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WILLINGNESS OF HOSPITAL PHARMACISTS TO IMPLEMENT PHARMACEUTICAL CARE PRACTICE, AND THE BARRIERS THAT MAY LIMIT ITS IMPLEMENTATION IN KHARTOUM STATE

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ABSTRACT

Background: The concept of pharmaceutical care is capturing the attention of a growing number of practitioners. There are urgent needs to clarify a number of issues that shape and direct the implementation of pharmaceutical care**,** as pharmaceutical care is the crucial philosophy and mission of pharmacy practice. **Design**: This is a descriptive cross-sectional survey research by questionnaire. **Objectives**: The aim of this study is to identify Hospital pharmacist's willingness to implement pharmaceutical care practice and identify the barriers that may limit its implementation. **Method:** A questionnaire was designed to explore the hospital pharmacist's willingness to implementation of pharmaceutical care and barriers to its provision. The cross-sectional study was conducted, which involve exploring and collecting data from hospital pharmacists in Khartoum state using the self-administered questionnaire approach. The mode of data collection chosen was a self-administered questionnaire. In a sample of 115 hospital pharmacists from a hospitals in Khartoum State the data was collected and analyzed using the SPSS ver.16 (Statistical Package for the Social Sciences). **Result:** The respondent demographic characteristic were collected and analyzed. The median age were found to be 25 years old, 77% are female, 41.7% had experience less than 2 years. Hospital pharmacist respondent's expressed their willingness to implement pharmaceutical care. Respondents listed the major barriers to conduct pharmaceutical care practice as follows: "lack of time; time consuming to collect and report data; pharmacist lack knowledge related to disease state; pharmacist clinical skills is not up to work; poor pharmacist – patient communication; poor pharmacist communication with other health care providers; lack of a clear definition of

pharmaceutical care for which reimbursement is sought; lack of economic incentives and reimbursement for providing pharmaceutical care; lack of support by physician and other health professional; no standard guidelines for pharmaceutical care practicing; insufficient physical space and lack of information technology support for data collection and documentation“ **Conclusion:** The current practice of hospital pharmacists in Sudan needs further improvement. Most of respondent have shown good willingness toward implementation of pharmaceutical care services. Continuing education programs would be an important approach for improving pharmacists' identifying and realizing the role of pharmacists in the management of different diseases. Also working with collaboration with ministry of health to put a guideline or standard for implementation of pharmaceutical care service**.**

KEYWORDS: Hospital pharmacists, Pharmaceutical care, Implementation, barriers Khartoum.

INTRODUCTION

The patient-focused or pharmaceutical care stage began in 1990 and continues to the present time. It is the "patient care" era in which the pharmaceutical care reached maturation and became the main stream function of pharmacists. Patients and their effective treatment with drugs are now central to the pharmacists' role. The pharmacist's role as a "therapeutic advisor" subsequently began to emerge. Hospital pharmacy is the health care service, which comprises the art, practice, and profession of choosing, preparing, storing, compounding, and dispensing medicines and medical devices, advising healthcare professionals and patients on their safe, effective and efficient use. Hospital pharmacy is the profession that can maintain and improve the medication management and pharmaceutical care of patients to the highest standards Additionally a report[1] said that the hospital pharmacist.

- Has more opportunity to interact closely with the prescriber and, therefore, to promote the rational prescribing and use of drugs
- In larger hospital and institutional pharmacies, is usually one of several pharmacists and thus has a greater opportunity to interact with others, to specialize and to gain greater expertise
- Having access to medical records is in a position to influence the selection of drugs and dosage regimens, to monitor patient compliance and therapeutic response to drugs, and to recognize and report adverse drug reaction.

- Can more easily than the community pharmacist assess and monitor pattern of drug usage and thus recommend changes where necessary.
- Serves as a member of policy-making committees, including those concerned with drug selection, the use of antibiotics, and hospital infections (Drug and Therapeutics committee) and thereby influences the preparation and composition of an essential-drug list or formulary.
- Hospital pharmacist should play an active part in patient care by making their expertise available to other discipline and departments.

