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Research Article

**PRESENTING A MODEL FOR MENTAL HEALTH SYSTEM  
WITHIN PRIMARY HEALTHCARE**Shahla Damanabi<sup>1</sup>, Mostafa Farahbakhsh<sup>2</sup>, Zahra Khalili<sup>3\*</sup><sup>1</sup>Assistant Professor, Tabriz University of Medical Sciences, Tabriz, Iran.<sup>2</sup>Psychiatrist, Tabriz University of Medical Sciences, Tabriz, Iran.<sup>3</sup>M.Sc. in Science of Health Information Technology, Tabriz University of Medical Sciences, Tabriz, Iran.**Abstract:**

*Since mental health is directly related to individual and social performance and psychosocial harm, and upgrading it requires the availability of appropriate information systems and the collection of data and indicators, it has become, nowadays, one of the most important topics within the realm of healthcare services. The present study was conducted using descriptive-applied method. Initially, an interview was conducted with a number of mental health professionals to identify the status of the information system and mental health indicators in the primary care setting. Then, required mental health indicators were identified within primary healthcare through questionnaire and the results were formulated in the form of information system model and mental health indicators in primary care by using Delphi method. A total of 55 mental health indicators were selected in the primary care system; of these total number, 35 indicators were accepted by the panel of experts, which are categorized into four main categories of context, inputs, processes and functions, and result and output; finally, obtained findings were presented as mental health information system model. This research has identified the current state of the Mental Health Information System (MIS) and suggested practical information domains for planning useful managers in order to provide appropriate mental health services in the primary health care system.*

**Key Words:** *Presenting a Model, Mental Health, Healthcare, primary care***Corresponding author:****Zahra Khalili,***M.Sc. in Science of Health Information Technology,**Tabriz University of Medical Sciences,**Tabriz, Iran.**Email: [khalili.zahra@yahoo.com](mailto:khalili.zahra@yahoo.com)*

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**INTRODUCTION:**

Psychological disorders account for four of the top 10 major causes of disability worldwide; according to estimates, mental and behavioral disorders are responsible for 12 percent of the total burden of diseases in the world [1, 2]. While studies on the prevalence of mental illness have shown that 20-25% of people have mental disorders [3], enhancing mental health and preventing the incidence of further possible disorders require the establishment of active information networks and effective systems for collecting information and determining the indicators of mental health [4]. The results of the research indicate poor documentation and the lack of an efficient system for recording these disorders. As the World Health Organization has stated, many countries, especially developing countries, do not have a good information system [5]. The EU Council's most recent statement also emphasized the development of information on problems, needs and mental health services; however, currently half of the countries do not have the appropriate facilities for collecting data on patient services at the national level [6]. Iran's Mental Health Development Comprehensive Plan includes the reasons for the weakness of the mental health system, the lack of a follow-up system and the mental health information bank [7]. Data collection is not the sole purpose of the mental health information system; rather, it should be able to provide information in all aspects of mental health for informed decision making [8]. Therefore, determination of mental health indicators is a very important requirement for assessing mental health status for practitioners and planners in this field [9]. To this end, they understand the important priorities of the community's mental health and provide the programs that are presented in a desirable manner [10]. However, research findings show that the system of health care centers is not defined in Iran, and most of the data are collected according to the information required by policy makers [11]. Nadi and Jenkins conducted a study in 2007 and they showed that one of the main challenges facing developing countries in mental health is the implementation of mental health information systems [12]. Thus, given the importance of accurate recording of mental health information and its impact on management decisions and access to appropriate services and patient care, the present study was conducted to determine the mental health status in the primary care system, the process and performance indicators of mental health, and the minimum dataset for defining the indicator.

**MATERIALS AND METHODS:**

The present descriptive-applied study was conducted in 2015-2016 to obtain a model of mental health information system. The purpose of this study was to determine the status of mental health information system and indicators in the health center of East Azerbaijan province using interviews; a questionnaire, containing items on four main categories of context, inputs, processes and functions, and result and output, was used to collect required data. The items were examined from three aspects of relevance, degree of importance and performance and they were graded based on Likert scale of 5 degrees, in which score 1 represents the lowest and 5 the highest. The validity of the questionnaire was determined using content validity method (receiving the views of the supervisors, consultants and relevant experts, as well as using the materials contained in the texts and related resources of the research topic) and its reliability was measured through re-test method. The research population included mental health experts, psychologists, psychiatrists and statisticians. Being involved in mental health domain with at least 5 years of work experience and being interested in participating in the present study are inclusion criteria. CVI was used to analyze Delphi results; indicators with cvi less than 0.5 removed, more than 0.7 was accepted, and those between 0.5 and 0.7 were introduced into the second Delphi round.

