

A Review of models and theories of health information seeking behavior

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Abstract

One of the ways for preventing diseases is the transfer of health information by educating the patients and encouraging them to search for related information. Knowledge of patient information seeking behavior can provide health and health information experts with valuable information used to improve the patients' health. Although due to the abundance of health information, it is easily possible to prevent some chronic diseases, many people lose their lives or suffer serious complications from these diseases due to lack of knowledge about prevention methods. Therefore informing people about the progress of these diseases and useful prevention methods is of outmost importance. Investigating the patients' information seeking behavior and identifying their information seeking patterns can provide us with useful strategies for effective transfer of information to the patients, thus improving the patients' self-management and prevent progression of their disease. The aim of the current study is to introduce models and theories related to information seeking behavior of patients.

Key words: Health information seeking behavior, model, theory

Introduction

After the Second World War and with the increase in scientific and technical information, the subject of information seeking behavior was first introduced in the scientific information conference of Royal society in 1948. This started a new approach in studying the information seeking behavior of people.^[1] Krekels considers the information seeking behavior to be a personal initiative for fulfilling a recognized need. Therefore, information seeking behavior arises from information need and is a lower level of information behavior. In some definitions, information seeking behavior includes all interactions

with the system both at the level of interactions with computers and including abstract interactions.^[1] In other definitions, information seeking behavior can include accidental exposure to the information, feeling the need for information, finding, selecting and using of the information and in some cases even refusing the information.^[2] In general, complex behavioral patterns and interactions of people when seeking information are considered to be information seeking behavior. This label is used in different forms to refer to any context in which information seeking takes place and can include all forms of information seeking.^[3]

As is apparent from the definitions of the term, information seeking has different meanings in different texts and its definition is rarely clear and straightforward. According to Cease these differences are due to factor such as the reason for seeking information (curiosity, personal preferences), the position of the information seeker, personal characteristics of the seeker (student, expert, patient, care provider), information sources (personal, nonpersonal) and the information gathered.^[2] The common trait in all definitions is that the information seeker gets involved in the process of seeking information using different methods and each person, based on the situation and conditions has different motivations and stimulus for seeking information. The ultimate and final goal of all information seeking behavior is to satisfy the information need of the people.

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Health Information Seeking Behavior

Many people get involved in health information seeking in order to improve their health.^[4] Different groups have different goals for their search for health information. If information seeking is done by patients and in order to improve their health, it'll be used as a factor in the decision making process for making health related decisions and can be considered a health decision making process.^[5] Health information seeking behavior includes activities such as search, finding and using of information related to diseases, health threatening factors and health related activities done by a person.^[6] The following are among concepts related to health information seeking behavior of patients:

- Type of the health information sought^[6-18]
- The extent of the health information sought^[11,13,15,19]
- Factors related to information source such as credibility and accuracy^[8,10,13,14,20-25]
- Factors related to messages in information sources such as clarity or vagueness of the message, general of the specialized nature of the message and instability of the information^[17,26-28]
- Personal traits of the information seeker such as individual understanding regarding the importance of the disease, beliefs, personal values and preferences^[10-12,15,28-32]
- Personal characteristics such as gender,^[7,11,14,33] age^[8,14,17,18,33] education level^[7,8,33-35] and income^[7,18,33]
- Personal traits of the doctor, patient's family members and characteristics of the organization or environment responsible for providing the patients with suitable ways of information seeking^[10,12,14-16,18,29,32,35-37]
- Patient's health situation (seriousness and type of illness).^[10,14,21,23,30,38]

A look at the concepts related to health information seeking behavior demonstrates the vast extent of the concept of health information seeking. Today, many people actively seek information that can improve their lifestyle. Increasing evidence shows that there is some kind of the positive relation between knowledge of personal health and health information seeking behavior.^[39] The extent and nature of the gathered health-related information can change the knowledge, belief and attitude of the information seeker regarding specific health-related behaviors.^[19] Furthermore, health information seeking behavior sometimes acts as a predecessor for other health related behavior such as visiting doctors or taking medical examinations. In other words, people that more actively seek medical information are more likely to visit doctors for minor problems and partake in more medical examinations compared with people that don't seek health related information.^[40]

Today due to the advances in information world and as a result of the expansion of information sources and easy

access to these sources, information seeking behavior, especially health seeking behavior or people has undergone many changes. Unlike in the past, direct interaction with doctors and healthcare providers isn't the sole source of information for the patients and the patient can get involved in active seeking of health information in order to improve his health situation and can gain new insights and consult the medical practitioners about this new information.^[41]

In general, health information seeking had been studied from three different points of view:

