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A Cross Sectional Assessment of Health Literacy among Cardiovascular Patients in Karachi, Pakistan

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Abstract

Background: An adequate level of health literacy is related to positive treatment outcomes. The current study is aimed to examine factors associated with health literacy among cardiovascular patients in Karachi city, Pakistan.

Method: The study was designed as a cross sectional, descriptive survey. A pre-validated questionnaire was used for data collection. One hundred and sixty three patients attending the Cardiology Outdoor Patients Department of a tertiary care hospital in Karachi were recruited for the study. Descriptive statistics were used for data elaboration. SPSS v 21.0 was used for data analysis.

Results: Out of 163 patients, the cohort was almost equal in term of gender distribution. Sixty-one percent had urban residency of Karachi city and 62 (38.04%) were categorized as elderly patients. Overall, poor health literacy status was reported among the study respondents. Health literacy was evident with patient's knowledge about medications; knowledge of adverse effects; language barriers and perception about role of exercise in improving quality of life.

Conclusion: Poor health literacy was associated with multiple factors that adversely affect patient's pharmacotherapy plans. Urgent measures by using a collaborative approach of physicians, pharmacist and nurses are required to improve health literacy of Pakistani population.

Keywords: Health literacy; Assessment; Cardiovascular; Pakistan

Introduction

Health literacy is a constellation of skills that range from the ability to read, seek, understand, evaluate and utilize health-related information. Based on the said information, individuals make informed choices to reduce health-related risks and to improve quality of life [1]. Health literacy is a pivotal tool at patient's disposal to perform and manage administrative (scheduling appointment, filling and understanding of consent forms) and clinical tasks (explaining medical history, understanding and following instructions for a therapy, procedure and care) [2]. However, not all patients have the same health literacy skills and level of understanding needed to rationally comprehend health-related information [2].

The existing literature provide empirical evidence that patients with limited health literacy tend to lack health related knowledge and are reported with poor health status [3]. Likewise, low health literacy has been frequently accompanied with poor therapy outcomes and improper use of healthcare services [4]. Medication non-adherence is a cause of growing concern for the clinicians, healthcare systems, and public health policy makers owing to strong evidences about its prevalence and association with the adverse outcomes and much higher costs of care [5]. It has been proposed that the limited literacy levels may be linked to poor compliance with pharmacotherapy [6]. Yet, the relationship between health literacy and medication adherence is still obscure (Powers and Bosworth, 2006). Seemingly, inadequate health literacy has been shown to affect patient's ability to identify medicines [7] and to interpret medicine warning labels [8]. Plethora of literature evidences suggest a strong connection between inadequate health literacy and worse health outcomes, such as little knowledge about health and medication non-adherence, etc [9]. Nevertheless, poor health outcomes due to inadequate health literacy have been attributed to one's ability to make sense of health information [10] along with inability to self care and to access healthcare services

[11]. More interestingly, health literacy has been a stronger correlate of health status than the education status and socio-demographic variables [12-14].

Shifting our concerns to the issue of health literacy in Pakistan, there is scarcity of evidence regarding the role of health literacy on treatment outcomes, medication adherence or use of health care services. However, it is highly unlikely that all intricate, complex and multifaceted associations of health literacy affecting patient outcomes can be studied at once. Thus, we aimed to study commonly reported health literacy factors affecting patient access to health care services, the ability of self-care and general understanding of health care provider during the encounter [15].

Materials and Method

Study design, participants and sampling

The study was designed as a cross sectional descriptive survey. Patients with cardiovascular complication and visiting Cardiology Outdoor Patients Department (OPD) of a tertiary care institute in the city of Karachi, Pakistan were targeted for the study. A time-based sampling criteria was used where by all patients with cardiovascular problems visiting the OPD were included for the period of three

months. One hundred and sixty three respondents fulfilled the inclusion criteria and were included in the final analysis.

Inclusion and exclusion criteria

For the enrolment of subjects, the patient inclusion criteria were cardiovascular diseases. Patients with co-morbidities were also included. Adults having complete medical record at the institute and consenting to participate in the study were included. Patients not willing to consent, having mental disabilities/impairments and having incomplete medical record wereexcluded.books or case files.