**FINDINGS:**

In the first stage of the study, 8 mental health experts, 5 of whom were male and 3 of whom were female, were interviewed (Table 1). Then, the Delphi method was used to determine the indicators for providing the model. 38 subjects, among whom 19 questionnaires were completed and returned to the statistical population, participated in the first round of Delphi test. The first participants in Delphi included 6 psychiatrists, 8 senior psychologists, 2 psychologists, 2 mental health experts and 1 statistician. 25 indicators the cvi of which turned out to be higher than 0.7 were accepted in the first Delphi test and 18 indicators were transferred to the second round, among which 10 indicators acquired 0.7 cvi and accepted and 8 indicators were removed due to not qualifying based on the minimum cvi; i.e. 0.5. an overall number of 35 indicators were selected in the expert's panel; one indicator of the six indicators of the context category, twelve out of sixteen in the input category, eleven out of fourteen in the process and function category, and eleven out of nineteen indicators of output ad result category were finally selected (Table 2).

**Table 1: Characteristics of participants in the interview**

Variable	Kind	No
Gender	Male	3
	Married	5
Speciality	Psychiatrist	1
	Ms.c Psychology	4
	Bs.c Psychology	2

**Table 2: Indicators selected in the expert's panel**

	Context	Insurance coverage
First round	Input	The number of beds per 1000, the number of nurses per 1000, the number of clinical psychologists per 10,000, access to psychological drugs, supporting patients with psychological disorders, treatment costs, percentage of people with major depressive disorder, the rate of continuing education of health care providers, the percentage of training sessions based on need assessment
	Process and performance	Mental health education, detected depressed patients, screening of risk factors for chronic diseases in psychiatric disorders, higher levels of involvement, life skills training, stress management training, number of childcare education, counseling for smoking cessation, self-care education, Screening rate of depression disorder
	Output and outcome	Peoples' satisfaction with mental health services, percentage of population covered by mental health integration program in primary health care, incidence of psychological disorders, feedbacks, weighting, annual depressive disorder, percentage of depressed patients under treatment
	Context	-
Second round	Input	The number of psychiatrists per 10000 population, the proportion of physicians to patients referred, the availability of mental health policies, and the proportion of the cost of health care in primary care paid to mental health.
	Process and performance	Screening rate of suicidal risk factors,
	Output and outcome	Percentage of people who have access to mental health services, suicidal attempts during the year, suicide death rates, suicide rates, percentage of patients with psychological disorders receiving primary care
	Context	-

**Table 3: Indicators presented for the model**

<b>Mental health program performance indicators</b>	<b>Providing Mental Health</b>	Regional	Percentage of referrals to higher levels	
		National	Insurance coverage Access to mental health policy	
	<b>Presenting Private and Public Services</b>	Health enhancement	1.The number of training sessions held based on the needs assessment 2.The number of stress management training 3.The number of training skills in nursing 4.The amount of mental health education 5.The number of child-rearing education 6.The number of counselling for quitting smoking 7.The number of self-care education 8.The amount of continuing education for health care providers	
		Screening and treatment	1.Screening rate of suicidal risk factors 2.Depressed patients treated 3.Detected patients detected 4.Screening of risk factors Chronic psychological disorders 5.Screening of depression disorder 6.of patients with neurological problems	
		Care and rehab	-	
	<b>Providing Resources</b>	1.The number of beds per 10000 2.The number of nurses per 10000 3.The number of psychiatrists per 10000 4.The number of clinical psychologists per 10000 5.The proportion of the doctors to referring patients 6.The proportion of the population covered by the Mental Health Integration Program in care		
<b>Economic Support</b>	The proportion of the cost involved in mental health care in primary care			
<b>Mental health outcome indicators</b>	<b>Enhancing Mental Health</b>	1. The rate of suicide 2. The number of people with major depressive disorder 3. Death rate of suicide 4. The incidence of psychological disorders 5. Suicidal attempts 6. Times of care for annual depression disorder 7. Feedbacks		
	<b>Accountability</b>	1. The extent of people's satisfaction with mental health services 2. Percent of the population with access to mental health services 3. Access to mental health disorder drugs		
	<b>Protecting economic sources of people</b>	The degree of support provided for disordered patients against treatment costs		

