social workers, yielded analogous results. Despite the lack of additional qualitative investigation, Becker and McCrillis' study demonstrates that clinical librarians experience significant emotional stress due to involvement in direct patient care.

Similar research has explored the lived experience of other health care professionals, most specifically nursing students.¹⁰⁻¹³ A phenomenological study of nursing students' first clinical experience identified six themes: pervasive anxiety, feeling abandoned, encountering reality shock, envisioning self as incompetent, doubting choices, and uplifting consequences.¹³ Additionally, while medical students report more positive perceptions of their initial clinical experience, their interpretations also include uncertainties and significant emotional responses.¹⁴ A study of the feelings and thoughts of medical students during their

first patient experiences finds that it was an “anxiety-provoking and confusing incident” and that students often feel helpless when dealing with serious illness and death.¹⁵

Given such a rich history of qualitative research on the experiences of patients and health care providers in the clinical setting^{10–19} but the severely limited amount of such research on librarians in that same environment, this study investigated the lived experiences of clinical librarians serving at the point-of-care in order to identify commonly-perceived barriers, stressors, and learning needs.

METHODS

This study utilized elements of several qualitative research techniques including phenomenology, grounded theory, and participatory action research (see the sidebar),^{17,20–22} supplemented by survey-based quantitative data collection (see Figure 1). The initial, self-reflective focus group of five librarians represented widely varying levels of experience in the clinical setting; length of experience ranged from one year to over thirty years and occurred at multiple institutions. Using a grounded theory approach, the transcription and preliminary coding of this focus group resulted in the identification of potential themes related to fears, emotional barriers, ethical issues, physical practicalities, training needs, and developing self-confidence. These formed the basis of an anonymous online survey, including both multiple choice (quantitative) questions and open-ended text (qualitative) questions. Members of the medical library community were invited to participate via online communication and social networking tools, including the Southern Chapter and Medlib-l listservs, Twitter, and online blogs. A total of 167 responses were received.

The survey results were mined reiteratively to develop questions and discussion openers for a series of focus groups with clinical librarians from throughout the country with varying levels of experience and training. Six focus group sessions were held at the Medical Library Association, Southern Chapter, and Mid-Atlantic Chapter annual conferences in 2011; a total of 16 librarians participated. Additionally, two semi-structured individual interviews in the fall/winter of 2011 were conducted with librarians unable to attend those conferences. Combining the original focus group (n=5) with these focus groups (n=16), interviews (n=2), and survey results (n=167), yielded a large amount of data for analysis.

Initial coding was done collaboratively in order to develop a working process, share experience on coding techniques, and agree upon standardized codes. This grounded theory approach allowed the content of the data to direct its own analysis rather than interposing pre-existing categorization, resulting in six main categories of codes (Emotion, Attitude, Process, Value, Versus, and Descriptive) and 42 sub-level groupings (see Table 1) based on observed code types that repeated regularly within the data. Examination of the open text responses to the survey combined with the transcribed interviews and focus groups resulted in a total of 2,719 codes.

The codes were uploaded into a REDCap database. REDCap (Research Electronic Data Capture) is a browser-based, metadata-driven data capture application used primarily for designing clinical and translational research databases.²³ From REDCap, several reports

were run on the data. For this paper, the focus was on the codes related to the emotional, ethical, and conflict issues and training needs experienced by clinical librarians along with the associated quantitative (multiple choice) survey questions (Q17, Q21–Q24, Q37–38, Q43–44). The text-based codes were collaboratively clustered and classified into themes, resulting in 12 positive and 22 negative emotion themes and 17 training themes (see Table 2).

RESULTS

Survey Demographics

Survey items included demographic questions on the backgrounds of the participants (see Table 3). The sample tended towards longer experience as a medical librarian, with 92 reporting over 10 years in the field. Length of time rounding with a medical team ranged more broadly with the greatest number reporting 5–10 years of experience. Interestingly, 32 responses indicated no experience rounding, although that may stem from differing definitions of rounds (walking vs. conference room-based). This is supported by the results of Q13, which show grand rounds (n=59) and case conferences (n=34) are more commonly attended than bedside rounds (n=27). About one-third of the sample had previous clinical experience. The majority worked in either a teaching hospital (n=50) or an academic medical center (n=42). The medical specialties varied widely and librarians often worked within more than one specialty over time. Overall, general internal medicine was the most common (n=59). Teams contained many different types of health care professionals such as attending physicians, residents, students, nurses, pharmacists, social workers, case managers, dietitians, and respiratory therapists. The frequency of rounding also varied.

