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RESEARCH ARTICLE

UNDERSTANDING THE INTERPROFESSIONAL RELATIONSHIPS IN THE PROVISION OF COMPREHENSIVE MEDICATION MANAGEMENT SERVICES

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ABSTRACT

The aim of this research was to understand the interprofessional relationships and challenges in the provision of a Comprehensive Medication Management Service, a clinical service grounded in the theoretical framework of pharmaceutical care practice, by pharmacists practitioners being integrated into the health team through shared practice. The study field was an outpatient clinic for diabetes patients. This study was carried out using the ethnography methodology. Data collection included individual semi-structured interviews with fourteen team members and participant observation with field notes for 17 months. The interviews were audio recorded and transcribed. These transcriptions and the field notes were analyzed for recurring and emergent themes. "Understanding interprofessional relationships" is the main category of research and covers the stages of building interprofessional relationships and all the challenges inherent to this process. The following subtheme emerged from this category: "Roles and professional boundaries". This ethnographic description can contribute to professional training and promote reflection by health professionals about the challenges encountered in teamwork.

INTRODUCTION

Comprehensive Medication Management services (CMM) is a clinical service grounded in the theoretical framework of pharmaceutical care practice (Cipolle, Strand and Morley, 1998; 2012).The service encompasses an assessment of all medications taken by the patient to identify, resolve and prevent drug-related problems (Ramalho-de-Oliveira, 2011). Patients receiving CMM services in different practice settings have shown improvement in outcomes including better attainment of the desired goals of therapy (Brummel, Soliman, Carlson and Ramalho-de-Oliveira, 2013; Foppa, Chemello, Vargas-Peláez and Farias, 2016; Isetts et al., 2008; Ramalho-de-Oliveira, Brummel and Miller, 2010). CMM services, when integrated into the health team through collaborative practice, has shown better clinical, humanistic and economic outcomes (Kozminski *et al.*, 2011; Smith, Bates, Bodenheimer and Cleary, 2010). This integration allows the holistic care through teamwork and decision shared. In the team, recommendations and responsibilities are complementary and interventions and prescriptions are made by different practitioners for each patient. A number of core competencies for effective team working have been reported in the literature, such as shared responsibility for attaining the objective, clear roles and responsibilities, interdependency among members and integration of working practices (Mosser & Begun, 2015; Reeves, Lewin, Espin and Zwarenstein, 2011). The outlined competencies serve as tools to train health professionals for more successful interprofessional practice and to promote reflection by practitioners on the challenges of teamwork (Suter *et al.,* 2009). The knowledge about the pharmacist-physician interprofessional relationship is especially important in CMM services, because they represent an opportunity for physicians and pharmacists to work collaboratively. However, in order to consolidate the collaborative practice, one must understand the interprofessional relationship and challenges during the provision of shared care. The way the services interact and are perceived by team members influences working practice. In addition, the understanding of these perceptions can help train future professionals that are better prepared for shared care. Therefore, the objective of the present study was to understand the interprofessional relationships and challenges in the provision of a CMM services by pharmacists in the health team, through the sharing of care among different professionals.

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MATERIALS AND METHODS

Ethnography was performed to address the study question. Ethnographies are carried out to describe what takes place in the field, how people perceive themselves and others, in an effort to understand routine daily interactions (Hammersley & Atkinson, 1995). Ethnography can be used to promote transformation by promoting freedom of the research participants. This methodology is also used as a means of mapping problems of power relations and political and social

conflicts inherent to professional relationships, such as in the healthcare area (Beck, 2013). This ethnographic study of the interprofessional relationships was conducted in an interprofessional diabetes outpatient clinic, and it involved practitioners of medicine, nutrition and pharmacy of a public university teaching hospital located in a large metropolis in Brazil was conducted.

Study setting

The outpatient clinic is a teaching service practice providing ambulatory care to patients with Diabetes Mellitus Type 1 and 2. The CMM services were integrated into the outpatient clinic in October 2013. Up until 2013, the clinic had only physicians, including residents and medical students, and nutritionists. Since 2013, the team comprised of physicians, pharmacists, residents of medicine, and academics of medicine and pharmacy. The services provided by the clinic include CMM consultations and consultations with physicians. Besides the consultations, weekly meetings are held for health education activities.