Also hospital pharmacists can play a significant role in adverse drug reaction (ADR) reporting and pharmacovgilance program because the most serious adverse drug events occur in hospitals, and ADRs account for a substantial proportion of hospital admissions.[2] The concept of pharmaceutical care evolved to help maximize the contributions of pharmacists in reducing and combating the drug-related morbidity and mortality to improve outcomes and decrease health care costs, since drug-related morbidity and mortality is costly both from human resource and a financial perspective.[4] Research demonstrated that; where pharmaceutical care services are applied, they contribute significant benefits to social, humanistic and economic groupings.[4,5,6,7] Pharmacists significantly can help satisfy drug related needs, optimize patient outcomes through pharmaceutical care services by identifying, detecting, resolving, and most importantly, preventing drug-related problems.[8] Studies conducted over the past decades indicated that drug related problems are widespread and cause significant injury and death. A study conducted by Baker and colleagues[9] indicates that the incidence of adverse events in Canada is comparable to that of other countries and estimated to be 7.5%, of which 36.9% are considered preventable. This translates to an estimated annual occurrence of 185,000 adverse events per 2.5 million hospital admissions in Canada, of which close to 70,000 are preventable. Bates et al. estimated patient care costs of preventable adverse events at more than$4000 per adverse event. Bates indicates that, on average, preventable drug events increased length of hospital stay by 4.6 days and that this could increase health care costs by $2.8 million for a 700-bed hospital. In essence pharmaceutical care is that component of pharmacy practice that can be performed by no one other than a competent pharmacist. Competence comprises adequate knowledge and skill to perform a particular function, and an attitude of commitment to the patient's valued interests.[10] In that context, the future direction of the pharmacist not only in hospital but also in community will continue to evolve towards patient-directed services that apply scientific

knowledge and clinical skills to the prevention and resolution of drug-related problems. Subsequently, the pharmaceutical care literature has demonstrated numerous references to the expanding the role of "expert" pharmacists for different disease conditions in a variety of pharmacy settings. As an example, in one thyroid clinic, a pharmacist can initiate, maintain or modify the drug therapy of a selected group of patients under the guidelines of approved protocols. In this clinic, patients treated by the pharmacist include those receiving thyroid – suppression therapy, anti-thyroid drugs for Graves' disease or thyroid hormone supplementation after surgery or after radioactive iodine therapy. The pharmacist assesses patients, prescribes medications, orders laboratory tests, charts visits and therapeutic plans and educates patients about their conditions. Physicians may refer those noncompliant patients or those desiring additional information also are referred to the pharmacist. Joint therapeutic management between the pharmacist and endocrinologist is necessary when there are major changes in thyroid status.[11] All new concepts confront barriers and challenges, and the concept of pharmaceutical care is no exception. As plentiful barriers to providing clinical pharmacy have been identified, these barriers are also presented when considering the adoption of pharmaceutical care. Although there are many different environments in which pharmaceutical care is provided within the practice settings (e.g., hospital and community pharmacy settings), the barriers experienced by the pharmacist are often shared among these different settings. There is universal interest in pharmaceutical care practice. However, its uptake as daily practice by different pharmacy settings has been hindered by a number of barriers to implementation.[12,13,14] Several pharmaceutical literatures tried to categorize the barriers to provide pharmaceutical care as: system-related, resource related, educational, legal, professional and administrative barriers, financial, information-related, communication-related, structural, leadership-related, pharmacist-related, pharmacy management or pharmacy department-related and demand-related barriers[15, 16, 17] and there are numerous subcategories of these barriers categories. A plethora of barriers to providing clinical pharmacy have been well-known including the gap in pharmacy training, information restrictions, divergences of interprofessional, economic structure, and uneven patient demand.[18, 19] These barriers are also present when considering the implementation of pharmaceutical care.[20, 21, 22,23] Specifically, attitudinal factors may represent key obstacles in realizing pharmacists' full contribution to society.[24] Numerous studies evaluating factors that influence pharmacists' provision of pharmaceutical care generally cite or place greater emphasis on individual factors, such as attitude towards trying to provide pharmaceutical care due to lack of competence, confidence , clinical skills, knowledge related to disease state, all

are important factors which determine pharmacists provision of pharmaceutical care.[25, 26] In-depth one study[27] explained that interview of pharmacists who did not provide pharmaceutical care revealed that they need more skill-based training rather than knowledge based continuing education program.

Most pharmacists, as mentioned in several pharmaceutical literatures, stated the lack of sufficient time to provide pharmaceutical care.[28,29,30] The pharmacist's preoccupation with dispensing drug products may constitute one barrier to the acceptance of this new philosophy among product-oriented practitioners; drug distribution continues to be their major responsibility. Patient-care activities are second focus, and perform only when there is spare time or extra staff available.[31] Other studies reported that the percentage of time spent for patient care activates are preceded by percentage of time spent for dispensing and management activities.[32,33] This situation made it very difficult to establish the continuity of care necessary for a good pharmacist-physician and pharmacist- patient relationship.[34,35,36]

Aim of the study: The aim of this study is to identify Hospital pharmacist's willingness to implement pharmaceutical care practice and identify the barriers that may limit its implementation.