The Experience of Clinical Librarians: Quantitative Survey Results

Eighty-seven survey respondents reported having a library advocate on their clinical team: the majority of these champions were attending physicians (see Table 4). Forty-nine survey respondents reported feeling psychologically disturbed by some aspect of the rounding experience. These included a disruptive patient (n=12), death of a patient (n=12), odors (n=11), abused patients (n=11), and wounds/injuries (n=9). Thirty-four chose not to enter a patient room with their clinical team, generally due to contact precautions (n=23) and patient privacy concerns (n=11). Fourteen left a patient room before the team to give the patient more privacy (n=6) or due to personal discomfort (n=7). Identified barriers faced on rounds included scheduling problems (n=33), unsupportive team members (n=29), infection/contact precautions (n=17), and issues of access to clinical areas (n=7). Twenty-four reported experiencing an ethically-challenging situation on rounds including patient privacy issues (n=9), patient safety issues (n=8), lack of professionalism (n=8), practice error (n=6), and medication error (n=4).

The Experience of Clinical Librarians: Qualitative Results

Subjects expressed their emotional response to the clinical rounding experience in approximately equal positive and negative descriptors. The most common sentiment was that rounding was an extremely memorable experience (n=39). Positive adjectives used to describe the rounding experience included “exhilarating,” “fantastic,” “very satisfying,”

“humbling,” and “exciting”; negative adjectives included “terrifying,” “scary,” “intimidating,” “upsetting,” “shocking,” and “overwhelming.” Five participants stated that they felt involvement in rounds was a privilege. Examples include:

They took me straight to the NICU and I saw a baby with an arm the size of a cigar, which is a small cigar, I just was like “Whoa”...But with me, it like immediately inspired me – “wow, I get to, I don’t have to like touch these kids, because that would like scare the bejesus out of me, but I get to be a part of this incredible organization..

It was a privilege because in 2003 attending bedside ward rounds in the Coronary Care Unit was ground breaking - no one had done anything like it before in the hospital.

The most strikingly positive responses (n=5) focused on cases where the librarian was able to change medical practice for the better, helping both the patient and the clinical team. One striking example is:

I volunteered to do a search for the cardiology attending on how a particular drug may cause a particular condition. The team couldn’t figure out why this patient was having low blood pressure and were considering implanting a pacemaker (pt was 40 y.o). I did the search and found enough evidence in the literature to convince the attending to take the pt off the drug in question and send him home w/o the pacemaker. The attending said that I “saved the day” on this particular case.

Another strong set of positive responses focused around the relationship between the librarian and the team (n=18). This includes acceptance as a team member, building stronger positive relationships with the providers, and receiving positive feedback. Examples include:

After working with attendings for about a year, one turned to me and said, “You are part of this team. You are valuable and we need you.”

Recently I went on rounds and in being introduced to the new attending, she said, “Oh, you are the one that provided all those great articles about our last case.” It was apparent that she had heard positive things about the material that I sent from the other team members.

However, acceptance was not universal among the subjects. Others reported challenges in their relationships with the team members, including reluctance of the team to accept the librarian, confusion from the team or patient about the librarians’ role, and feeling underutilized and frustrated, as these examples show:

I was queried by one nurse manager who wanted to know why I was there and then if I had ethical clearance from the hospital ethics committee.

I do wish the team would utilize our services more than they do.

I feel like a spot on the wall.

Librarians reported positive relationships with patients or patient families (n=7) including family members’ expressions of gratitude and trust and the librarian’s own satisfaction in

actions taken as a “patient advocate” or “compassionate insider/outsider,” as shown in this example:

The team was discussing an elderly Middle Eastern patient who spoke no English and who had a terminal illness. The team was focusing on sending the woman to a nursing care facility, though the family wanted to keep her at home. When I wondered aloud how many people at the nursing care facility would speak her language, the direction of the team shifted to working with her family for home care. It’s always a delicate balance as the librarian doesn’t do the clinical care, but sometimes the view of a compassionate insider/outsider can be valuable.

