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ATTITUDE AND BEHAVIOR OF PHYSICIANS
AND PHARMACISTS TOWARDS PROVISION
OF DRUG INFORMATION SERVICES IN
JIMMA UNIVERSITY SPECIALIZED
HOSPITAL (JUSH)

STAV I PONAŠANJE LEKARA I
FARMACEUTA PREMA INFORMACIONOM
SERVISU O LEKOVIMA U
SPECIJALIZOVANOJ BOLNICI DŽIMMA
UNIVERZITETA

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Key words

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Ključne reči

Stav, ponašanje, lekovi, informacioni
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Abstract

Background: Drug information service refers to duties performed by pharmacists in providing any drug related information to healthcare professionals for provision of better patient care. The provision of drug information is a fundamental and unique responsibility of clinical pharmacists in healthcare system. Purpose: To assess the attitude and behavior of physicians and pharmacists in Jimma University specialized hospital (JUSH) towards provision of drug information services. **Methods:** A questionnaire was administered to 40 physicians and 50 pharmacists. A twenty-item question was added to assess the attitude and behavior of the respondents towards provision of drug information services. Respondents were requested to rate necessity of each item by selecting among, Not Important at all to Very Important (lowest to highest). The instrument was prefaced: Very important, Important, Less important and Not important at all. Their attitude and behavior were expressed in term of item-performance. The percentage item-performance was calculated to reflect the level of necessity of each items; high percentage item-performance of an item correlates with high level of necessity of the item in provision of drug information services and vice versa. **Results:** Out of 90 questionnaires administered, 82 were retrieved given a response rate of 91.2%.The main sources of drug information were medical journals (81%), Internets (72%), Specialty handbooks (70%) and Medical representatives of drug manufacturers (64%) respectively. The most frequently requested drug information areas were adverse drug reactions (81%), dosage/administration (74%), therapeutics (71%), Drug interaction(67%).The attitude and behavior of physicians and pharmacists towards provision of drug information services in JUSH were positive. The study revealed two important facilitators and 3 barriers as the major factors for quality provision of drug information services in JUSH. The two major facilitators in effective and efficient provision of DI services are Support from Non-governmental organizations may help DIC (81%) and Budget allocation to health-care system (79%). **Conclusion:** This study revealed that physicians and pharmacists in JUSH had positive attitude and behavior towards provision of drug information services.

INTRODUCTION

Drug information service refers to duties performed by pharmacists in providing any drug related information to healthcare professionals for provision of better patient care (1).The provision of drug information is a fundamental and unique responsibility of clinical pharmacists in healthcare system. As per the definition of Society of Hospital

Pharmacists of Australia (SHPA), drug information is the provision of written and/or verbal information or advice about drugs and drug therapy in response to a request from other healthcare providers, organizations, committees, patients or members of the public. This may relate to specific patient or consist of general information promoting the safe and effective use of medication (2).

At the University of Kentucky Medical Centre, the first drug information centre was started in 1962, which was intended to be utilized as a source of accurate, unbiased, selected, comprehensive drug information to cater to the needs of the healthcare team⁽³⁾.

In Australia and the United Kingdom, the first drug information centers were established in 1968 at the Royal Melbourne hospital, Victoria and in 1969 at the London hospital respectively⁽⁴⁾.

Until recent past, the drugs available were few in number. However in the present situation due to therapeutic explosion more than 60,000 formulations are available in the market. Moreover, due to information explosion, vast availability of literature and lack of time; health care professionals are not in a position to update their knowledge⁽⁵⁾. Since pharmacists have become increasingly involved in influencing the prescribing pattern, it is important that they provide unbiased evidence-based drug information to prescribers. Pharmacist's interventions directly impact patient care, decrease the likelihood of medication errors, and improve medication compliance⁽⁶⁾.