Study instrument

Data was collected by using a pre-validated questionnaire. The questionnaire included common parameters related to health literacy by observing community health literacy related clinical trends and practices. The questionnaire was piloted among 25 patients and was tested for reliability and validity. Little modification was needed before the research team approved the final version. Data from pilot study was not included in the final analysis.

Data analysis

The data was analyzed using the SPSS v 21.0. The individual parameters were assessed for their percentage contribution in determining health literacy and the prevalence of each parameter among the samples under study.

Ethical considerations

To date, there is no ethical requirement for non-clinical observational studies in Pakistan [16]. However, permission to conduct the study was taken from the medical superintendent of the respective institute. In addition, written consent was also taken from the patients prior to data collection. The patients were informed about the research initiatives, confidentiality of their responses and their right to withdraw from the study with no penalty or effects on their treatment.

Results

Frequency of demographic variables

Table 1 present the distribution of demographic variables. Out of 163 patients, 52% patients were males and approximately 98.8% of the respondents were married. Sixty one percent belonged to the urban residency (Table 1).

Health literacy among the study respondents

Patients were asked about level of understanding of physicians' instructions and the interpretation of the message. Fifty-seven percent of the patients reported inadequate understanding of the physician instructions. In addition, confidence and trust of patients on medicines was analyzed and majority of the patients (56%) lacked trust in safety and efficacy of medicines. Additionally, 57% of the patients reported lack of the necessary understanding about their disease. Almost one third of patients lacked knowledge towards adverse drug effects and half of them showed no concern regarding the poly-pharmacy. Almost half of the respondents lacked proper understanding of medication use. Moreover, when the physician was asked to rate the compliance levels of patient, interestingly only 28.8% of the patients were found to be non-compliant as shown in (Table 2).

Communication issues were identified as major barriers affecting the communiqué between patients and health care professionals. Sixty percent of the participants faced linguistic problems during conversation and information sharing sessions with the physician. Another indicator of health literacy that was included in the questionnaire was the identification of medications. The results suggested that only 2% of the patients could not identify their medicines, 9% identified their medicines on colour and 50% patients identified their medicines by pack shape and colour of medicines. Thirty nine percent of the patients identified their medicines on basis of written information on the package (Table 2).

Discussion

There is considerable agreement among healthcare professionals that health literacy levels define overall success in treatment outcomes in terms of therapy compliance, disease reckoning and prudent display to complete health related administrative and clinical tasks [17]. Inadequate health literacy contribute results in unfortunate treatment outcomes owing to patient's inability to assess and use health care system, to attend health appointments, to understand health related documents, and to follow prescription directions and drug therapy plan [18].

The current study suggested inadequate health literacy affecting patient's understanding of physician's directions, drug therapy, and drug related adverse reactions. Moreover, the results also presented linguistic barriers in addition to the health literacy that result in further aggravation of murky situation. Within this context, National Health Survey of Pakistan (NHSP) during 1990-94 suggested that cardiovascular morbidities are more dominant in the urban population of Pakistan [7,19]. Therefore, much care is needed for patients with cardiovascular diseases on a daily basis by individual patients. Self-care requires proper assimilation and application of disease and drug knowledge along with related skills. Presumably, adequate health literacy is critical in ensuring apposite patient compliance and proficiency in self management. Data from this study reinforced the importance of health literacy in adequate patient compliance, self care and reckoning of disease severity for a timely visit to their medical practitioner. Additionally, despite marginal literacy levels, health

Demographic characteristics	N	%
Gender		
Male	84	51.53
Female	79	48.47
Age (years)		
28-27	0	0
28-37	7	4.29
38-47	14	8.59
48-57	52	31.90
58-67	62	38.04
>67	28	17.18
Marital Status		
Single	2	1.23
Married	161	98.77
Residential status		
Urban	100	61.35
Rural	63	38.65
Educational status		
Illiterate	34	20.86
Primary	57	34.97
Secondary	35	21.47
Higher Secondary	20	12.27
Graduate	17	10.43

Table 1: Demographic characteristics of the study respondents.