While two respondents reported patient confusion about the presence of the librarian on the team, the weight of the response regarding patient and family interaction was positive among members of our study sample.

Factors that the librarians associated with success on rounds included self-confidence and persistence. Multiple librarians (n=15) reported a growth in self-confidence over time as demonstrated by these responses:

I was with OB/GYN and they speak another language and so it was a little scary. I kind of held my ground off because I knew I was good at finding information...it was a little intimidating but I think by especially after the first six months I felt a lot better about it...and now it has become a second nature.

I think part of it was getting to know the people and having my own confidence in asking like: “wait what exactly is that or what do you mean by that.”

Bit overwhelming, initially, but began to feel more comfortable as I gained a lot of positive feedback about my important part in the team.

Interestingly, the librarians also reported an increased confidence in the ability of the clinical professionals (n=9), the medical education process (n=2) and in one case, the health care organization itself, as well as growing respect for the compassion and integrity of their fellow team members (n=4). Respondents said:

I was moved by the discussion of a patient who died post operatively. During the discussion, the responsible surgeon was close to tears. It revealed to me the very human side of doctors who suffer along with their patients and family members when things go wrong.

One of the residents...a goofy guy, big guy, big feet, kind of awkward in his body, really smart and one day we were in the room with two kids and it was a very complicated case, he had been here almost a month and the other side was a little baby and the baby was crying, I watched this big goofy dude go up to this baby and he uses the really quiet voice and sang (singing) oh little baby don’t you cry, I am going to tuck you in, and I was like (big breath) I was just so touched, he was just so comfortable, he tucked him in and the baby stopped crying.

Negative responses such as feeling out of place and uncomfortable in an unfamiliar environment were expressed in words such as “intimidating” (n=10), “anxiety,”

“overwhelmed,” “scary,” “disgusting,” “terrifying,” “upsetting,” “shocking,” and even “angry.” Four subjects reported actual physical reactions, ranging from crying to almost fainting. Examples included:

Hardest- outside room where someone...had tried to commit suicide, felt empathy, trauma, cried all day.

I went on bedside rounds with a medicine team. I do not like seeing sick people ? I was just too warm, we were in the middle of an open ward with closed curtains around the patients. I almost fainted from the heat and anxiety of what was behind the curtains. After I was encouraged to sit down and relax ? I was ok. From then on the attending carried smelling salts for me!

In many cases, the negative reaction stemmed from a particular event, disease, patient type, or situation. Not surprisingly, hearing the delivery of bad news, either related to serious illness or, in one case, a fatal prognosis, also caused strong reactions. Patient death had a powerful impact (n=5), especially the death of a child (n=2), as shown in these statements:

While we were visiting with the patient her son went into cardiac arrest. Team went into action while I ran to the nurses’ station to call for assistance. This was my first experience with a code and the chaos that ensues. It was a complicated and very sad situation... Having never experienced death first hand, the specific episode was very shocking/upsetting to me...

Worst experience was talking to a mom that lost a baby and was blaming herself.

Other notable stressors included seeing abused or neglected patients, patient codes, and dealing with sick children. Librarians characterized some specialties as emotionally challenging including pediatrics, neurology, breast cancer, and psychiatry. Finally, there was a common sense of empathy for the patients’ suffering (n=9). Examples included:

And I did almost 2 weeks on the NICU Blue and I stopped because it was really upsetting for me.

The feeling of utter hopelessness when yet another healthy young person begins treatment for HIV infection...

There was a young adult male who was being tested to see if he possibly had testicular cancer. I remember so well the concern in his parents’ faces as the team discussed the need to wait until other tests came back to know what was really going on. They did a testicular exam while [we] were there. I remember thinking, wow; this must be very uncomfortable for this young man.

The second-most strongly expressed negative responses focused on feeling unqualified, underutilized, or unnecessary. Two subjects reported fear of speaking up; another indicated feeling constrained not to “speak until spoken to.” Two reported feeling “invisible” and others felt the team didn’t understand why they were present (n=11). Here are some examples:

Receiving feedback that “this was not what I wanted” was traumatic.

Nervous...I tried to write down everything they said and they had no clue who I was.