1. Coping with situations that put a person's health at risk
 - In this point of view, information seeking is a problem centered coping method. People with this point of view concentrate on health threatening situations and try their best to gain as much information as possible about stressful situations^[6-12,21,22,28-31,36,38,42]
2. Involvement in medical decision making
 - People with this point of view seek information in order to understand the decisions of medical experts and practitioners about their health situation. These type of people also expect the medical experts to listen to their opinions and consider them in order to reach a better decision.^[6,14-17,22,31]
3. Behavior change and preventive behavior
 - Although the information alone can't guarantee healthy behavior, having enough related information can cause positive changes in people's health-related behaviors.^[6,7,9,14,16,22,23,29,31,32,37,42]

In most studies regarding health information seeking behavior, the stimuli behind information seeking are a specific information need. Although information seeking alone can't guarantee healthy behavior, it seems that having enough health-related information and outputs caused by this new information are defining factors for future health related behaviors.^[19] According to Lambert and Loiselle, outputs of health information seeking are as follows:

1. Cognitive outputs
 - Such as increased knowledge, informed decision-making, increased understanding of control and coping methods
2. Behavioral outputs
 - Such as discussing the gathered information with medical practitioners and health experts,
3. Health outputs
 - Increased ability for self-care and commitment to treatment and changes to health behavior
4. Physical outputs
 - Such as increased live quality due to increased physical health
5. Effective results
 - Such as reduced stress, fear and anxiety and increased hope and empowerment.

Necessity of Investigating Health Information Seeking Behavior

To factors clearly shows the importance of understanding the health information seeking behavior of patients: Great increase in health care services worldwide and easy and widespread access to different medical information from sources other than health care providers. Today due to these two factors, the general populace has more chances to keep and improve their health.^[19] However, even today many patients lack proper knowledge regarding their diseases therefore investigating health information seeking behavior gains importance. Some of the results of these studies are as follows:

Psychological adaptation to the disease

In most cases seeking health information is considered to be an effective and useful method for adaptation to health improvement activities and psychological adaptation to the disease.^[39] Information seeking is a mechanism for dealing with changes, uncertainties, disabilities, crisis' and gaining control after health related situations^[43] By knowing the information seeking behavior of patients, one can identify the triggers leading to information seeking and encourage them to seek related information.^[27] The more informed a patient is regarding its disease, the easier and faster the adaptation will become, leading to psychological adaptation to the disease.

Increasing of self-management

Health information had an educational role in the patient's decision making process, awareness of its health and active management of the disease. Self-management is an important aspect of treatment which requires for the patient to be more aware and informed regarding its disease. Understanding the most popular information sources used by the patient, the patients' information needs, identifying the barriers and motives for information seeking, the search method and selection, use, role and effect of information on the patient and its family by investigating the patients' information seeking behavior helps create strategies for effective transfer of health information to the patients which can without a doubt help the patients' self-management.^[28]

Removing information seeking barriers

Having suitable information at the right time can help control and prevent the diseases.^[33] One of the benefits of investigating the patients' information seeking behavior is identification of information seeking barriers affecting them. An understanding of barriers affecting seeking, finding and using information related to diseases can be useful for people in charge of health and education in medical centers to create strategies in order to remove these barriers which can lead to improvement in the patients' health. One can identify these barriers by investigating the information seeking behavior of patients.

Education and effective transfer of information to the patients

One of the methods of reducing the severity of diseases is providing the patients with health information through education and encouraging them to seek related information.^[39] Educators working in health and medical centers can use their knowledge of information seeking behavior of the patients to identify the motives and stimuli of information seeking and therefore their information needs helping them in creating more effective methods for education and information transfer to the patients.^[33]

Increasing the support of the family

Many of chronic diseases such as diabetes, cardiovascular and respiratory disease and other similar ones necessitate the support of family and sociality.^[44-47] Investigation of the patients' information seeking behavior can specify the support of the patients' families and its effect on the patient and therefore help in creating minor and major strategies for confronting these chronic diseases.

Creating mutual understanding between patient and doctor

Despite the willingness and efforts of patients for seeking health information, most of them were unsuccessful in obtaining their information from medical experts due to misunderstandings regarding the information needs of the patients.^[43] The results of studies regarding health information seeking behavior can be used to change the views of medical experts and health care providers, improving the relation between patients and their doctors.

Design of information systems

Usually the individuals tasked with the design of information systems try to understand the information needs of individuals in order to design a suitable system for health information.^[1] By better understanding of information seeking behavior, one can achieve better information flow and design better medical and healthcare systems. Therefore the results of such studies are useful for both patients and their relatives and for designers of medical and healthcare information systems.

