



Classifying the Factors Affecting Information Therapy to Support Clinical Decisions on Addiction

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Abstract

Background: The present study aimed to identify the dimensions and components of developing an information therapy approach for clinical decisions on addiction in addiction treatment centers based on the opinions of thematic specialists in Iran using the fuzzy Delphi technique.

Methods: This study was a qualitative one conducted using Delphi method on 20 researchers of addiction treatment in the areas of psychiatry, psychology, medicine, etc.

Findings: The analysis of the data revealed 92 indicators in two dimensions, namely information dimension (health literacy) and treatment dimension (health services), each containing 6 components. The information dimension included acquiring information, identifying information, sharing information, raising awareness, information needs, and health knowledge, and the treatment dimension included patient satisfaction, information-seeking behaviors and skills, treatment methods and costs, participatory care and use of information, educational interventions, and disease prevention.

Conclusion: Developing an information therapy approach in addiction treatment, as a cost-effective and low-cost method, is one of the cognitive strategies that can be used by officials to pave the way for health in this regard. This technique aims to improve the quality of medical services and care for addicts and is a suitable solution to meet their needs.

Keywords: Information therapy, Health literacy, Health services, Clinical therapy for addiction, Fuzzy Delphi technique

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Introduction

In the light of scientific studies and clinical work in recent decades, effective therapeutic approaches for the treatment of substance and alcohol abuse have been introduced. These treatments are about as effective as other treatments available for chronic patients. However, many believe that these treatments are not effective which can be due to unrealistic expectations and misconceptions about addiction. Addiction is a complex multidimensional chronic disease characterized by an intense and irresistible urge to use drugs. Despite its negative side effects and recurrent recurrences, addiction might be evident even after long periods of abstinence. If the mental health and addiction challenges are properly addressed, society will reap the benefits in the form of policies, practices, and error reduction. Otherwise, its impact on stopping the growing trend of improving health will not be unexpected.^{1,2} Most people equate addiction with mere substance use, while addiction is a chronic disease. Of course, not all available treatments are equally effective because there are so many addictive drugs. In addition, the characteristics of addicts as well as the associated disorders and severity of addiction can affect the effectiveness of treatment. However, without a

doubt, to achieve the ultimate goal of treatment, which is avoiding long-term use of substances, requires multiple and continuous courses of treatment programs, including information therapy. Today, the results of studies conducted in developed countries show that one of the five main factors of success in implementing education programs for patients, including addicts, largely depends on their health literacy of information therapy and increasing it.³ Every addicted person should be able to understand health information and learn how to use it. Health literacy as the main part of information therapy refers to having the skills, ability, and confidence to absorb, understand, and use health information.

On the other hand, physicians and therapists also need specialized knowledge to access the most up-to-date information, and pay close attention to the information behavior of the treatment staff and the patient. Nevertheless, there are major barriers to using a wide range of digital databases, archives, and evidence-based medical resources, to support clinical decisions for therapists,⁴ such as the lack of easy access to reliable and up-to-date information as well as the difficulty in formulating search strategies for accessing a significant amount of information in a very short time.^{5,6} Therefore,



it is necessary to identify the needs and find ways to understand the information-seeking behavior of physicians and addiction therapists.⁷ Accordingly, the present review was updated and expanded from the review study by Dawes and Sampson and other studies related to the physicians' clinical information-seeking behavior during patient care. Dawes and Sampson reviewed articles which determined the nature of physicians' information resource priorities in clinical practice from 1966 to 2001.⁸⁻¹⁰

The results of studies conducted in developed countries show that one of the five main factors in successful patient care is providing education on health information as a form of care.¹¹⁻¹³

It is obvious that identifying the factors affecting the development of information therapy and information-seeking skills of addiction therapists in achieving the above goals is effective. Patient education is generally a very tangible economic justification, saving an average of \$ 3 to \$ 4.¹⁴⁻¹⁷ In Iran, providing information therapy services is not a high priority due to the lack of attention of the high-ranking treatment managers. Besides, providing information therapy as one of the services of the patient care system in the hospital requires the identification of related variables as well as deterrents and facilitators.