I was dismissed by the attending physician, saying he had no use for me! I did not leave, but reminded him of the pilot [program] and followed him around like a puppy and it took several months to win him over!!

Some librarians were also disturbed by the behavior of team members (n=6) and family members (n=2). Others found rounds to be chaotic, time-consuming, too fast, and very demanding. One librarian reported feeling pressured by the need to deliver accurate information on the spot. Several focused on their fears, ranging from fear of physicians, lack of knowledge, and failure to help (n=7). Lack of self-confidence was also a major factor (n=7). Two reported feeling lost because of lack of understanding of medical terminology, while one expressed gratitude for having been mentored by a more experienced librarian before rounding alone. Examples included:

[I] felt out of place...had a hard time adjusting to their language.

I felt really out of place and was overwhelmed with the fast pace and didn't understand the clinical language.

The language was completely different than anything I had dealt with...so, um, I immediately went back and ordered all of these books on medical terminology because I was lost, I literally was just standing there like "I can't help you, I don't know what you're saying..."

Notably, several librarians also expressed concern over their own health in response to what they were observing (n=6) and expressed determination to improve their own preventative health behavior as this statement shows:

All the people that I saw that were sick, because it was all adult healthcare, a lot of Medicare people. I thought to myself, I'm going to take exceptionally good care of myself. I definitely started taking better care of myself after that.

As these results demonstrate, the affective responses of librarians to their experiences of clinical rounding varied widely. Extremes of emotions ranged from "terrifying" to "exhilarating." Confidence or lack thereof was a constant theme throughout interviews and survey responses. Relationships with team members, patients, and families were also extremely important. The stressful nature of the environment had significant impact. Regardless of the nature of the emotions—positive, negative, or mixed—all librarians experienced strong affective responses to the clinical environment.

Perceived Preparation and Training Needs: Quantitative Survey Results

Two quantitative questions in the survey focused on preparation for rounding and training needs (see Table 5). The results correlate well with the qualitative results described below, indicating limited preparation, with nearly 70% of the respondents indicating that they were self-taught and only 31.2% mentored by another librarian. Participants expressed a desire for training on medical terminology, general medical knowledge, laboratory test values, and

drug names, followed by organizational issues (identity and roles of team members) and hospital/unit specific information.

Perceived Preparation and Training Needs: Qualitative Results

Responses about preparation and training varied greatly. Many reported that their preparation consisted of previous education in sciences (n=12), social sciences (n=2), work experience as medical/hospital librarians (n=6), or related health care experience (n=4). Nine reported no preparation. Two participants reported that without preparation they felt their experience would have been “alphabet soup” and they would have been “worse off.” Examples included:

I was just led to the room where the team was meeting and left on my own to figure it out.

I had former experience working in a clinical pathology lab, so that helped me understand blood tests, etc. better; I was a biology major/chem minor, so I understood physiological aspects of what they were talking about.

I took the hospital’s HIPAA training and the training about use of safety masks. I had previously had a class in medical terminology and on the roles of team members in a hospital setting as part of my academic preparation.

Self-directed (n=34) and “on-the-job” learning (n=20) dominated as learning methods. Self-directed study topics included specialty-specific background reading, medical terminology, abbreviations, and lab values, research on clinical conditions arising during rounding, clinical librarianship practice, EBM principles, understanding team roles, understanding point-of-care research. Librarians also spent additional time reading medical journals. Another theme was learning from mistakes, described by one librarian as learning through “trial and error.”

I [took] a notebook and jotted down words I did not understand and looked them up later as well as any articles and other resources they referenced.

I read a lot! I attempt to apply myself to each case. This is an area of individualized study.

I scan New England Journal of Medicine, Annals of Internal Medicine, JAMA, BMJ, Lancet, JACC, Circulation, and other weekly publications...I also read and watch as much CME as possible to stay current.

I quickly realized that I didn’t have the information about the vital signs...there are a lot of acronyms that get thrown around and trying to figure out what their shorthand verbalizations are and remembering what they mean is a real problem...

Many (n=22) reported mentoring by a more experienced librarian in the clinical setting, with particular emphasis on the value of shadowing during the learning process. Eight librarians reported mentoring by a health care professional. Additionally, 28 reported learning through observation on rounds, whether in the presence or absence of a mentoring professional. Sample statements included:

I'd really like to see a mentoring program because I think that that's almost the only way you can really get a taste and a feel of how that works.