Identification of health information seeking patterns

Most of health behaviors are voluntarily which means they need people to act based on their personal judgment and can be considered outputs of a decision-making process. Based on this view, the behavior of a patient is the result of choosing between several available options. Although active information seeking isn't necessary for having enough information (since information can also be gained passively) but knowledge of the information seeking patterns can potentially justify making a specific health related decision from several available options.^[43] There are several models and theories trying to portrait the health information seeking behavior of patients, some of which are discussed in the following section.

Models and Theories Regarding Health Information Seeking Behavior

Health information seeking models are used for predicting the activities and behavioral patterns of people during the process of seeking health related information and depict people's experiences by using a combination of their thoughts, emotions and activities. The results of information seeking activities on a person's health and the relation between different stages of information seeking are also presented in information seeking model.^[2] These models are used to evaluate the credibility and accuracy of theories.^[4] A total of seven different models for health information seeking discussed in the related literature are explained in the next section. These seven models are:

- Lazarus and Folkman's Stress, appraisal, and coping theory^[6]
- Miller's Monitoring and blunting hypothesis^[41]
- Lenz's Information seeking model^[43]
- The health information acquisition model of Freimuth, Stein and Kean^[6]
- Johnson's comprehensive model of information seeking^[6]
- Longo's *et al.* expanded model of health information seeking behaviors^[28]
- Trans theoretical model (TTM) of health behavior change by C. Nadine Wathen and Roma M. Harris.^[4]

The health information acquisition model of Freimuth, Stein and Kean

Freimuth *et al.* designed their health information acquisition model [Figure 1] by studying the Cancer Information Service (CSI), an organization founded by National Cancer Institute of United States in 1975.^[2-5] CSI used trained personnel to gather cancer related information by answering people that called a national phone number. The health information acquisition model of Freimuth has six stages: (1) Stimulus (2) information goal setting (3) cost – benefit analysis of search (4) search behavior (5) information evaluation and (6) decision point on adequacy of information. These stages are part of a decision making flowchart in which the decision in each stage determines whether one can advance to the next level or repeat the previous ones. This model is a descriptive model and doesn't investigate personal or contextual factors effecting information seeking behavior. The strength of this model is that it acknowledges the information seeking process can be iterative. This means that there is a feedback loop after the information evaluation stage to determine whether the gathered information is enough or not. If the amount of the information gathered isn't satisfactory, one can return to the cost– benefit analysis stage and repeat the process until a suitable result is obtained. Newer models of health information seeking behavior lack this feedback loop and are considered to be linear models.^[41]

Johnson's comprehensive model of information seeking

This model is the result of a study by Johnson investigating women seeking information related to mammography in magazines [Figure 2]. In this model four factors effected the information seeking which are: (1) Demographic factors, (2) direct experiences of people, (3) salience and (4) beliefs of people

Demographic factors and direct experiences are background factors but salience and beliefs are relevance factors. Demographic factors include age, gender, education, Ethnicity and socioeconomic status of information seekers. Direct experiences include the experiences of information seekers regarding their health condition which is usually affected by people's social network.^[41]

Salience refers to the fact that the information gathered by a person not only satisfies the information needs but is also applicable. According to Dervin, salience information is information that acts as a bridge to cover a gap, solve a problem and remove ambiguities. Therefore this concept is the main driving force behind information seeking.^[2]

Beliefs play an important role in information seeking because the limits of people's thoughts and motivations are defined by their beliefs. A people's beliefs about themselves and the world around them are the defining factor for answering questions such as "is there a problem?," "are there any solutions?" and "am I capable of changing my situation?" Beliefs aren't simply about facts but also effect the relation of people with the current situation such as their risk perception and self-efficiency. A person that doesn't believe having information about a problem makes changing the situation possible naturally will never search for information related to the problem. On the other believing that changing the situation is possible gives a person sufficient motivation to search for tools to fix the problem leading to seeking new information.^[2] The final component of Johnson's comprehensive model of information seeking is actual information seeking behavior which is affected by the previous factors. This model, unlike the previously mentioned the health information acquisition model of Freimuth is a linear model.^[41]

Lenz's Information seeking model

In this model information, gathering is a part of decision-making process and consists of the following six stages:

1. Information seeking stimulus
 - This stimulus can be derived from within the person (pervious experiences regarding specific symptoms or injuries) or comes from the surrounding environment (death of a friend, negative comments of acquaintances about health habits or TV programs). This stimulus leads to the identification of the discrepancy between available information and information needed by the patient

and therefore leads to the start of information seeking process. Some of these stimuli are: Identifying a problem that needs to be prevented or solved, a decision that has to be made, a goal that needs to be achieved or placement in and unfamiliar or threatening situation