According to the dimensions and components obtained in this study using the fuzzy Delphi approach, the results can pave the way for trustees and officials in the field of health to increase self-care information of patients in the medical information system.^{18,19}

This study attempted to develop an information therapy approach for addiction treatment to improve patient satisfaction and increase health literacy in the community. The provision of medical information services can be a positive step towards achieving this goal. Therefore, the aim of this study was to identify the dimensions and components of health information therapy in addiction treatment.

Methods

This qualitative study was conducted using the Delphi method by referring to 20 experts and researchers in the field of medicine and health including psychiatrists, psychologists, physicians, and faculty members, preferably at the associate level and above, in addiction treatment centers. In the first round, with a comparative exploratory approach and study of the literature, the activities and rounds of the health information therapy process in patients were identified, and the most important affective components were determined. Therefore, 112 open categories, 12 axial codes, and 2 selective codes were identified. Then, an initial questionnaire for the proposed conceptual model was designed using a qualitative research method (fuzzy Delphi) based on the opinions of experts obtained during

three rounds of validation leading to the final research model.²⁰ Delphi is a systematic approach or research method to extract opinions from a group of experts on a topic or question, or to reach a group consensus through a series of questionnaires while maintaining the anonymity of respondents and providing feedback to panel members. This method is often performed in 2-3 rounds. The advantage of the fuzzy Delphi method is in considering each of the ideas and integrating them to reach a group agreement.²¹⁻²⁴ Delphi was conducted using a 5-point Likert scale questionnaire. Likert scale is one of the most common scales for measuring attitudes and includes a set of phrases. The respondents rate their agreement with each of the phrases in a range that is usually from one to five.²⁵ The snowball sampling method was used in the qualitative part of this study to select the participants. Accordingly, 20 experts and specialists in the field of addiction treatment, including psychiatrists, psychologists, physicians, and faculty members, preferably at the associate level and above, participated in this study.

After receiving the opinions of the experts, the first Delphi round was examined with new questions and components via Excel and SPSS software. Before starting, the spectra in the questionnaire form must be fuzzy as shown in Table 1 and equation 1 the verbal variables. The first interview form of this research included 2 dimensions, 12 components, and 112 indicators based on the codes identified from the review of literature which was then distributed based on the opinions of 20 members of the expert community.

In Table 1, the definite fuzzy numbers are calculated using the Minkowski formula as follows:

$$\mathcal{X} = m + \frac{\beta - \alpha}{4} \quad \text{Eq. (1)}$$

In the first round, the initial model of the coding of the research literature along with a description of the components, criteria, and sub-criteria were sent to the group of experts and a survey was conducted to obtain their agreement or disagreement with each component. Their point of view, suggestions and corrections are summarized as follows. According to the proposed options and linguistic variables defined in the questionnaire, the results of the study were calculated using the fuzzy mean of each of the dimensions and components according to

Table 1. Triangular fuzzy numbers of verbal variables²⁶

Verbal variables	Triangular fuzzy numbers	Definite fuzzy numbers
Very much	(1, 0.25, 0)	0.9375
Much	(0.75, 0.15, 0.15)	0.75
Medium	(0.5, 0.25, 0.25)	0.5
Little	(0.25, 0.15, 0.15)	0.25
Very little	(0, 0, 0.25)	0.0625

the following equations:

$$A_i = (a_1^{(i)}, a_2^{(i)}, a_3^{(i)}), i = 1, 2, 3, \dots, n \quad \text{Eq. (2)}$$

$$A_{ave} = (m_1, m_2, m_3) = \left(\frac{1}{n} \sum_{i=1}^n a_1^{(i)}, \frac{1}{n} \sum_{i=1}^n a_2^{(i)}, \frac{1}{n} \sum_{i=1}^n a_3^{(i)} \right) \quad \text{Eq. (3)}$$

Results

Figures 1 and 2 show the views of experts from the first survey on the dimensions and components obtained in this study. As is evident, the highest rate of agreement of experts in the first round of the survey in the information dimension (health literacy) was related to information needs with an average of 0.867. In treatment dimension (health services), the highest rate of agreement was related to information-seeking behaviors and skills (cognitive and social therapy) with an average of 0.810. Moreover, the highest level of agreement was related to the information dimension (health literacy) with an average of 0.812 and then the treatment dimension (health services) with an

average of 0.7592.