A librarian colleague had been attending prior to my taking over the CL position. I was grateful for the support she offered, as she prepared me in advance for the nature of the Rounds.

I shadowed another librarian whilst he walked me through the type of notes I needed to take during the Morning Report session.

So I began to use them as a teaching tool and identifying one or two people who would be willing to stop and answer the question or who would stay three minutes after the round was over.

Formal professional development courses were also a consistent theme emerging from the data. Seventeen librarians reported attending MLA-supported courses such as "Clinical Skills for Medical Librarians,"²⁴ various "mini-med school"-type programs, the University of North Carolina EBM course,²⁵ Supporting Clinical Care Institute (Dartmouth, University of Calgary and University of Colorado),²⁶ McMaster University Evidence Based Clinical Practice,²⁷ and the Information Mastery program originated at the University of Virginia but now held at Tufts University.²⁸

The variable nature of learning was also emphasized. Librarians recommended that training be individualized both in terms of the learner's needs and the specific institution, as the format and style of rounds varies across institutions and services. One participant commented that necessary training cannot be taught in one session. Others felt that multiple teaching and learning methods should be incorporated as needed. Yet another said that learning needs rather than technology should drive the process of learning. Examples included:

I would like to see an approach modeled after the PharmD approach that would include residency and placement on a floor. I think a team of two librarians, one experienced to serve as mentor, should round. And most definitely prep classes in terminology, basic clinical skills, identifying clinical questions, and appraising the literature should be taken first.

Concentrate on...best use of rounds time: what to search with the team and when to work on the question in the office, best techniques for rounding, and advertising services to hospital teams & clinics.

I think it needs to be much more than a one-day CE course.

Direct mentoring is key. There is not a one size fits all.

Librarians had strong views regarding the topical knowledge needed for librarian success in clinical settings. Nineteen participants indicated a need for training in general medical terminology and nine for specialty-specific vocabulary and diseases. Other desired content included evidence-based medicine (n=16), anatomy and physiology (n=9), laboratory values (n=4), and pharmacology/drug information (n=2).

Understanding of medical terminology is vital. Basic understanding of anatomy and physiology would also be quite helpful.

They run off the vital signs, they put up the BMP, they didn't tell you it was a BMP...they would just put a diagram up on the board and fill in the numbers, and they'd write another X and fill in the numbers. It took me a long time to figure out that the ASA was the aspirin level.

There's a lot of medical slang and its different wherever you go, it's different from different parts of the hospital. And ABA means "arrived by ambulance." And they'll say that, they'll just say "ABA" and you're standing there right, OK, what does that mean?

Eleven librarians expressed a desire for training on roles and responsibilities of health care professionals and teams and ten for training on hospital organization as well as health care systems and culture. Seven expressed a need for training on graduate medical education structure and rounds, including highly practical 'tips' such as the importance of pockets and wearing comfortable shoes while rounding.

I was first very confused by the hierarchy of who was who and found out later that there was an attending doctor, there are doctors...nurses that are there to listen in to what they have to say about their patients, there are residents... I found myself entirely confused and wanting to know who's that, who's that, who's that?

One thing that really helped me is that I took a CE class from MLA called Mini-Med School...they essentially walked you through what the residents learn at what stage. And that was very helpful to me... One of the things was, what's the difference in the length of the white coat and is that important? Absolutely it is. And if it has a belt it means something else. And that tells you who's who in the hierarchy by the white coat they wore.

Perhaps some kind of "clinical medicine basics for librarians" that included lab values and some biology, as well as an explanation of the more socio-political aspects such as how the residents' time is structured over the years that they're in the hospital.

Librarianship skills were also identified as a training need. Sixteen participants mentioned the need for training in search skills, resources, and reporting results. Twelve indicated mentoring, shadowing, or an internship are important, and fourteen felt training on marketing or how to start a rounding/clinical librarian program would be beneficial. Other suggestions ranged from more specific job descriptions to venues for medical librarianship education, sharing, and discussion.