2. Setting information goals
 - When a person is in the decision-making situation, available information must be used in order to determine the goals that define the conditions of seeking and gathering of information. Information goals lead to concentration and limit unnecessary and side activities. Based on these goals patient determines the time-frame in which the information needs to be gathered, the information sources used, types of information sought and other similar factors
3. Decision making regarding whether to actively seek information
 - By identifying the stimuli, with or without explicit goals leads to making a decision about whether it is necessary to actively seek information or not. This decision is derived from the amount of previous information available, mental background regarding the problem and anticipated cost–benefit ratio of information seeking. If people believe to have enough information, naturally they won't seek more. Also is situations such as financial difficulties, time constraints, hopelessness, confusion, poor physical and mental health caused by the disease or willful ignorance regarding the information can outweigh anticipated benefit of active information seeking, people refuse to actively seek information. Reduction of stress, anxiety and uncertainty and increased control over the disease are among the benefits of active information seeking. Patient might believe active information seeking to be unnecessary because all needed information can be gained passively from the environment. People with these beliefs never ask questions from their doctors because they believe that the doctors will provide them with all the necessary information
4. Search behavior
 - This stage comes to pass only if a person decides to seek information actively. The extent of the search is determined based on the two factors of a number of alternatives investigated and the number of dimensions of each alternative. The extent of the search can differ from in-depth search to superficial information seeking and has a direct relation to the amount of information gathered. However, one must remember that not every search leads to finding relevant or new information. The search can be carried out in two ways: (1) Impersonal in which the information is gathered from inanimate sources such as publications, reference services or strangers or (2) personal in which the patient gathers the information from people familiar to

them. The information seeking process is, usually, a mixture of these two methods, and a personal search is often preferred over impersonal one.

5. Information acquisition and codification
 - After actively seeking information, the information seeker will evaluate the gathered information and determines whether the new information is new and relevant or new and irrelevant. New and relevant information is memorized and might act as a stimulus for encouraging further search behavior.^[43]
6. Decision making based on the adequacy of acquired information
 - As soon as the information seeker gathers the necessary information, the adequacy of this new information is evaluated to determine whether information seeking needs to continue or stop. The criteria for this evaluation are subjective. This evaluation can be carried out based on the results of a comparison between information needed and obtained, cost–benefits analysis of information seeking or based on information goals determined before the start of information seeking process.

Factors such as exhaustion, boredom, hopelessness, urgency for taking a certain action and difficulty of information seeking process can lead to a premature termination of the search, while factors like curiosity and interest and help people continue the search for more information. The final outputs of this search process are cognitive and behavioral changes in the information seeker.^[43]

Miller's monitoring and blunting hypothesis

Based on this hypothesis, monitoring and blunting of information are among coping styles used by people when faced by threatening situations.^[48] When active seekers of information are confronted by threatening situations, they start a search and gather a massive amount of information related to their current situation while those that refuse active information seeking don't look for new information.^[40]

Active information seekers are quicker to identify the symptoms of diseases because they are more likely to visit doctors for minor problems compared with others. Active information seekers tend to gather a massive amount of information about their health problems, their health status, prevention methods and side-effects of medications and treatment methods, while those refusing to actively seek information have minimum information in these areas.^[40]

Active information seekers have higher stress levels compared to others and also have to suffer more pain. Also their treatment takes longer than those refusing to actively seek information. Although active information seekers have higher levels of anxiety,^[40] they also feel more responsible toward their own health and try to monitor their own health status. Gathering massive amounts of information