Drug Information Service in Ethiopian Context

In Ethiopia the first formal DIC was established in Addis Ababa University (AAU) with the help of „Howard-Addis Ababa University Twinning Partnership.” The main objective of this partnership was to promote pharmaceutical care by emphasizing the role of pharmacist⁽⁷⁾. In addition, The Drug Administration and Control Authority (DACA) is also providing drug information throughout the country by means of bulletin, posters, brochures, and radio. The language of the contents is prepared in Amharic and English, under the heading „Zena Medhanit” and „Drug information bulletin”. These information's are distributed quarterly to the health professionals and to the needy. Further, radio is also used as a mode of for delivering information on drug use to the public. However, the above mentioned modes of drug information's were not carried in a well organized manner, due to poor DIC infrastructure and lack of guidelines in Ethiopia. Realizing the importance for the provision of drug information to health care professionals and to the society in a systematic way for promoting rational use of drugs, Food medicine, and health care administration and control authority of Ethiopia (FMHACA) framed a country level guideline for establishment and operation of DIC in Ethiopia. According to the guidelines there is a provision for establishment of national, regional, and institutional drug information center. Further, the guidelines also provides detailed activities of DICs such as education and training to the health care professionals, conducting research and involving in drug use evaluation studies⁽⁸⁾.

Drug information centre(DIC) of Jimma University specialized hospital (JUSH)

JUSH drug information centre has officially been launched in April 2011 with technical support from Addis Ababa University, School of pharmacy and financial assistance from the American international health alliance/twinning center.

It's equipped with the latest drug information databases and other evidence based resources necessary to provide healthcare professionals with unbiased, up-to-date drug

information that can expand their knowledge and improve patient care.

DIC is functional from Monday to Friday for eight hours during working days.

The center has various resources for DI such as, a library comprise of important referral books and electronic database for providing comprehensive pharmaceutical care. The DIC is equipped with computers, telephonic connection, printer, and have accesses to internet.

The study was aimed to assess the attitude and behavior of health professionals (physicians and pharmacists) in Jimma University specialized hospital, Southwest, Ethiopia towards provision of drug information services.

METHODS

Setting

The study was conducted in Jimma University Specialized Hospital (JUSH). It is located in Jimma city 352 km southwest of Addis Ababa. Currently it is the only teaching and referral hospital in the southwestern part of the country, providing services for approximately 15,000 inpatient, 160,000 outpatient attendants, 11,000 emergency cases and 4500 deliveries in a year coming to the hospital from the catchment population of about 15 million people.

This study was carried out from September to December, 2016. The assessed parameters were the attitude and behavior of health professional towards provision of drug information services.

Barriers and facilitators of providing drug information services were also examined. The Health professionals were asked to tick against factors that are likely to affect or promote drug Information services in JUSH.

Sample

40 physicians and 50 pharmacists from JUSH and school of pharmacy were administered a self-completion questionnaire. Respondents were briefed on the purpose of the study and oral consent was obtained from them.

All respondents were assured of confidentiality. They were asked to put the Questionnaire in the envelope provided and hand it to researcher. Completed copies of the questionnaire were retrieved on follow-up visit after two days.

Survey Instrument

Items included in the questionnaire covered functions, areas, requirements, barriers and facilitators of drug information service. the demographic data of the respondents were included. A twenty-item question was added to assess the attitude and behavior of the respondents towards provision of drug information services. Respondents were requested to rate necessity of each item by selecting among ..Not Important at all.. to ..Very Important.. (Lowest to highest). The instrument was prefaced: ..Very important... Important... Less important.., and ..Not important at all... Their ratings were expressed as the attitude and behavior of the respondents towards provision of drug information services which were embodied in the questions. Their attitude and behavior were expressed in term of item-performance. The item-performance is the percentage of respondents that selected both ..Very important.. and ..Important.. In each item. The percentage item-performance was calculated to reflect the level of necessity of each items; high percentage

item-performance of an item correlates with high level of necessity of the item in provision of drug information services and vice versa.

A pilot study was conducted to ascertain the validity and reliability of the instrument. After the pre-test, the instrument was slightly modified to enhance the quality of data collection and analysis.