DISCUSSION

While this study is the first to use a qualitative approach to document the phenomenological professional experiences of clinical librarians, it can be discussed in the context of similar research on clinical librarianship and other health care professionals. As discussed above, Becker and McCrillis' Secondary Traumatic Stress study provides results analogous to this

study, demonstrating the existence of traumatic stress responses in librarians with direct patient contact,⁸ and Tan and Maggio's 2013 study⁶ on defining clinical librarian roles identified some issues in common with these results, such as the stress of pinpointed searches in minimal time, the role of "patient advocate" posing questions or getting clarification for patients and/or family members, and the importance of clinician "champions" to successful team integration. These findings correlate with emerging theories on the importance of preparing clinical librarians to cope effectively with the environmental and emotional stresses of working in the clinical setting.

Future directions for this research include further examination of the large quantity of qualitative data obtained in this study – in particular, the effect of background experience (personal and professional) on librarians' attitudes to clinical integration, exploring the impact of ethical dilemmas and conflict, and more detailed examination of how librarians' learning preferences adjust from preparation for rounding to during the rounding process itself. Collaboration with others may allow the development of new studies and the integration of differing approaches. Study limitations to be addressed include pre-testing of the survey instrument, better estimation of study response rate, and participant review of their transcribed data for improved accuracy. Study response rate determination, however, is necessarily complicated by the use of open social media to invite participation.

CONCLUSION

Overall, results of this study demonstrate a rich phenomenological experience among clinical librarians, with strong emotional reactions illustrating both the joys and the challenges of integration into bedside medical care. The data indicates that the emotional experience of an individual librarian significantly impacts on that librarian's ability to function effectively in the clinical setting, that training for clinical librarians must address these issues, and that such training must also include specialized subjects and skills. These include medical terminology, but also the clinical culture, politics, and environment. Confidence and attitude can be fostered by effective training and preparation, positive mentoring, and clinical champions (advocates) who provide support during the adjustment period. Such preparation and continued on-the-job support can provide valuable assistance in coping successfully with an environment that is often highly stressful and involves life-and-death situations.

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Figure 1.

A flow-chart of participants and research techniques throughout the study

TABLE 1

Codes and Subcodes Identified by Analysis of the Textual Data

Codes (Level 1)	
1 =	Attribute Code (Details of place, time, etc.)
2 =	Descriptive Code (General Description)
3 =	Emotion Code (Emotions)
4 =	Process Code (Action)
5 =	Value Code (Values, Ideals, Ethics)
6 =	Versus Code (Conflicts)
Subcodes (Level 2)	
1.	Desired/recommended training
2.	Preparation training (done before starting)
3.	Past Clinical Experience
4.	Institution-required training
5.	Direct learning on the job
6.	External training received while on the job
7.	Method of learning
8.	Introduction on rounds/getting started
9.	Success factors
10.	Librarian demeanor/attitude/appearance on rounds
11.	Rounding experience (memorable/highlight/positive)
12.	First rounding experience
13.	Challenges/difficulties faced on rounds/negative rounding experiences
14.	Teaching/instruction on rounds (by librarian)
15.	Type of team member
16.	Type of rounds/case presentation type
17.	Location of rounds/environment/setting
18.	Specialty/discipline/topic
19.	Disease observed
20.	Procedure done (to patient)
21.	Patient type
22.	Question type
23.	Question source/questioner/requestor
24.	Delivery method
25.	Deliverable type
26.	Results delivered to/reported to
27.	Date/year
28.	Time spent
29.	Frequency of rounds
30.	Geographical location
31.	Institution/program history/number of programs served
32.	Research/trends in clinical librarianship

33. Champion
34. Champion attributes
35. Resources used – technology
36. Resources used – information sources
37. Librarian uses EMR/EHR/Medical Records
38. EMR/EHR/Medical Records issues/trends
39. Ethical dilemma/issue
40. Promoting/marketing rounding service
41. Other
42. Assessing success

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TABLE 2

Identified Themes Based on Thematic Analysis of the Codes Identified within the Textual Data