The second round of the Delphi survey

In the second round of the survey, the experts answered all the questions as in the first round. The results of the second phase of the Delphi survey are shown in Figures 1 and 2. The highest rate of expert agreement in the second phase of the survey in the information dimension (health literacy) was related to information needs with an average of 0.874. In treatment dimension (health services) the highest agreement rate was related to educational interventions, with an average of 0.844. Furthermore, the highest level of agreement was related to the information dimension (health literacy) with an average of 0.8271 and then the treatment dimension (health services) with an average of 0.8053.

Moreover, according to the views presented in the first round and comparing them with the results of this round, if the difference between the two rounds was less than the threshold, it was considered very small (0,1),²⁷ and then the poll process stopped. The following table shows

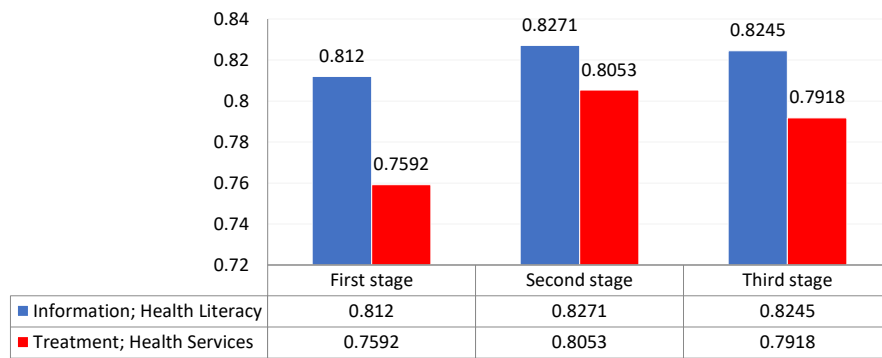


Figure 1. Comparison of identified dimensions for health literacy and health services in addiction treatment centers in the first three Delphi rounds