Data collection

Data collection took place between August 2014 and January 2016. Participant observation was employed throughout the study period with the use of field journal notes. This observation included notes about the perception of the researcher during the whole process of CMM services implementation, since the researcher was also involved in this process. It also included the appointments and the daily practice of the outpatient clinic, such as case discussions and moments of interaction between the different professionals. Individual semi-structured interviews were also conducted with 14 participants from the multi-professional team, based on the interview guide developed by the researcher (Table 1). All of the participants were interviewed once. All interviews were audio-recorded with the consent of interviewees. The recordings were transcribed *verbatim.*

Table 1. Sample of interviewees divided by professional category

Professional Category	Number of interviewees
Medical Preceptor	2
Medical Resident	3
Medical Student	4
Nutrition Preceptor	1
Nutritionist	2
Pharmacist	1
Pharmacy Student	1

The interview guide was modified whenever was needed, based on the interest of the researcher to understand some ideas and broaden the debate. So, during the course of the study, the questions were personalized to focus on the most critical points for understanding the interprofessional relationships.

Data analysis

The data collected from the interviews and field journals were inserted and analyzed using the NVivo11 software application. The data was condensed, grouped and categorized. The categories analyzed produced major themes, subsequently tied in with the literature and illustrated by citations from the data collected. The analysis was carried out by the first author.

Ethics considerations

The study was approved by the Ethics Committee of the Federal University of Minas Gerais (UFMG) in May 2014 (process CAAE-25780314.4.0000.5149) and by the Department of Internal Medicine of the Clinicas Hospital of the UFMG. All of the study participants signed the Informed Consent Form.

RESULTS

Our findings represent the views and experiences of team members of different professions and backgrounds, and who were at different team work phases. From the results, we sought to show the core competencies identified and challenges faced by the team in building the collaborative interprofessional relationship. The findings are presented under the main category: "Understanding interprofessional relationships" which encompasses the stages of construction and all challenges arising during the process. The theme "Roles and professional boundaries" emerged from this main category.

Understanding interprofessional relationships

To understand how the interprofessional relationship is built, it is necessary to understand the essential elements highlighted by the team in this construction process. In this study, accessibility, communication, trust, harmony, respect and time of experience emerged as core competencies for shared practice. The first aspect above, accessibility, closely reflects the reality of the pharmacy profession, which often operates in an isolated manner-often secluded within a pharmacy- and faces the inherent challenges of accessing other practitioners.As illustrated in a quote by one of the physicians interviewed, understanding the importance of a professional's role is linked to his presence in the practice setting: "I think there is a flow.Sometimes when it´s busy, perhaps we don´t always notice it, but the presence of the team member there reminds us of this, (…). Just having you [pharmacist] there reminds of the importance of your role."Interviewee 01

With the high workload and responsibilities of health professionals today, it stands to reason that the presence of different practitioners in the same physical space favors interprofessional cooperation. This close proximity also favors informal interaction, whereby the collaboration of a work colleague can be tested, albeit by asking for technical input on a case or solving a problem in the other practitioner's area of expertise. "Since the beginning, there was an opening, an invitation to dialogue, to share the decision. We discussed the cases and our observations were always requested. This incentive made us think and contribute more." Field note

The second skill found was communication. During the period working together, we noticed the importance of this competence, evidenced by the impact that lack of communication can have on care: "The patient said one thing, we had written something else and if we asked another professional they would say something else, it was more communication problems, breakdowns in communication." Interviewee 04 The patient is often seen by a number of different professionals and gives each a snippet of their problem or complaint. Lack of communication renders the

puzzle of care incomplete, a situation that can compromise professional performance.

When these breakdowns in communication were identified, in order to make strides in collaborative care, some solutions were put forward:

"[...] patience to listen to everyone in the team, and to understand what each member wants to put across. Communication needs to be as fast as possible […] immediate communication, you need to have a discussion of the case, not just blurting out information or saying what you are or are not doing, you have to discuss it in order to assess which are the best options."Interviewee 05

Other skills cited by the participants were trust, harmony and respect. For many, working together was an exercise in humility. In the shared practice, you cannot have competition between professionals, where one professional is held as more important or skilled than another.There should be cooperation toward a common goal:

"I think each professional has their limits. I learned different things and I think that´s the way it should be, there´s no harm in this, I believe they are complementary things. People have to try to show their point of view, without demoralizing other professionals, always making an effort to improve the patient´s situation." Interviewee 06

"When CMM services started at the outpatient clinic, everyone there already knew each other, they had been working together for a long time and this was a little bit scary for the CMM team. However, as we worked together, it got easier. Something that helped us through the way was the trust which the medical preceptor and team leader of the outpatient clinic placed the CMM services and the team." Field note.