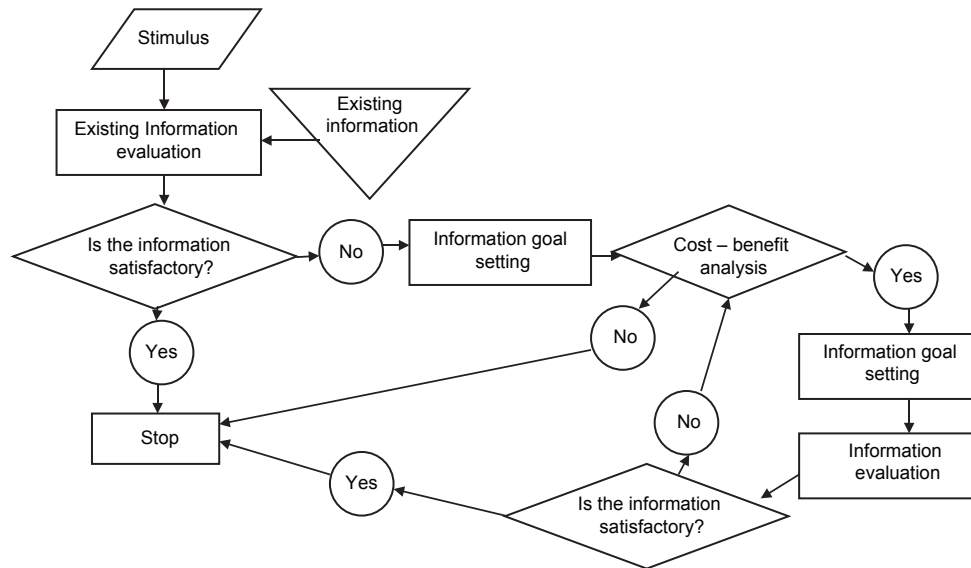


Figure 1: The health information acquisition model of Freimuth, Stein and Kean (41, P. 23)

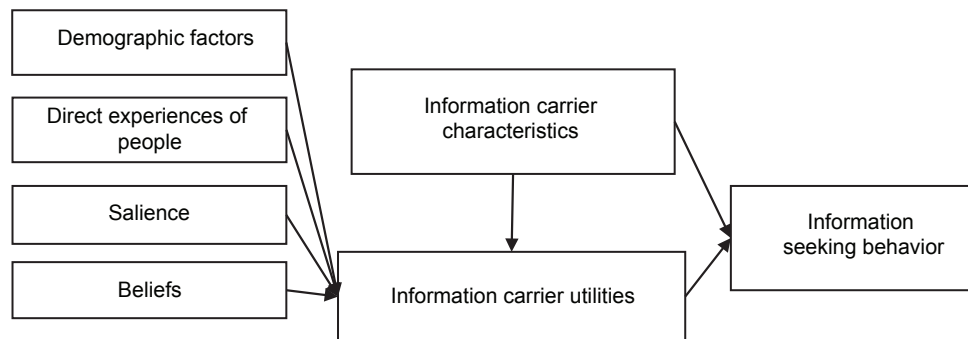


Figure 2: Johnson's comprehensive model of information seeking (41, P. 26)

during information seeking helps relieve some of the stress and anxiety felt by these people. These people are quicker to accept their diseases and adept to the current situation and pay more attention to health care and prevention methods.^[49]

Selecting any of these styles depends on several factors. Some people prefer to ignore new information in critical and uncontrollable situations, while search for information during critical but controllable situations. On the other hand, some people act in the exact opposite way. These people refuse to look for new information during controllable critical situations while actively seeking information seeking uncontrollable situations. This process can lead to increased stress and anxiety therefore selecting one of coping styles based on the situation can also lead to increased stress.^[50] During uncontrollable critical situations and when enough relevant information isn't at hand, if active seekers of information were to follow the same style as those refusing to actively seek information, they would achieve better results. Of course, this methods requires that people be trained to distinguish between controllable and uncontrollable situations and know how to willfully ignore new information.^[40]

Finally those refusing to actively seek information are faced with critical situations; they are in more danger compared with active information seekers because they are not equipped to deal with hopeless and malicious experiences.^[40]

Lazarus and Folkman's Stress, appraisal, and coping theory

Coping is a process used in daily lives mostly when people are under pressure. This process is defined as constant and variable behavioral and cognitive endeavors for managing internal and external needs. Coping consists of two parts, which are Appraisal and coping.^[51] There are two types of coping, problem focused and emotion focused.^[52] In problem focused coping method, people concentrate more on the problem that is the root of the stress and try actions to solve that problem. People that use this method spend all of their efforts on gathering the necessary resources for dealing with stressful situations and therefore attempt to gather information, resolve conflict, plan and make decisions.^[51] Problem focused coping methods deal with problems using interpersonal relations and planning.^[52] In emotion based coping methods, people seek to reduce the negative feeling resulted from stressful situations. This method

is a pragmatic method^[51] and includes: (1) Distancing (2) escape- avoidance (3) accepting responsibility or blame (4) self-control over the expression of feeling (5) seeking social support and (6) Positive reappraisal.^[52] Most people employ a mixture of these two coping methods.