Emotional Experience Themes: Positive	Emotional Experience Themes: Negative	Training & Preparation Themes
<ul style="list-style-type: none"> • Feels like an integrated team member; valued & accepted by team • Excited to contribute • Feels s/he made a valuable difference • Ability to act as a patient advocate • Librarian finds rounding a positive memorable experience • Confidence/trust in health care providers • Positive team feedback • Positive relationship-building with providers • Positive feedback from family • Self-confidence initially and improving over time • Persistence in face of negative behavior • Confidence in medical education system 	<ul style="list-style-type: none"> • Emotional stress & anxiety • Negative physical reaction/extreme emotional distress (fainting) • Fear of <ul style="list-style-type: none"> – speaking up – physicians – failure – seeing patients • Librarian empathy for <ul style="list-style-type: none"> – patient family concerns – patient concerns • Impact of <ul style="list-style-type: none"> – death, esp. child death – fatal prognosis – serious disease – code/emergency – seeing patient illiteracy – seeing a patient who has been abused/neglected • Concern about <ul style="list-style-type: none"> – miscommunication between family and physician – provider lack of compassion • Lack of confidence in <ul style="list-style-type: none"> – Self – Team's interest in EBM • Patient confusion about librarian's role • Pressure to deliver info on the spot • Feeling out of place in an unfamiliar environment • Feeling underutilized 	<ul style="list-style-type: none"> • Self-directed study • Figuring things out over time • Mentoring by another librarian • Mentoring by a healthcare professional • Observational learning (shadowing) • Learning from mistakes • Variable nature of learning • Importance of prior experience • Learning on the job • Professional development courses • Need medical knowledge • Need organizational & cultural knowledge • Ethics • Other skills (interpersonal) • Librarianship skills • Rounding process needs • Value of preparation

TABLE 3

Demographics of Survey Participants

Q2: How long have you been a medical librarian? (n=157)		
One year or less	6.4%	10
More than 1 year, but less than 2 years	4.5%	7
More than 2 years, but less than 5 years	16.6%	26
More than 5 years, but less than 10 years	14.0%	22
More than 10 years	58.6%	92
Q3: How long have you been rounding (n=149)		
I haven't done any rounding	21.5%	32
One year or less	10.1%	15
More than 1 year, but less than 2 years	10.1%	15
More than 2 years, but less than 5 years	19.5%	29
More than 5 years, but less than 10 years	22.8%	34
More than 10 years	16.1%	24
Q4: Do you have clinical experience prior to becoming a medical librarian? (n=117)		
Yes	30.8%	36
No	69.2%	81
Q6: In what type of setting do you work? (n=115)		
A non-teaching hospital	12.2%	14
A teaching hospital	43.5%	50
An academic medical center	36.5%	42
Other location	7.8%	9
Q8: Which medical specialties have you worked with? (n=92)		
Cardiology (CICU)	30.4%	28
Emergency Medicine	29.3%	27
Endocrinology (Diabetes, Metabolism)	17.4%	16
Family Medicine (Outpatient Clinics, Community Healthcare)	37.0%	34
Gastroenterology	17.4%	16
General Internal Medicine	64.1%	59
Hematology/Oncology	21.7%	20
Infectious Disease	22.8%	21
Nephrology	7.6%	7
Neurology	18.5%	17
Obstetrics/Gynecology	25.0%	23
Oncology/Cancer (Tumor Boards, Cancer Clinics, Radiation Oncology)	27.2%	25
Ophthalmology	10.9%	10
Orthopedics and Rehabilitation	13.0%	12
Psychiatry	20.7%	19

Pulmonary, Critical Care (MICU)	23.9%	22
Radiology	13.0%	12
Rheumatology/Immunology	12.0%	11
Other clinical department	37.0%	34
Q13: How would you classify your rounds? (n=109)		
Patient room (clinical team) rounds	29.3%	27
Morning report	17.4%	16
Case conferences (including Morbidity & Mortality, Tumor Boards)	37.0%	34
Turnover/Shift Change Rounds	17.4%	16
Grand Rounds	64.1%	59
Other Round Type	21.7%	20
Q14: How often do you attend rounds? (n=109)		
Daily	7.6%	7
Once per week	18.5%	17
Twice per week	25.0%	23
Biweekly	27.2%	25
Monthly	10.9%	10
Other rounding schedule	13.0%	12
Q15: What type of health care professions does your clinical team include? (n=108)		
Attending(s)	91.7%	99
Resident(s)	86.1%	93
Student(s)	72.2%	78
Nurse(s)	53.7%	58
Pharmacist(s)	58.3%	63
Social worker(s)	29.6%	32
Case manager/patient advocate(s)	22.2%	24
Dietician/nutrition therapist(s)	23.1%	25
Respiratory therapist(s)	14.8%	16
Other team member	23.1%	25