Respect is paramount from the first contact.We noticed that this is especially relevant when a new service like CMM services is being incorporated in an institution. This first encounter must be done with tolerance, when the professional is well prepared and ready to perform their role, while respecting the experience and opinion of the professional approached: "It´s the way of presenting oneself, clearly, the way of conversing.Starting out by saying this is not right, or I didn´t like it, is going to put anyone off.Whereas, sitting down, like they [CMM pharmacists] did with me, showing what they had spotted, what could be changed, improved, I think that anyone with common sense will accept." Interviewee 01

Lastly, we highlight the need for a period of time to gain experience with another professional, or a new professional's role. This period of adaptation, which is not pre-determined, depends on the openness of the professionals involved.It is a period of building and consolidating trust, seeking to achieve sharing of responsibilities.

"As most of the team has been working together for a while, it is more collaborative, discussing more openly, involving everyone in decisions." Interviewee 08

In this study, the importance of experience was emphasized by the fact the CMM services were relatively unknown to society and the professional community. Initiative and development of connections were strategies used by the professional pharmacists to overcome the challenge of inexperience:

"Indeed, it´s not enough to just present the service, perhaps it´s something well beyond the comprehension of medical practitioners, that they need to directly experience in order to appreciate its application and contribution.The residents, who displayed greater openness with the pharmacy service, were indeed the two who had been in the diabetes group the longest, maybe because they had more time to observe the interventions of the pharmacists." Interviewee 02

"Initially, there is strangeness with the CMM service. Over time, the service is more requested and valued. As long as the service is not well known, this strangeness will happen. But I do not see this as a problem, I see as an opportunity to spread the word, to show the role through the service itself and not just in theory." Field note.

The experience of being directly involved with the CMM services allows greater understanding of the potential contribution of this practitioner. It also gives an overview of the service and the skills needed to provide it. The narrative of Interviewee 05 reflects the perspective of an academic of medicine regarding what type of professional is qualified to provide CMM.

"I also think that it [CMM] could be done by the physicians, may be even done by the nurses, but we don´t have any nurses on the team and the physicians are often more concerned about the clinical conditions of the patients and to overlook details on the use of medications, on how the medications interfere in the patient´s life.Because I know that we [physicians] should be concerned about this, I know that we hold some pharmacological knowledge, but your [pharmacists] knowledge is far greater.From the moment we had your support, actually, we stopped doing it altogether, because there was someone else meeting that need."Interviewee 05

The point raised in the excerpt above promotes reflection on which professional should take on this task. Drug-related problems are real and prevalent, and a professional has to be put in charge of preventing and resolving them. A paternalistic response, of centralizing responsibilities to a single professional is counterproductive for care, it leads to work overload of a single professional category, and prevents the development of shared care.

Roles and professional boundaries

Our analysis revealed that, unanimously, all interviewees regarded understanding on roles and responsibilities in the team as fundamental.

"As soon as I know what the person does, I can begin to understand, to realize that he caters to a different demand than me." Interviewee 09

"In shared practice, it´s important for practitioners to understand the contribution of each professional within this practice.When you don't have a proper understanding of the possible contribution, it becomes hard for you to understand what is the role of each within this practice.So, if the pharmacy service was

better understood by the medical service, they would definitely know the right situations to call on the pharmacists." Interviewee 02

Understanding the role of each professional is important to prevent conflicts that can occur when professionals are not aligned.This alignment includes knowing the function of each professional, avoiding the belief that the other is taking on a role outside their scope of practice or performing activities that are limited to another professional. Asked about the different roles in the team, the responses of interviewees proved highly heterogeneous, especially with regard to the most recent service in the clinic, the CMM services.

"With a multidisciplinary team, we end up dividing the patient into areas, right? For instance, medicine deals with the prescription, exam, diagnosis part; the pharmacy works with medications, adherence of patient to treatments; nutrition focuses on diet, physical activity… We are able to compartmentalize, but work on the patient as a whole." Interviewee 01

"Medicine […] is more concerned with the diagnosis, obviously with treatment too, but then to do the things the way you [pharmacists] do, would require much longer than the consultation time, which already has to include everything else." Interviewee 10

"The role of the physician is to guide and assist the patient in controlling their diseases, in the case of here, diabetes, and try to place the treatment in their context, in a way he can understand more easily. The role of the pharmacy I believe is…Well, patients have many doubts, regarding storage, mode of administration, where to apply, how to apply, so I think that it´s in the part of guiding the handling of the medications." Interviewee 11