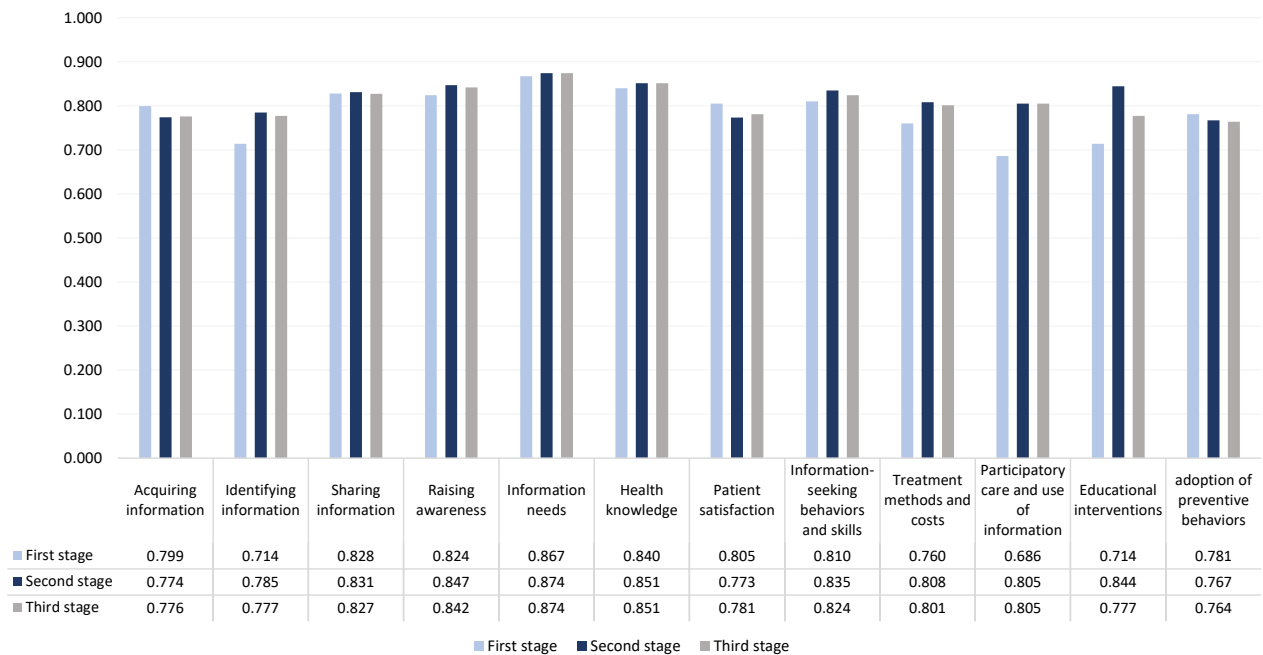


Figure 2. Comparison of identified components in the first, second, and third rounds of Delphi

the differences between the views of experts on research indicators using equation 4 in the first and second rounds.

$$S(A_{m2}, A_{m1}) = \left| \frac{1}{3} [(a_{m21} + a_{m22} + a_{m23}) - (a_{m11} + a_{m12} + a_{m13})] \right| \text{ Eq. (4)}$$

As can be seen in Figures 1 and 2 and Table 2, in the third round, a questionnaire with 44 questions was developed (highlighted indicators).

According to Figures 1 and 2, information therapy consists of the information dimension (health literacy) and the treatment dimension (health services). The opinions of experts were saturated and all opinions were aligned. In these figures, the highest rate of expert agreement in the third survey in the information dimension (health literacy) was for the information needs with an average of 0.874, and in the treatment dimension (health services) was related to information-seeking behaviors and skills (cognitive and social therapy) with an average of 0.824, which indicates there is a very close relationship between these two categories. The second and third Delphi rounds indicated that they overlap in the two final rounds slightly lower.

Discussion

The present study identified the dimensions and components of developing an information therapy approach for clinical decisions on addiction based on the opinions of thematic specialists in Iran. As a result of the Delphi method analysis, the information therapy consisted of 92 indicators and two dimensions, namely the information dimension (health literacy) and the treatment dimension (health services), each containing 6 components. The information dimension included acquiring information, identifying information, sharing information, raising awareness, information needs, and health knowledge and the treatment dimension included patient satisfaction, information-seeking behaviors and skills, treatment methods and costs, participatory care and use of information, educational interventions, and disease prevention.

The treatment dimension (health services) was less distant from the information dimension (health literacy) in phase 3 than in phase 2. Moreover, in the component diagrams for the three rounds, the results showed that in the information dimension (health literacy), the information needs was highlighted. The highest rate of opinions of experts in the second round with an average of 0.874 and in the third with an average of 0.874, showed the complete saturation of experts' opinions and the overlap of these two rounds. In addition, the overall position of information needs emphasized the need for paying more attention to health literacy based on the opinions of specialists and addiction therapists in Iran.

In the treatment dimension (health services), the information-seeking behaviors and skills (cognitive and

social therapy) in addiction treatment in the first round of the survey with an average of 0.810, educational interventions in the second round with an average of 0.844, and information-seeking behaviors and skills (cognitive and social therapy) in the third round with an average of 0.824, showed the complete saturation of expert opinions and complete overlap of these two rounds. This indicated the position and role of this variable in the health system, in general, and in the field of addiction treatment in the addiction treatment centers in particular.