**DISCUSSION:**

Mental health information system is a means of assessing the quality of services by estimating measurable indicators in the context of Mental Health Services policies [8]; these indicators are indispensable for monitoring mental health status in each country and developing mental health policies and programs. However, several studies have acknowledged that there is no mental health information system in Iran's health and treatment

centers and activities are, merely, carried out in the form of simple data collection [13]. The results of this study also indicate that there are shortcomings, including the lack of updated information and indicators, in the mental health information and primary health care system, of Iran. Therefore, current mental health indicators were categorized in four groups of context, input, process, and output in the present study, mainly with the aim of the management of these

indicators. Within the category of context, the most important analyzed item was insurance coverage; the number of psychiatrists per 10,000 population, the number of deaths per 10,000, the number of nurses per 10,000, the number of clinical psychologists per 10,000, the level of access to psychiatric drugs, the support of psychiatric patients in relation to treatment costs, percentage of people with major depressive disorder, the rate of continuing education of health care providers, the percentage of educational sessions held based on needs assessment, the ratio of physicians to patients referred, access to national mental health policies, percentage of psychiatric patients under care and treatment, proportion of primary health care provided by mental health services, the percentage of people with major depressive disorder as the most common psychiatric disorders, and the highest percentage of mental illness, 79.63%, were measured within the category of input. From the perspective of indicators related to the process and performance of mental health education, the number of depressed patients detected, the rate of screening of risk factors for chronic diseases in psychiatric disorders, the number of cases to higher levels, the number of life skills training, the number of stress management training, the number of childcare education, the number of advices for quitting smoking, self-care education, the rate of depression screening, and the rate of suicide risk factors screening have been measured with the final outcome that the number of life skills training, with the highest obtained score of 77.78%, is one of the most effective indicators for improving mental health [14]. In the category of output and results, satisfaction with mental health services, the proportion of the population covered by the Mental Health Integration Program in the primary health care system, the incidence of psychological disorders, the amount of feedbacks, the care burden of annual depression disorder, the percentage of depressed patients treated, the percentage of population who have access to mental health services, suicidal attempts over the course of the year, suicide death rates, and percentage of patients with psychological disorders are indicators which have occupied the highest frequency of importance [15]; people's satisfaction with mental health services and the number of deaths caused by suicide have obtained the highest score; i.e. 74.07%. additionally, process and performance category indicators obtained higher scores, signifying the importance of these indicators in understanding the current state of mental health in the country; thus, they can be used to achieve the important goals of policy making, planning and resource management [16]. Additionally, The European Committee has presented the design of health indicators in the conceptual model of mental

health, predisposing factors, social interaction, resources and individual experiences as categorization of indexes which include sub-categories such as suicide, deaths from uncertain events, addiction-caused deaths, severe depression, general anxiety disorder, suicide attempts and alcoholism [17]. According to Mohammedi *et al* study (2014), indicators presented for categorizing mental health status include the number of hospital beds, the prevalence of psychological disorders by age, sex and type of disorder throughout the year, the number of chronic mental illness per year, the prevalence of drug use, and the continuous number of disabled people [10]. Based on the findings of Herman *et al* study (2004), 134 indicators, including the percentage of mental patients treated and the importance of care provided, were introduced for determining the quality of mental health care in the OECD countries [18]. In the other studies, 26 mental health indicators were introduced in primary health care, 11 of which were for the general care group and 10 were related to health or quality indicators in primary health care [19]. A set of indicators has been introduced for primary and home care in Austria, indicating access to social support, access to national policies and the percentage of population receiving appropriate mental health services [20]. Six indicators, all of which were used in the present study, have been foregrounded in Iran's national plan of healthcare, including the population covered by the Mental Health Integration Program in the primary health care system, the incidence of psychological disorders, the prevalence of psychological disorders, the rate of suicide during the year, the amount of insurance coverage and the percentage of referrals to higher levels by the Ministry of Health [21]. WHO considers the main functions of the health system to be promote health, accountability and the level of financial protection of people, which, in turn, requires the existence of performance and outcome indicators [22]. In the current study, 35 indicators were obtained from the Panel of Experts in the form of a model which, according to the WHO report, include two groups of performance indicators of mental health and mental health program (Table 3).

### CONCLUSION:

The presented model, which is extracted out of the context of the analysis of 35 indicators, is hoped to be considered and applied for the fulfillment and satisfaction of current needs of primary health centers. Additionally, presented indicators could be used in the assessment of the quality of services provided in the framework of primary health care, decision-making, policy-making and better implementation of mental health programs.

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