TABLE 4**Survey Results: Librarian Experience**

Q17: Do any of the following disturb you (make rounding difficult/uncomfortable for you)? (n=49)		
Odors	22.4%	11
Seeing wounds/rashes/injuries	18.4%	9
Blood/bodily fluids	8.2%	4
Death of a patient	24.5%	12
Code/Crisis Situation	14.3%	7
Disruptive/violent/delirious patient	24.5%	12
Prisoners as patients (police presence)	8.2%	4
Family interactions (upset family members, bad news delivery)	16.3%	8
Abused patients (child abuse, elderly abuse)	22.4%	11
Particular disease types (cancer, trauma, burns)	10.2%	5
Particular patient types (children, disabled, elderly)	10.2%	5
Other fears	44.9%	22
Q18: Have you ever chosen to not enter a patient room with your clinical team? (n=88)		
Yes	38.6%	34
No	61.4%	54
Q19: If you did not enter a patient's room, what were your reasons? (n=38)		
Contact precautions (infectious disease concerns)	60.5%	23
Lack of protective equipment (mask, gloves, etc.)	7.9%	3
Discomfort with patient condition (wounds, odors, etc)	5.3%	2
Patient/family privacy concerns	28.9%	11
Attending/team leader's request	10.5%	4
Crisis situation	7.9%	3
Other reason for non-entrance	52.6%	20
Q20: Have you ever felt the need to leave a patient room before your clinical team finishes? (n=89)		
Yes	15.7%	14
No	84.3%	75
Q21: If you felt the need to leave a patient room, for what reason(s)? (n=13)		
Felt faint or dizzy	15.4%	2
Felt nauseous	15.4%	2
Felt uncomfortable	23.1%	3
To give patient/family more privacy	46.2%	6
To get out of the way of a medical crisis (code, patient requires immediate medical treatment)	7.7%	1
To get out of the way of a psychiatric crisis (patient becomes delirious or violent)	0.0%	0

Patient death	0.0%	0
Other reason for leaving	30.8%	4
Q23: What role does your advocate hold? (n=87)		
Attending	58.6%	51
Resident	2.3%	2
Fellow	0.0%	0
Nurse	3.4%	3
Other advocate role	35.6%	31
Q24: What barriers have you faced on rounds? (n=93)		
Unsupportive team members	31.2%	29
Problems with team scheduling (roving teams)	35.5%	33
Security/access issues (ability to access certain hospital wards/areas)	7.5%	7
Infection/contact precautions	18.3%	17
None	25.8%	24
Other barrier	25.8%	24
Q43: Have you experienced an ethically-difficult situation while you were on clinical rounds? (n=92)		
Yes	26.1%	24
No	73.9%	68
Q44: What did that ethically-difficult situation deal with? (n=24)		
Medication error	16.7%	4
Practice error	25.0%	6
Lack of professionalism	33.3%	8
Patient privacy issues	37.5%	9
Patient safety issues	25.0%	6
Other ethical issue	33.3%	8

TABLE 5

Survey Results: Preparation for Rounds and Training Needs

Q37: How did you prepare to begin rounding? (n=93)		
Took (or audited) academic classes	7.5%	7
Took CE (professional continuing education)	15.1%	14
Self-taught	68.8%	64
Was mentored by a librarian	31.2%	29
Was mentored by a health care professional	12.9%	12
Internship/fellowship	4.3%	4
Other preparation	23.7%	22
Q38: After you rounded the first few times, did you seek additional knowledge in any of the following areas? (n=75)		
Medical terminology	68.0%	51
Drug names/nicknames	54.7%	41
Laboratory test values	62.7%	47
Medical imaging techniques	17.3%	13
Other medical techniques	16.0%	12
General medical knowledge	62.7%	47
Unit/Department-specialized subject knowledge	40.0%	30
Identity of team members	53.3%	40
Roles of team members	42.7%	32
Hospital/clinic procedures/protocols	34.7%	26
Safety procedures/training	13.3%	10
Other knowledge acquisition	26.6%	20