The questionnaire consists of three sections as follows.

1. Section one: this section contains questions related to the samples of demographic characteristics
2. Section two: this section was design to describe the level of implementation of pharmaceutical care service in the current practice.
3. Section Three: this section explores the respondent's perception with regards to the barriers on the provision of pharmaceutical care practice. To ease the respondents' lists of perceived barriers to the provision of pharmaceutical care practice was tabulated along with a 5-point scale. The respondents were asked to also specify any other perceived barriers, which were not in the list. Lastly, the respondents were requested to provide suggestion and recommendation to overcome such barriers.

Study design: The cross-sectional study was conducted, which involved exploring and collecting data from hospital pharmacists in Khartoum state employing the self-administered questionnaire approach.

RESULT

***SECTION 1*: demographic characteristics**

Descriptive statistics for age	
Mean	26.77
Median	25.00
Mode	23
Descriptive statistic for the gender (N=115)	
Gender	Frequency	Percent
Male	34	29.6
Female	77	67.0
Total	111	96.5

SECTION 2: Description level of implementation of pharmaceutical care service in the current practice

Implementation of pharmaceutical care	**Yes**	**No**	**Total**
Accessing patient's need for review of drug therapy	91 (79.1)	23 (20.0)	115 (100.0)
Accessing patient's need for drug therapy monitoring	68 (59.1)	42 (36.5)	110 (95.7)
Accessing patient's need for advice on life style modification	90 (78.3)	20 (17.4)	110 (95.7)
Under taking review of drug therapy as part of regular round	46(40.0)	61(53.0)	107 (93.0)
Providing advice on life style modification	81.7	18 (15.7)	112 (97.4)
Providing advice on medicine or side effects	94 (81.7)	17 (14.8)	111 (96.5)
Monitoring compliance of medicines	77 (67.0)	34 (29.6)	111 (96.5)
Monitoring adverse effect (N=115)	71 (61.7)	42 (36.5)	113 (98.3)
Recommending change after review or monitoring of drug therapy	64 (55.7)	45 (39.1)	109 (94.8)

Section 3: Barriers on the provision of pharmaceutical care practice.

Barriers	**Disagree**	**Neutral**	**Agree**	**Total**
Lack of time	27 (23.5)	19 (16.5)	67 (58.3)	113 (98.3)
Lack of patient's demand for Pharmaceutical care	39 (33.9)	22 (19.1)	52 (45.2)	113 (98.3)
Time consuming to collect and record	15 (13.0)	28 (24.3)	70 (60.9)	113 (98.3)
Pharmacist's refuse to document Patient data	39 (33.9)	41 (35.7)	31 (27.0)	111 (96.5)
Pharmacist lack knowledge related to disease state	19 (16.5)	32 (27.8)	62 (53.9)	113 (98.3)
Pharmacist clinical skills are not up to work	28 (24.3)	20 (17.4)	61 (53.0)	109 (94.8)
Lack of drug information resources	49 (42.6)	23 (20.0)	40 (34.8)	112 (97.4)
pharmacist unwillingness to provide pharmaceutical care	37 (32.2)	38 (33.0)	36 (31.3)	111 (96.5)
pharmacist lack confident	33 (28.7)	32 (27.8)	44 (38.3)	109 (94.8)
Poor pharmacist – patient communication	22 (19.1)	21 (18.3)	67 (58.3)	110 (95.7)
Poor pharmacist communication with other health care professional	17 (14.8)	21 (18.3)	71 (61.7)	109 (94.8)
Lack of a clear definition of pharmaceutical care for which reimbursement is sought	15 (13.0)	27 (23.5)	68 (59.1)	110 (95.7)
Lack of economic incentives and reimbursement for providing pharmaceutical care	12 (10.4)	31 (27.0)	70 (60.9)	113 (98.3)
Lack of support by physician and other health professional	8 (7.0)	23 (20.0)	82 (71.3)	113 (98.3)
No standard guidelines for pharmaceutical care practicing	13 (11.3)	22 (19.1)	78 (67.8)	113 (98.3)
Insufficient physical space	11 (9.6)	28 (24.3)	72 (62.6)	111 (96.5)
: Lack of information technology support for data collection and documentation	12 (10.4)	13 (11.3)	87 (75.7)	112 (97.4)