According to Lazarus, emotions and personalities of people affect the evaluation method and therefore selection of coping mechanism. Evaluation of the stressor and personal abilities for dealing with them happens in three different situations: (1) When a person has experienced a stressor (2) when a person anticipates a stressor and (3) when person experience a chance for mastery or gain.^[51]

People with positive and optimistic personalities evaluate the stressor with a positive outlook and therefore actively try to deal with the problem. On the other hand pessimistic and timid people evaluate the stressors negatively and underestimate their abilities in dealing with these situations and therefore avoid actively dealing with the problems.^[51]

Social scientists believe that encounters involving harm or benefit have three stages of anticipation, confrontation and post-confrontation. Coping in an anticipatory context allows people to control situations that are about to happen during confrontation stage using prevention methods and therefore control and improve the situation. After confrontation with the situation, the coping methods are more about dealing with Consequences and implication of the situation. Since Person-environment relationship changes in each of these stages, people's emotions also undergo changes.^[52] Therefore for better understanding of the relation between emotions, coping and evaluation methods, one needs to take into account the changing personality of people when dealing with problems and their thoughts, actions and interpersonal relations.^[53]

Longo's expanded model of health information seeking behaviors

Longo's model [Figure 3] is designed in order to understand the nature, source and usage of health information related to chronic disease.^[19] The initial design of this model was created by Longo *et al.* in the year 2005 in order to investigate the information seeking behavior of women with breast cancer.^[12] 5 years later at 2010 and based on the same model, Longo *et al.* investigated the information seeking behavior of diabetic patients and introduced a new model which was the same as the previous one with minor changes for these patients.^[28] This model is based on qualitative data and has a conceptual structure.^[41]

In this model, the effects of personal and contextual factors on the information seeking behavior of patients are investigated. Personal factors include demographic and socioeconomic factors, health history, genetics, anxiety, culture, language, attitudes, behaviors, current health status, cognitive abilities and interpersonal communication motives. Contextual factors include health situation,

healthcare structure, delivery of healthcare, information environment, information seeking for self, family members or friend at risk or with current medical problems, interpersonal social supports and networks.^[28] Longo in his model counts both active information seeking and passive receipt of information among information seeking behaviors the details of which is available in Figure 3.^[41]

The most important characteristic of this model is depiction of the output process of information seeking for the patient which was absent in all previous models.^[41] The output of active information seeking and passive information receipt in this model is the effect of information on increased control over the disease, creating satisfaction in the patient, ease of everyday activities and finally better health status. Longo's *et al.* model is considered to be a liner model.^[28]

Trans-theoretical model of health behavior change by C. Nadine Wathen and Roma M. Harris

One of the main goals of all health experts and enthusiasts is to help people in having a healthier life. This goal usually includes advising people to quite health threatening practices (such as smoking or eating unhealthy), take up healthy habits (such as working out) or helping people to better manage some of their behaviors in order to improve their health and comfort. Health improving activities, from personal consulting to group activities are all information behaviors. In truth in healthcare, principals and theories of communication and related areas such as studies of information behavior are, usually, used to find a more efficient way for informing people about health related issues

Trans-theoretical model which is also called stages of change and readiness was first used in the area of addictions to discover a way in helping people quit smoking [Figure 4]. The main theory of TTM is that the stages in behavioral changes are discontinuous and people follow through these stages in a somewhat linear way. There are numerous stops throughout the way, some of which are merely brief stops, while others are temporary or permanent returns to the previous states. Therefore this model is depicted as a spiral in the time dimension

The five main stages of change in the TTM are:

1. Percontemplation stage
 - In this stage the person has no intent to change and might even be unaware that a problem exists
2. Contemplation stage
 - In this stage, the person is aware that a problem exists and seriously contemplates changing the situation, but takes no action yet. The key factor of this stage is that the person seriously starts to consider the pros and cons of the problem and possible solutions,
3. Preparation stage
 - In this stage, the person is ready to change and might have even started small changes like small changes in behavioral problems