In line with the results of this study, Gholami et al,²⁸ found in their study that information is essential for responding to patients and enhancing their participation in treatment decision-making and optimal life management. Firooz et al²⁹ also believed it is essential to find strategies to improve self-care in patients. Besides, Baghaei et al³⁰ indicated that there is a more practical relationship between patients' characteristics and their level of knowledge with different dimensions of self-care and education in diabetes centers. Thus, more emphasis on making changes, both in knowledge and information behavior, as well as, improving attitudes are essential to increase people's sense of self-efficacy. The findings of this study were also in line with those of the studies by Zare-Farashbandi et al,³¹ Mohammadesmaeil and Kianmehr³² Mirmohammadkhani et al,³³ Hälleberg Nyman et al,³⁴ and Smith et al.³⁵

Thus, the results of this study would be useful for managers and officials of healthcare organizations in the future. Efforts should be made to provide accurate and timely information and optimal services to patients using modern health information management systems including the information therapy approach.

Conclusion

Information therapy is an easy, accessible, and low-cost treatment method which is used today in most developed countries along with other treatments. Unfortunately, the importance of such methods and the role of information therapy in this field in Iran are still unknown. Although this kind of treatment is about as effective as other treatments available for chronic diseases, many believe that these treatments are not effective. This can be due to unrealistic expectations and misconceptions about addiction. Addiction is a complex multidimensional chronic disease characterized by an intense and irresistible urge to use drugs. Despite its negative side effects and recurrent recurrences, addiction is evident even after long periods of abstinence. Hospitalized patients with substance use disorders are known as one of the biggest challenges in the health system. In this regard, there is strong evidence that caregivers face challenges in caring for these patients. Thus, the present study attempted to identify the main dimensions and components of developing an information therapy approach for clinical

Table 2. The differences in the views of experts in the second and third rounds

Row	Indicators	Second round	Third round	Difference
004	People's efforts to obtain information, awareness, and correct and practical knowledge of diseases are necessary to have a healthy lifestyle.	0.7813	0.79375	-0.0125
006	In the information-based treatment process, the patient's trust in the physician for a better diagnosis of the disease increases in some cases and decreases in others.	0.9	0.725	0.175
009	As identifying and using information can change attitudes and behaviors, informing patients under treatment is essential.	0.8563	0.8438	0.0125
010	Information enhances the services that can be provided in the health network, especially in pediatric medical centers.	0.9	0.88125	0.01875
011	Informing means facilitating the identification of and access to information contained in various sources of medical information by the medical staff.	0.6313	0.63125	0
012	Effective information is efficient for appropriate information-seeking behaviors by physicians and patients.	0.7625	0.73125	0.03125
013	Appropriate identification and use of information are essential for developing an information therapy approach.	0.88125	0.88125	0
014	Health information is related to the health behavior of people in the community.	0.5438	0.54375	0
017	An example of information sharing is providing feedback in all areas.	0.8813	0.63125	0.25
019	To develop an information therapy approach in addiction treatment, it is necessary to pave the ground for appropriate and timely sharing of information by experts.	0.9188	0.8375	0.08125
020	Sharing information with patients helps to alleviate their concerns	0.7313	0.7938	-0.0625
023	The motivation and goal of the user to obtain information, whatever they are, increase their awareness	0.775	0.9	-0.125
025	In the discussion of raising awareness, it is necessary to pay attention to information-seeking behaviors and information needs of physicians and patients.	0.9188	0.8688	0.05
030	Information needs form the decision-making process based on the principle of probability.	0.6625	0.88125	-0.21875
032	Addressing the need for information in practice leads to excessive consumption of medical services resources.	0.6625	0.88125	-0.21875
041	Optimal therapy services help improve the performance of care teams and provide effective feedback to patients, leading to their satisfaction.	0.5313	0.5438	-0.0125
042	Optimal services provided by the medical staff, in practice, maintain and improve the patient's health and satisfaction as much as possible.	0.8625	0.88125	-0.01875
048	In the treatment process, the medical staff must be aware of the purpose of treatment and have a high level of expertise in obtaining specialized information (the information-seeking behavior of medical staff stems from their motivations and efforts to acquire health knowledge).	0.9188	0.8813	0.0375
049	In the information-seeking process, gaining health knowledge and skills can only be achieved by attending conferences and workshops.	0.9	0.8438	0.05625
050	Performing the right self-care behaviors, which occur along with the detection and addiction treatment, is a skill lacking in cognition.	0.5313	0.8625	-0.33125
055	In information skills, finding resources and familiarity with the process of acquiring health knowledge are essential.	0.8813	0.8188	0.0625
057	Trying to perform the right self-care behaviors learned by the sick person relieves their family and loved ones of their responsibility.	0.8813	0.6625	0.21875
058	Information-seeking behaviors and skills are not simply the result of environmental conditions.	0.9188	0.78125	0.1375
059	Information-seeking behavior training should be in full accordance with the individual's behavioral characteristics.	0.7563	0.9	-0.14375
060	In the process of seeking and obtaining information, self-efficacy in patients under addiction treatment should be further examined.	0.9	0.7875	0.1125
061	Performing the right information-seeking behaviors, while creating a spirit of interaction, does not create independence of action in the individual.	0.6625	0.8375	-0.175
063	High self-confidence, due to obtaining correct information in care work, leads to appropriate care behaviors.	0.9188	0.8375	0.08125
066	The process of self-care information-seeking creates the right motivation and enhances a person's values.	0.9188	0.76875	0.15
067	Information seeking and information therapy are two totally independent categories.	0.6625	0.81875	-0.15625
068	Ignorance of effective information-seeking behaviors and skills is the result of poor medical resources.	0.7313	0.8625	-0.13125
074	The practice of effective information-seeking behaviors by physicians is influenced by their mental image of a sense of worth.	0.7313	0.91875	-0.1875
075	Information-seeking helps to develop an individual's knowledge and identify competencies.	0.8313	0.6625	0.16875
080	Evaluation of symptoms and information are the main goals of reducing treatment costs.	0.6313	0.7875	-0.15625
087	Ignorance and poor self-care impose high costs on sufferers each year.	0.8125	0.7875	0.025