DISCUSSION

The respondent demographic characteristic were collected and analyzed. The mean age were found to be 26.77 years old. It was observed that most of the respondent is young pharmacist. With related to implementation regarding pharmaceutical care in the current pharmacy practice. Hospital pharmacist respondent's expressed their willingness to implement pharmaceutical care. This finding is consistent with a study by Alnada Ibrahim and Jenny Scott[36] among community pharmacy pharmacist which also expressed their willing to implement pharmaceutical care. With related to barriers to the provision of pharmaceutical care practice most of hospital pharmacist respondent's say that lack of support by physician and poor communication with other healthcare professional is a problem. Collaboration with doctor's and other healthcare professionals was perceived to be one of the major barriers that face the development of the pharmaceutical care services. This is consistent with what Awad A. et al.[37] say that many element of patient-centered pharmaceutical care could be introduced with the co-operation of physicians and a key to extending the role of pharmacist should involve making pharmacist more accessible to doctors and patients, ideally, supported by an organized program of continuing professional development. The lack of suitable qualified pharmacy staff is an issue that needs to be addressed to support the development of pharmaceutical care. The availability of qualified support staff has two functions; one is assisting pharmacist in performing services and other is to provide time for pharmacist for the pharmacist as more than half of respondent report that lack of time is one of the barriers to implement pharmaceutical care. This also concern with lack of economic incentives and reimbursement for provide pharmaceutical care which expressed by more than half of respondent as support staff financed. Another area of concern was the role of educational institution and professionals bodies as lack of knowledge and lack of clinical skills or training was perceived to represent a significant barriers. Another barrier was the lack of professional standard. The professional body and other pharmacy institutions including universities have a crucial role to play in the development of professional standards and education. These barriers that we found among hospital pharmacist respondents are almost the same barriers that Alnada Ibrahim and Jenny Scott[36] found among community pharmacy pharmacist participant.

CONCLUSION

Most of respondent have shown good willingness toward implementation of pharmaceutical care services. Also working with collaboration with ministry of health, to put a guideline or

standard for implementation of pharmaceutical care service, and eliminate barrier to its provision.

RECOMMENDATIONS

- Further studies should be conducted in this field in collaboration with Ministry of Health to more evaluation.
- Make of use of the studies to evaluate barriers to provision of pharmaceutical care and work with pharmacists to remove those barriers in both hospitals and community towards pharmaceutical care.

REFERENCE

1. The role of pharmacist in the health care system. (1994; 60 pages). (http://apps.who.int/medicinedocs/en/d/Jh2995e/1.6.3.html). Accessed 21 August 2012
2. Van Grootheest AC., de Jong – van den Berg LT. the role of hospital and community in pharmacovigilance Research., 2005 Mar; 1(1): 126-33.
3. Hepler CD. and Strand LM. Opportunistic and responsibilities in pharmaceutical care. Am J hosp pharm, 1990; 47(3): 533-43.
4. Manasse HR, Thompson KK. Medication-use safety as a problem in public policy. In: Manasse HR Jr. Thompson KK, eds. Medication safety a guide for health care facilities. chap1 Bethesda , MD : American society of health – system pharmacist., 2005.
5. Ernst FR , Grizzle Aj. Drug – related morbidity and mortality: Updating the cost – of illness model. J Am Assoc., 2001; 41(2):192-199.[PMID:11297331]
6. Classen DC, Pestonik SL, Evans RS, Lloyd JF, Burke JP. 1997. Adverse Drug Events in Hospitalized Patients: Excess Length of Stay, Extra Costs, and Attributable Mortality Journal of the American Medical Association., 1997; 227(4): 301-6.
7. Johnson , J. , Bootman J .L Drug related morbidity and mortality. Arch intern Med., 1995; 155(18): 1949-1956. [PMD: 7575048].
8. Strand LM., Morely PC, Cipolle RJ, Ramsey R, Lamsam GD. Drug related problems: their structure and function. DCIM Ann pharmacother., 1990 Nov; 24(11): 1093-7
9. Baker GR, Norton PG, Blais R, Brown A, Cox J. the Canadian Adverse events study: the incidence of adverse events among hospital patients in Canada. Canadian medical association journal., 2004; 170(11): 1675-86.
10. Meyer GE. Developing a pharmacy work force for the future Am J. Health syst. Pharm., 2003 Mar1; 615: 482-3.