Analysis of data

The completed questionnaires were sorted and entered into version 16 of Statistical Package for the Social Sciences (SPSS Inc. Chicago) and Microsoft 2010 Excel package for analysis. Descriptive statistics on the sample characteristics and questionnaire items were computed.

RESULTS

Out of 90 questionnaires administered, 82 were retrieved given a response rate of 91.2%.

The detail results of demographic and drug information data of the respondents, the attitude and

Behavior of the respondents towards provision of drug information services and barriers and

Facilitators of providing efficient and effective drug information services in JUSH are presented in Tables below.

Table 1: Demographic data of study participants

| Characteristics | Data |
|-------------------------------|------|
| Age (mean) | 37 |
| Sex (% of male) | 72.4 |
| Marital Status (% of married) | 60.4 |
| Affiliation (%) | |
| Medical Doctor | 52.7 |
| Pharmacist | 47.3 |
| Years of Practice (%) | |
| 1-10 | 82 |
| 11-20 | 11 |
| >20 years | 7 |

Table 2: Sources of drug information currently in use by the respondents in JUSH(%)

| | |
|--|----|
| Medical journals | 81 |
| Internets | 72 |
| Specialty handbooks | 70 |
| Medical representatives of manufacturers | 64 |
| Conferences | 42 |
| Compendia | 40 |
| The British National Formulary | 38 |

Table 3: Areas of drug information that are mostly required (%)

| | |
|---|----|
| Adverse drug reactions | 81 |
| Dosage/Administration therapeutics | 74 |
| Drug interaction | 71 |
| Contraindications | 67 |
| Drug use in Pregnancy/lactation, elderly, renal and hepatic disease | 56 |
| Mechanism of action | 47 |
| Information about herbal medicines | 37 |
| | 14 |

Table 4: Attitude and behavior of the respondents towards provision of drug information services in JUSH

| Items N=82 | Item | Item Performance |
|--|------|------------------|
| Provision of drug information services will improve patients' quality of life | 82 | 81.3 |
| The centre must have access to the principal medical and pharmaceutical journals | 81 | 67 |
| The primary function of a drug information centre is to respond to enquiries on Therapeutic drug use. | 79 | 72.7 |
| Provision of drug information services will enhance health professionals job competency | 74 | 71.6 |
| To facilitate the optimum use of available resources, standard operating procedures should include an approach to categorizing enquiries and maintaining search patterns For common types of questions. | 77 | 68.7 |
| Drug information centers should have a role in programs which monitor adverse drug reactions (Pharmacovigilance) | 77 | 68.3 |
| Information must be dependable, timely, and of the highest possible standard. | 77 | 67.7 |
| The staff should be capable of critically assessing the medical literature and information from industry and media sources and they should also interpret the results in terms of relevance to local practice. | 77 | 65 |
| Drug information centers should be involved in research activities. | 77 | 65 |
| Drug information centers should be organized on a cooperative model involving a Multi-disciplinary team. | 77 | 65 |
| Since patient care is the primary focus, drug information practitioners must have adequate clinical training and experience to complement their information retrieval Skills. | 77 | 64 |
| Patient-related drug information should be part of activities of DICs. | 77 | 64 |
| Provision of DIS will improve the image of health professionals in the state | 77 | 64 |
| The professional staff should include a full-time clinical pharmacist or a clinical Pharmacologist. | 76 | 63.5 |
| A poisons information centre should provide a public health service through Educational programs to reduce the incidence of poisoning. | 76 | 63 |
| A drug information centre should have an independent source of income and status guaranteeing its stability and objectivity | 76 | 62.9 |
| Assessment of therapeutic drugs is an important function of a drug information Centre. | 76 | 62 |
| Provision of toxicology information is also part of functions of DICs. | 75 | 58 |
| Every enquiry should be handled within a reasonable period of time and at a level Appropriate to the nature of the enquirer. | 75 | 52.4 |
| Health professionals should support the establishment of DICs | 75 | 47.9 |