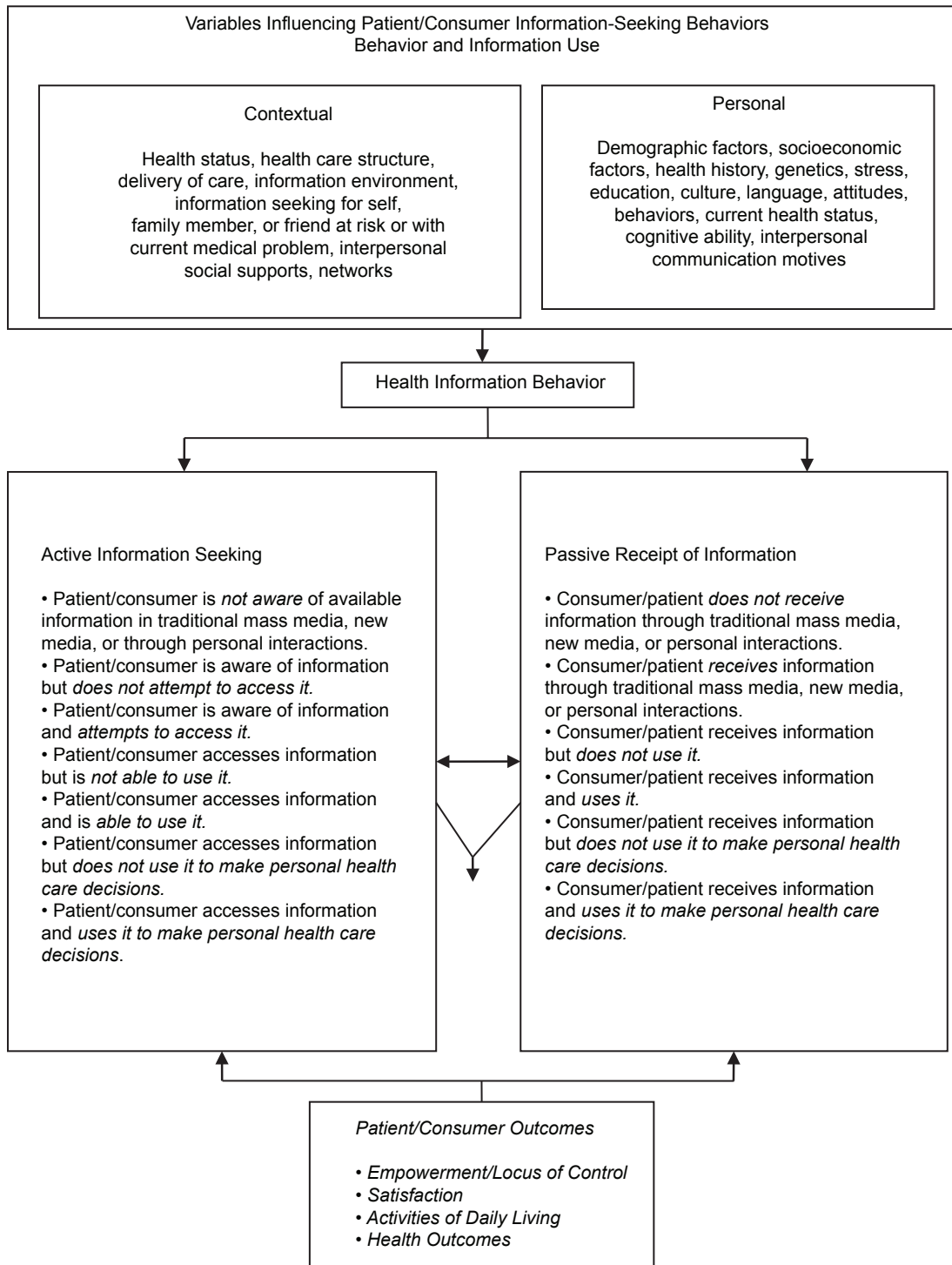


Figure 3: Longo's expanded model of health information seeking behaviors (28, P. 337)

4. Action stage

- In this stage, person creates serious changes in behaviors, experiences and environment in order to address the problem. In this stage, the problem is being worked on but the solution is still not at hand

5. Maintenance stage

- In this stage the person tries to stabilize the changes and stop from returning to the past conditions [Figure 5].

When a person goes through these stages, he gets involved in the process of experimental (cognitive – emotional) and behavioral changes. Probably the most interesting aspect of TTM is hidden and apparent reliance on awareness of the change in the first stage. This fact is especially obvious in the information gathering stage in which the person is involved in increasing the available information about self and the problem using observations, confrontations, interpretations and book therapy