11. Dong BJ. Pharmacist involvement in a thyroid clinic.Am J Hosp. Pharm., 1990 Feb; 47(2): 356-6.
12. Ozolinaa V. analysis of accessibility of pharmaceutical care in Latvia and obstructs of implementation or pharmaceutical care in Latvian pharmacies European Journal of pharmaceutical science., 2007; 32(1): 511-512.
13. Berger BA, Grimley D. pharmacist readiness for rendering pharmaceutical care journal of the American pharmaceutical association (wash)., 1997; Sep – Oct; NS 37(5): 535-42.
14. Odedina FT. and Segal R. Behavioral pharmaceutical care scale for measuring pharmacist activities. American journal Health – system pharmacy., 1996; 53: 855-56.
15. Al- Shaqha WMS, Zairi M. Pharmaceutical care management: a modern approach to providing seamless and integrated Health care. International journal of health care quality assurance., 2001; 14: 282-301.
16. May JR. Barriers to pharmaceutical care in the acute setting. American of hospital pharmacy., 1993; 50: 1608-11.
17. Swift BG. Barriers to pharmaceutical care in the home care setting. Am J Hosp Pharm., 1993; 50: 1611-1614
18. Smith W. Excellence in the management of clinical pharmacy service. American journal of hospital pharmacy., 1988; 45: 319-25.
19. Baker EW. Overcoming the barriers prevent community pharmacist from maximizing their contribution to health care. American journal of pharmaceutical education., 1979; 43: 357-9.
20. Ven Katarman K., Madharans S., Bone P. Barriers and facilitators to pharmaceutical care in rural community practice. Journal of social and administrate pharmacy., 1997; 13: 1-7.
21. Hagedron J. Cantril JA., Nicolson M., Noyce P. pharmaceutical care and the deregulation of medicine a survey of British and German pharmacist. Journal of social and administrative pharmacy., 1996; 13: 1-7
22. Raisch D.W. Barriers to providing cognitive service American pharmacy., 1993; NS33(12): 54-8.
23. Nelson, AR, Zelnio, RN and Beno, CE. 1984. "Clinical pharmaceutical services in retail practice II. Factors influencing the provision of services," Drug Intelligence and Clinical Pharmacy., 1984; 18(12): 992-996.
24. Knapp D.A. Barriers faced by pharmacists when attempting to maximize their contribution to the society. Am. J. Pharm. Educ., 1979; 43(4): 357–359.
25. Pickard AS., Nau DP.,Mckercler P., Schumok GT. The importation medications: what are

a pharmacist experience, options and intended behaviors? Journal of the American pharmaceutical association., 2004; 44: 666-72.

26. Penna R.P. pharmaceutical care pharmacy's mission for the 1990. American journal of hospital pharmacy pharmacy's., 1990; 74: 543-49.
27. Odedina FT., Segal R. Behavioral pharmaceutical care. Scale for measuring pharmacist's activities. American journal of health. System pharmacy., 1996 Apr 15; 53(8): 855-65.
28. Rutter PM., Horseley E., Brown DT. Evaluation of community pharmacist recommendations to standardized patient scenario. The annals of pharmacotherapy., 2004; 38: 1080-5.
29. Van Mill JWF. The patient as main variables in pharmaceutical care. Proceeding of the 30th European symposinm on clinical pharmacy integrating pharmaceutical care. Into practice. Pharmacy world and science., 2001; 24(1):(1): 17-26.
30. Bell HM1, McElnay JC, Hughes CM. A self-reported work sampling study in community pharmacy practice. Pharm World Sci., 1999; Oct; 21(5): 210-6.
31. Louie N., Robertson N. Barriers to pharmaceutical care in the managed setting. Pharmacy world aver can journal of hospital pharmacy., 1993; 50: 1614-17.
32. Smith, H. A. (1985) Innovative career counseling manual. Alexandria, AV.
33. Pray WS., poprch NG. Practice patent of past – baccalaureate doctors of pharmacy: a national survey. American journal education., 1988; 52: 2936.
34. Shah MB., kings., palted AS. Inter cultural disposition and communication competence of future pharmacist prescribing (online). (Accessed 2nd January 2008).Available from world wide web http://archive.ajpe.org/aj6808/aj680511/aj6805111.pdf
35. American Society of Hospital Pharmacist. ASHP statement on Pharmaceutical Care. Am J Hosp Pharm., 1993; 50: 1720- 3.
36. Alnada Ibrahim and Jenny Scott (2013) Community pharmacists in Khartoum State, Sudan: their current roles and perspectives on pharmaceutical care implementation Int J Clin Pharm., 2013; Apr; 35(2): 236-43.
37. Awad A. , Al- Ebrahim S. and Abahussain E. Pharmaceutical care service in hospitals of Kuwait. J pharm Sci., 2006; 9(2): 149-57.