The above excerpts illustrate the diversity of knowledge of the team and help us to understand how the opinion on the role of others evolves as they continue to work collectively. In the quotes above, Interviewee 11 is the most recent participant in the team, with only one day on the job at the time of the interview.This helps explain the limited understanding of the role of the pharmacist in the clinic.The other interviewees, at the time of the interview, had more than one year of experience working together with the pharmacy team. We also noted that some interviewees, as illustrated in the narrative of Interviewee 10, believe that physicians could provide the CMM services if these professionals had more time available. CMM services, a service provided by the pharmacist at the clinic, include a review of the entire patient's pharmacotherapy in an effort to detect, resolve and prevent drug-related problems.This definition was not given by any of the interviewees outside the team of pharmacists.However, understanding of the concept can be grasped in the description of one case given by interviewed:

Physician: "In the clinic, I've seen cases there of patients not knowing what they were taking, with the blood pressure out of control and doubtfeeling very confused about their medication intake. At each consultation the physician realizes the lack of control and prescribes yet another medication. And this goes on until reaching the conclusion that the patient is not picking up that particular medication at the dispensary, or that they are not buying the other one.He realizes that the polypharmacy the physician is prescribing, is not seeing the results because he is not using it, therefore the blood pressure is not being controlled. And then the role of the pharmacist is interesting because he finds this problem, and manages to readjust what is being used (…). There are thyroid diseases, for which the use of Puran T4 has to be during fasting. There are drug-drug interactions, and you also help clarify the right time to take it, explaining the need for these precautions. I think that´s it." Interviewee 01

Considering all these perceptions about the work of the pharmacy team and the integrated and interdependent interprofessional role to solve patients' problems, an important concept that must be embraced is that of professional boundaries. Boundary conveys the notion of limits. Professional boundaries are discussed here as the role limits of each professional. "Since the group has the goal of multidisciplinary working, while each of the professions has their specificity, as people start working together, and we starting performing activities, each beginning to work a little at the interface of the other." Interviewee 12

This work at the interface of others was not considered entirely satisfactory by all interviewees.We noted that the closer this comes to the area of practice, the greater the likelihood of disparity and consequently, the better defined the relationship needs to be. "We [nutrition] did not deal with medications much, we dealt more with the medical prescriptions, so we played our role and everything. Then, there was no chance of clashing with medicine in the medication part. Whereas you [pharmacists] don´t, you see? So, it was impossible not to clash.Because like them you were involved in the same area and, of course, this would sometimes result in differences."Interviewee 13

The solution for these critical points came from the team itself, discussing the importance of interprofessional contact and alignment with the common goal: the patient.

"The major problem when you´re not taught team working, you don´t have this contact, you end up meeting at the boundary between my limit and my colleague´s limit, which we can negotiate together. Sit down and think about what´s best for the patient, for us."Interviewee 01

"The fact that we regard the patient as a whole means we need other areas, because we realize we´re not able to meet all their [patients] needs."Interviewee 09

The excerpts above show the importance of this contact for the team members, which places the patient as central to care, with all their needs and particularities.The experiences of the professionals suggest they recognize that patients' needs will always differ and that understanding the person as a whole, recognizing the biopsychosocial entity, calls for the use of multiple tools in practice:

"It´s teaching the patient self-care, them being responsible for their disease and providing guidance, technical or psychological support, whatever is at our disposal, but helping them to improve within their limits." Interviewee 14

Building the Physician-Pharmacist interprofessional relationship

When seeking to understand the building of interprofessional relationships, it is helpful to imagine the pathway that illustrates the stages and challenges involved in this process (D'Amour, Ferrada-Videla, Rodriguez and Beaulieu, 2005). The start of the relationship is generally initiated by the newest professional. In the outpatient clinic with the introduction of CMM, it was clear that this introductory phase should be initiated by the pharmacist, as outlined in the excerpt below by the pharmacist interviewed upon being asked about how case discussions came about. "I see it was on my part. [To start building the relationship] we become more confident of in the practice, more confident about the information we provide."Interviewee 09

The entry of pharmacists' practitioners to the clinic occurred at the first stage. In this stage, the contact was in person and the interaction face-to-face from the outset. After the initial efforts, the working relationship moved onto a second stage:
"The case discussions we had, the discussion we had about articles, all this led to us getting to know the other´s practice better, their role, the way of regarding the other, because it´s not just the practice, the specific knowledge, but what the principles are."Interviewee 12

With time and deeper interaction, we reached a closer relationship. In this stage, trust becomes more solidified, and the physician began to call on the pharmacist:
"Later on I got to like it, because I would always have that concern in the office of checking whether it was all correct, but having someone as a backup, who'll check it out for you, it is good. Sharing this responsibility a little bit and trying to really do the best thing. Medicine always ends up attending first and pharmacy later, giving rise to suggestions. I think this leads to a debate about which is better or worse, and what´s going to be kept or not. [...] So, at least for me, the interpersonal relationship is really good and we manage to have good dialogue."Interviewee 01