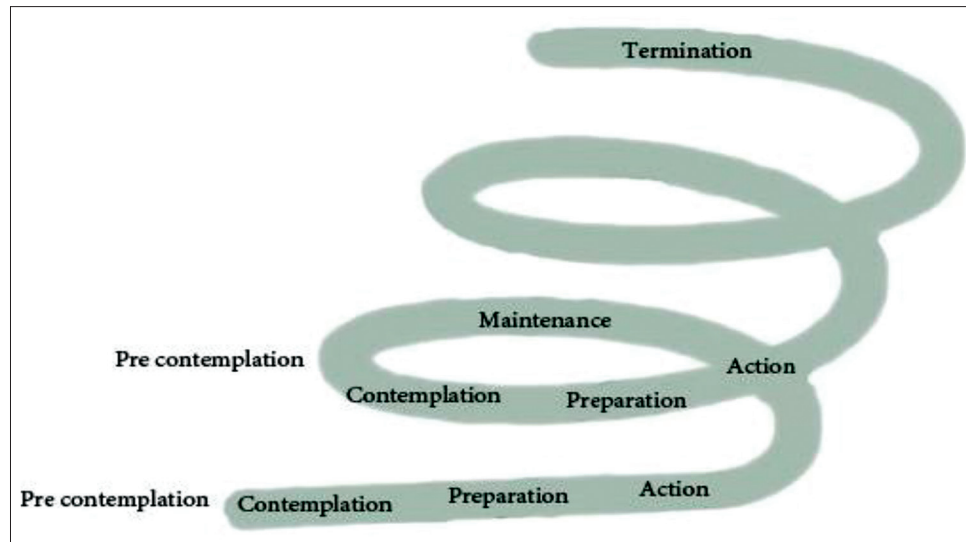


Figure 4: Spiral model of the stages of change (4, P. 428)

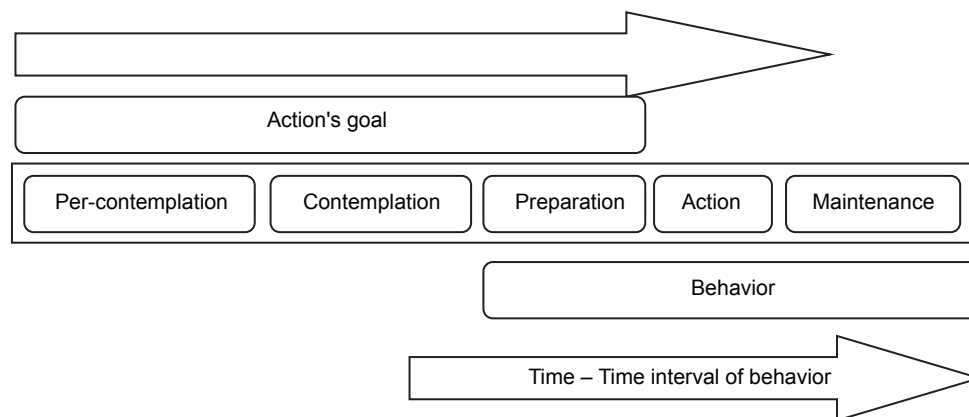


Figure 5: Time dimension as a bases of the stages of change (4, P. 429)

Although some evidence shows that the stages of change works for health related behaviors, other evidences show that TTM is not necessarily a clinical technique applicable to all sorts of behaviors because the discontinuous stages of change don't always come to pass.^[4]

Conclusion

By investigating the models of information seeking behavior, one can categorize the seekers of health information into three categories of active seekers of information, passive recipients of information and information blunders. In contrast to active information seekers who actively seek information in stressful or health threatening situation, information blunders actively and knowingly avoids gaining new information. Although active information seekers are quicker to identify the symptoms of the problem compared to information blunders, they are also a lot more anxious compared to information blunders. All of these information seeking behaviors from active to passive to blunders are among the coping mechanisms used by patients when dealing with their diseases. Selecting one

of these mechanisms depends on different factors such as age, gender, education, income, type of the disease, health literacy, family history of the disease, amount of support received from others, seriousness of the disease, duration of illness and many other factors. Therefore investigating and discovering the factors affecting health information seeking behavior of patients and identifying the models governing these behaviors can provide the health policy makers with better viewpoints.

Although because of the abundance in health information sources, it is easily possible to prevent different chronic diseases, many people still lose their lives or suffer from disease complications due to lack of proper information. Therefore informing people about the progression and prevention methods of these diseases is of outmost importance. Investigating the health information seeking behavior of patients, identifying whether the patient is an active information seeker, passive information recipient or information blunder and designing models for each of them can provide solutions for more efficient transfer of information to the patients, increasing the

self-management of the diseases and slow or stop the progress of it.

Different models investigated in this review are witnesses on the importance of the concept of health information seeking. Even with the massive number of studies in this area, the need for such studies is still growing. The concept of health information seeker has been investigated in different contexts and most studies concentrated on different diseases and ways to confront them. Every year new theories and models for the information seeking behavior of patients are introduced which are different from each other even if some have basic similarities. Therefore a comprehensive model which can cover all health information seeking behavior of patients hasn't been introduced yet. The reason behind obvious differences in the information seeking behavior of patients with different diseases (such as cancer, cardiovascular, diabetes, arthritis, smokers, etc.) is due to differences in culture, environment and the context of the disease for which the information seeking takes place.

In many third world countries, there's no model for the information seeking behavior of patients with considering their cultural characteristics and few of the models discussed above have been investigated in those countries. Since studies about health information seeking behaviors can be crucial for planning and policy making in the health care area, leading to improvement in the society's health situation, it is necessary to pay more attention to this area in third world countries.

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