Table 5: Barriers (B) and Facilitators (F) in provision of DIS

| Barriers (B) and Facilitators (F) for provision of DIS | percent (%) |
|---|-------------|
| (F) Support from Non-governmental organizations may help DIC | 81 |
| (F) Budget allocation to health-care system | 79 |
| (F) Government commitment | 71 |
| (B) Inadequate professional and technical personnel | 71 |
| (B) Lack of team spirit among health professionals | 70 |
| (B) Lack of drive and motivation from health professionals | 69 |
| (B) DIS is time and energy consuming | 50 |
| (B) Low or no compelling need for DIS | 41 |
| (B) Lack of fund to run DICs (B) | 39 |
| (B) DIS is sophisticated and complex (B) | 36 |
| (B) Fear that provision of DIS may increase patients treatment cost | 31 |
| (B) Lack of transparency and accountability in running government affair (corruption) | 21 |

DISCUSSION

Demographic characteristics and response rate

The study showed that respondents were mainly physicians, with professional experience of between 1 to 10 years. (Table 1). This outcome is almost similar with study report done in Estonia which reported that 82% were physicians and 18% pharmacists (9). The similarity in those studies result might be contributed to the fact that both studies are done in hospital setting.

The Analysis of respondents showed that almost both physicians (52.7) and pharmacist in JUSH are equally interested in issues concerning drug information.

The sources of drug information currently in use by the respondents

The main sources of drug information were medical journals, Internets, Specialty handbooks and Medical representatives of drug manufacturers respectively while Medical representatives of drug manufacturers were the major information sources in Estonia study (9). The majority of the Respondents (72%) had access to the internet. This allowed for an increase in the need for effective and efficient drug information system or centers that will cater for majority of the health professionals. This is supported by the positive performance of items related to this. The majority of the respondents believed that the drug information Centre must have sufficient amount of principal medical and pharmaceutical journals (72.7%).

Having access to the full text of medical and pharmaceutical journals is necessary to assess the value and Relevance of research.

Areas of drug information that are mostly Sought for

The most frequently requested drug information areas by the respondents were adverse drug reactions (81%), dosage/administration (74%), therapeutics (71%), Drug interaction (67%), contraindication (56%), use of drug in special population (47%), Mechanism of action (37%), Information about herbal medicines (14%). This outcome was similar to the results of the studies Conducted by Padma G M Rao *et al* (10) and George *et al* (11) at the similar site.

The drug information area least asked for was information about herbal medicines. This might be due to the fact that herbal medicines are not frequently used in the study setting though its common in Ethiopia.

Taking into consideration the potential negative or dangerous effects associated with unregulated use of traditional medicines, world Health Organization (WHO) advised that further researches are needed to ascertain the efficacy and safety of several medicinal plants and practices used in traditional medicine system. Since over one-third of the population in developing countries lack access to essential medicines there is a growing needs and challenges with the use of traditional medicines. To tackle this challenges WHO has developed some strategies (12).

Attitude and behavior of the respondents towards provision of drug information services

The study showed that The attitude and behavior of physicians and pharmacists towards provision of drug information services in JUSH were positive which is shown with item performance value of greater than 50% for the majority of items.

The majority of respondents believed that provision of drug information services will improve patients' quality of life and competence (81.3%) while least number of them believed that Health professionals should support the establishment of DICs should be part of activities of DICs (47.9%).

Evaluation of therapeutic use of drugs is an important function of a drug information centre. Educational activities are important to support the quality use of drugs.

Ensuring access to Provision of drug information to health professionals and society is part of continuing health education.

A drug information service centre can also provide an important input to support national and regional authorities responsible for drug use programs. DICs serve as a training centre for undergraduate and graduate students. Healthcare professionals need to have a thorough understanding about the scope and functions of drug information centers in order to exploit their services.

The other important role of Drug information centres is in programs which involve monitoring adverse drug reactions. All duties performed in drug information Centre should be documented. The documentation process should be supported with document-oriented database, or document store which is a computer program designed for storing, retrieving, and managing document-oriented drug information's. This will provide secure, long-term Storage and the confidentiality of enquirers.