And finally, we got to the higher stage in commitment to the collaborative working relationship. At this point, the important thing is to maintain full communication and respect among the different professionals involved.
"When I say share, it´s more in the sense of adding, one augments the work of the other, because […] the team makes the difference because it is working together, sharing similar information."Interviewee 12

Thus, all stages took place and the building of professional interaction was possible via this stage–by-stage development. Solidifying the relationship remains a daily challenge of working as part of a team to ensure respectful relationships and shared responsibilities.

DISCUSSION

Previous studies highlight the competencies required for team working, which were corroborated by the results of the present study. Norsen, Opladen and Quinn (1995) cite the competencies of cooperation, assertiveness, responsibility, communication, autonomy and coordination as necessary in interprofessional relationships. In the present study, accessibility, communication, trust, harmony, respect and experience time emerged as key skills in building interprofessional relationships. Communication is the most cited skill in the literature (Gardner, 2005; Hall, 2005; Lomax & White, 2015; McCallin, 2001). According to Lomax and White (2015), effective communication is the cornerstone for collaborative care, emphasizing the importance of contact in person, which helps create ties and familiarity with each other. In this study, communication was also cited by interviewees and associated with the facilitator of accessibility, construed in the literature as contact in person. An important challengeamong the core competencies for interprofessional collaborative practice is defining the roles and responsibilities of team members (Interprofessional Education Collaborative Expert Panel, 2011). According to an interprofessional education collaborative expert panel (2011), collaboration is facilitated when professionals are aware of the abilities and roles of others, a point emphasized by the interviewees in the present study. Each profession makes its unique philosophical contribution to patient care and the pooling of different points of view, underpinned by different philosophical arsenals, is deemed positive in the context of complex care (Suter *et al.*, 2009). This complexity, characterized by the multiple requirements of patients, encourages innovation in health care, increasing the provision of interprofessional practices in which professional boundaries are less well defined than for practitioners working alone (King, Nancarrow, Borthwick and Grace, 2015).This was corroborated by the practices observed in the clinic.Identifying the complex needs of patients reiterates the need for an interprofessional team practicing in this setting, where professional boundaries become ill-defined and less important.

Also, with regard to the importance of defining roles, we should consider that, as discussed by McCallin (2001), the culture of the medical profession has a history of leadership and mastery of knowledge.The results showed, according to the perceptions of some interviewees, that CMM services could be provided by the physician. This view is in line with the major North-American agencies, that advocate the provision of the CMM service by duly qualified professionals (pharmacists, physicians, nurses and other medical practitioners) and not solely by pharmacists (Viswanathan et al., 2014). Since 2010 in the USA, following enactment of the Federal Law *AffordableCareAct* (ACA), also known as "*Obamacare*", pharmacists and other professionals qualified to provide CMM have had an opportunity to deliver the service at clinics, hospitals and healthcare service providers included in the *Medicare* and *Medicaid* North-American health insurance systems.Despite the supporting legislature, other health professionals (non-pharmacists) account for under 1% of CMM providers. Pharmacists remain the main group responsible for providing CMM, representing 99.5% of all providers (American Pharmacists Association, 2013). No other professionals except pharmacists provide CMM services in Brazil. The service, also referred to as pharmacotherapy follow-up, is legally defined by the resolution of the Federal Board of Pharmacy (Conselho Federal de Farmácia, 2013).

Furthermore, besides the technical skills of other professionals, certain factors may favor or prevent them from offering CMM. Lack of time and the excessive burden of responsibilities of

other professionals constitute factors hampering the provision of this service. It is clear that drug-related problems are real and prevalent, and a professional should be responsible for tackling this issue. Thus, a paternalistic response of centralizing responsibilities to a single professional is counterproductive for care, leading to work overload of a single professional category and precluding the collaborative construction of a complementary approach based on different perspectives.

Final comments

The literature available highlights the importance of interprofessional practice for optimal patient care.This article outlines a possible approach for building interprofessional relationships with an emphasis on the particularities of inserting CMM practitioners as part of the healthcare team. CMM is a new service in the healthcare system and it is expected that there is a learning curve for other professionals to be able to understand the role the service can play in patient care. Over time members of the team recognize that CMM practitioners add knowledge and value to a more holistic care leading to better drug-therapy outcomes. Understanding the stages in building interprofessional relationships is valuable for new collaborative working initiatives.

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