Factors examined	Responses	Number	Frequency
Physician's Conversation Understanding	Not understood	12	7.36
	Little Understanding	92	57.06
	Average Understanding	56	34.97
	Full understanding	1	0.61
General knowledge about disease	Lack of Information	24	15.34
	Less knowledge	92	57.06
	Average Knowledge	44	27.61
	Sufficient Knowledge	0	0.00
Language barriers	Face Problems	65	39.88
	Do not face Problems	97	60.12
Knowledge about medicines in use and dosage	Lack of Knowledge	68	41.72
	Less Knowledge	58	35.58
	Average knowledge	33	20.25
	Well versed	4	2.45
Knowledge of Adverse effects	Lack of Knowledge	102	62.58
	Less Knowledge	54	33.13
	Average knowledge	7	4.29
	Well versed	0	0.00
Ever faced problem medicines	Face Problems	94	57.67
	Do not face Problems	69	42.33
Trust in efficacy and safety of medicines	No response	30	18.40
	Lack of trust	91	55.83
	Slightly dubious attitude	27	16.56
	Confidence on efficacy & safety	15	9.20
Patient's comprehension of poly pharmacy	No response	17	10.43
	Not concerned	82	50.31
	Mixed response	36	22.09
	Concerned attitude	28	17.18
Basis of identification of pills	No understanding	3	1.84
	By pill colour	15	9.20
	By pack shape and colour	82	50.31
	By written information on Package	63	38.65
Patient compliance as rated by Physician	Non-compliant	94	57.67
	Average compliance	38	23.31
	Highly compliant	31	19.02
Frequency of Cardiology OPD visits	Fortnightly	27	16.56
	Monthly	86	52.76
	Others	50	30.65
Perception about role of exercise and diet in therapy	Disagree	5	3.07
	Not sure	81	49.67
	Agree	77	47.24

Table 2: Factors affecting health literacy level.

seeking practices of people dwelling in various regions of Pakistan require serious attention to increase the level of awareness and public literacy, especially among the women belonging to rural areas of all four provinces of Pakistan, to divest them of prevalent myths and superstitions affecting health seeking and self care behaviours [20].

It is beyond doubt that patient's ability to read, listen and comprehend health information is vital in managing and improving health. As evident from the data that four crucial and interlinked indicators (patient's understanding of physician, knowledge of the disease and drug, trust in medicines and compliance) affecting health outcomes were found to be poor and beyond patient's comprehension to assimilate health information and to proceed with self care. Similarly, a number of studies have shown that patients with inadequate health literacy are unable to formulate a beneficial relationship between life style modifications (physical activity, smoking cessation and dietary modifications) and cardiovascular disease prevention [21].

Our data is complete harmony with published reports exhibiting a strong correlation between health literacy and importance of life style modifications.

Unexpectedly, 63% of the patients lacked knowledge of adverse drug reactions while only 17% of the patients were concerned about poly-pharmacy. Interestingly, literature evidences suggest poor associations between health literacy and poly-pharmacy, health literacy and adverse drug reactions [22]. However, our data focused on the probable link between health literacy and knowledge of adverse drug reactions rather than incidences of adverse drug reactions. Furthermore, language barriers to communicate with health care providers coupled with inadequate health literacy further worsened patient's vulnerability to comprehend instructions from health care providers – while literature reports are conflicting regarding the impact of language barrier and outcomes of hospital care [23]. Importantly, according to studies guidance provided by pharmacists and allied health care professionals

may be effective in preventing and controlling the CVD burden. In this regard, studies suggest that cardiac patients, both inpatient as well as outpatient department, may benefit from integrated approaches to reduce the linguistic and cultural barriers [24,25]. In conclusion, our data suggested that inadequate health literacy coupled with language barriers could further aggravate the enormity of the problems, faced by the patients, ranging from inability to comprehend physician conversation, poor understanding of disease and medicine, lack of proper knowledge regarding adverse drug reactions, repercussions of poly-pharmacy, poor compliance to drug therapy and lack of trust in medicines. However, it is pertinent to mention that adapting a collaborative care approach with empowering clinical and hospital pharmacists to provide much demanding role as sole provider of pharmaceutical care and counselling (disease and medicine) could help overcome issues associated with inadequate health literacy.

Conclusion

Poor health literacy shapes as barrier to access healthcare services and to appropriate health treatment among cardiovascular patients. Poor health literacy was associated with multiple factors that adversely affect patient's pharmacotherapy plans. Urgent measures by using a collaborative approach of physicians, pharmacist and nurses are required to improve health literacy of Pakistani population.

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