The study revealed two important facilitators and 3 barriers as the major factors for quality provision of drug information services in JUSH.

The two major facilitators in effective and efficient provision of DI services are Support from Non-governmental organizations may help DIC (81%) and Budget allocation to health-care system (79%). Inadequate professional and technical personnel (71%), Lack of team spirit among health professionals (70%) and Lack of drive and motivation from

health professionals (69%) are among the top ranked barriers in the provision of DI services in JUSH.

Financial support from non-governmental organizations was identified as the major Contributing factors that could facilitate provision of drug information in JUSH. This organizations also provided technical assistance in the establishment of DIC in the beginning.

Inadequate professional and technical personnel like lack of adequately trained clinical pharmacist and Lack of team spirit among health professionals were identified as the barriers in the provision of DI services.

CONCLUSION AND RECOMMENDATION

In nutshell, pharmacists and physicians in JUSH had positive attitude and behavior towards provision of drug information services. For effective and efficient provision of DI service in JUSH, pharmacists and physicians should

develop team spirit irrespective of their differences in fields of specialization for better patient care.

Since the provision of quality Drug information is essential in the optimizing patients drug therapy Government and Nongovernmental organization should continue supporting the DIC. The Centre should have its own library of commonly used resources. Different pharmaceutical books and publications should be available in hardcopy or electronically from external sources.

Staffing the DIC with adequately trained clinical pharmacists and giving clinical training for pharmacists are important to deliver high quality drug use.

Conflict of interest

The author declares no conflict of interest.

Sažetak

Kontekst: Informacioni servis za lekove se odnosi na dužnosti koje obavljaju farmaceuti u pružanju bilo kakve informacije o lekovima zdravstvenom osoblju u cilju bolje nege pacijenata. Pružanje informacija o lekovima je osnovna i jedinstvena odgovornost kliničkih farmaceuta u sistemu zdravstvene zaštite. **Cilj:** Procena stava i ponašanja lekara i farmaceuta u Džima Univerzitetnoj Specijalnoj bolnici (JUSH) u pružanju informacionih usluga o lekovima. **Metode:** Upitnik je primenjen na 40 lekara i 50 farmaceuta. Dvadeset pitanja je uzeto da proceni stav i ponašanje ispitanika prema pružanju informacionih usluga o lekovima. Ispitanici su bili zamoljeni da ocene značaj svakog pitanja izborom 4 stepena odgovora od „nije bitno uopšte” do „veoma važno” (od najnižeg do najvišeg značaja). Njihov stav i ponašanje su izraženi kao stavka od tačke performansi. Procenat tačke performansi je izračunat da odražava nivo potrebe svakog ispitanika; Visok procenat performansi jedne stavke je u korelaciji sa visokim stepenom neophodnosti stavke u pružanju informacionih usluga o lekovima i obrnuto. **Rezultati:** Od 90 ispitanika, 82 je odgovorilo (91,2%). Glavni izvor informacija o lekovima su medicinski časopisi (81%), internet (72%), specijalni priručnici (70%) i medicinski predstavnici proizvođača leka (64%). Najčešće tražene informacije u oblasti lekova su neželjene reakcije na lek (81%), doze i način primene (74%), terapijska primena (71%), interakcije (67%). Stavovi i ponašanje lekara i farmaceuta prema pružanju informacija o lekovima u JUSH su bili pozitivni. Studija je otkrila dve bitne vodilje i 3 prepreke kao glavne faktore za kvalitetno pružanje informacionih usluga o lekovima u JUSH. Dve glavne olakšavaju efektivno i efikasno pružanje usluga informacija o lekovima, podrška od nevladinih organizacija (81%) kao i raspodela budžeta u sistemu zdravstvene zaštite (79%). **Zaključak:** Ova studija je pokazala da su lekari i farmaceuti u JUSH imali pozitivan stav i ponašanje prema pružanju informacionih usluga o lekovima.

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