Table 2: Continued.

Row	Indicators	Second round	Third round	Difference
092	In the discussion of promoting knowledge and care awareness, the use of information is a vital principle.	0.8625	0.88125	-0.01875
094	Acquiring health knowledge is a mutual cooperation in treatment process.	0.6625	0.8625	-0.2
095	The use of information in the treatment and promotion of health requires the participation of patients in the treatment process, and the performance of appropriate self-care behaviors.	0.8063	0.7875	0.01875
097	The therapist's use of information in treatment evokes a desire to survive and retain, and the patient becomes kind to himself/herself and others.	0.7875	0.80625	-0.01875
100	Educational interventions require joint training programs.	0.8813	0.7875	0.09375
101	Information and self-care can only be achieved through education to avoid risky behaviors.	0.5313	0.79375	-0.2625
103	Educational interventions lead to patient care in the form of a cohesive educational team.	0.8188	0.7875	0.03125
104	Knowledge of how to maintain health and prevent diseases leads to improving the lifestyle of patients undergoing addiction treatment.	0.8063	0.7875	0.01875
108	Knowing how to maintain health and prevent diseases can reduce stress as well as mental and emotional disorders caused by this disease.	0.6313	0.7	-0.06875
111	Mere evaluation of health symptoms leads to the adoption of preventive behaviors.	0.7	0.8125	-0.1125

decisions on addiction in related treatment centers based on the opinions of thematic specialists in Iran using the fuzzy Delphi Method. This method filters out the criteria extracted from the literature. Fuzzy set theory is used to address the vagueness and uncertainty of experts' judgments, and the group decision-making process is handled by the Delphi method.²⁴ According to the results of the present study, information therapy emphasizes the provision of appropriate information at the right time to the patients (addicts), which helps to improve their physical and mental health. Concerning the importance of health information and the need to provide this information to patients and their families, and given the staggering costs of treatment that afflict them, this cheaper and more cost-effective treatment strategy is required to be adopted. Therefore, the officials of health and medical organizations, especially addiction treatment centers, are recommended to pay more attention to the above items.

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Author's Contribution

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Competing Interests

None declared.

Ethical Approval

This article reports the result of an independent research (inspired and based on a research project IR.TUMS.VCR.REC.1398.585) and was carried out in compliance with ethical considerations.

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