

Nonadherence in Individuals on Hemodialysis: A Discussion of Three Theories to Improve Adherence

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This paper explores three theories that can guide practice when working to improve the compliance of individuals on hemodialysis. The Theory of Planned Behavior (TPB), the Common-Sense Model (CSM), and Motivational Interviewing (MI) each offer insight into behavioral change and the internal processes of individuals. Each theory seeks to empower the individual and sees client involvement as critical to patient care and improved health-related outcomes. Understanding the tenants of these three theories can guide social work practice beyond education and the dissemination of health-related information in order to improve compliance.

Theories attempt to make sense of interrelated phenomena, help explain how social problems emerge, guide design of interventions, and guide design of policy (Engel & Schutt, 2009). In this paper, three theories are discussed that can offer insight into improving adherence in individuals with end-stage renal disease (ESRD). The discussion of theory is driven by a value of patient empowerment. "Patient empowerment is centered on the belief that patients should be in control of their own care and that behavioral changes and adherence to therapies cannot be achieved unless the patient internalizes the need for self-change" (McCarley, 2009, p. 409). Empowerment is central to social work and reminds us that the client is a person, who needs to be involved in his own care, and is capable of making decisions. Though healthcare professionals in various fields hold an abundance of knowledge on subject matter, the individuals they work with have control of their lives and must make the choices to utilize that knowledge and follow recommended treatment regimens. Ajzen, Joyce, Sheikh, and Cote (2011) point out that:

Many educational campaigns especially in the health domain, are focused on imparting accurate factual information of a general nature. It is expected that once people have a good understanding of the issues, they will engage in socially or personally desirable behavior. Unfortunately, more often than not, this approach results in failure, and people continue to take unnecessary risks or engage in socially undesirable behavior. (p. 116)

Therefore, something more than education and accurate knowledge is needed to assist behavioral change in individuals.

While many treatments require adherence to strict regimens, Karalis, Wiesen, and Brommage (2007), using an example of dietary restrictions, warn healthcare providers that "resistance to change occurs because we often prescribe the diet that the patients should follow and then try to persuade them to change. We are often too 'task-oriented' and may disregard the patients and their willingness or unwillingness to change" (p. 336). The Theory of

Planned Behavior (TPB), Common Sense Model (CSM), and Motivational Interviewing (MI) are three theories that can guide social workers working with individuals to bring about the behavioral change(s) needed to improve health outcomes. The Theory of Planned Behavior will be the first of these theories reviewed.

THEORY OF PLANNED BEHAVIOR (TPB)

The Theory of Planned Behavior (TPB) is a framework for understanding, predicting, and changing human behavior. The Theory appears to have application in addressing nonadherent behavior in difficult populations. TPB is a general model that can be utilized when observing any behavior. Ajzen is the leading scholar in the field, and he and his colleagues point out:

According to the theory, intention is the immediate antecedent of behavior and is itself a function of attitude toward behavior, subjective norm, and perceived behavioral control; and these determinants follow, respectively, from beliefs about the behavior's likely consequences, about normative expectations of important others, and about the presence of factors that control behavioral performance. (Ajzen, 2012, p. 438)

Ajzen argues that thoughts and feelings lead up to decisions and therefore are helpful in explaining behavior, and that behaviors performed come from reasonable consideration of behavior-relevant information available to the individual.

TPB is a progression from the Theory of Reasoned Action (TRA) and adds the concept of the individual's degree of control over behavior; TRA was limited to behaviors in which the individual had complete volitional control (Ajzen, 1985).

People should be able to act on their intentions to the extent that they have the information, intelligence, skills, abilities, and other internal factors required to perform the behavior and to the extent that they can overcome any external obstacles that may interfere with behavioral performance. (Ajzen, 2012, p. 446)

Ajzen believes that people's intentions should be sufficient to predict behavior when control of behavior was high and that intention and control interact to affect performance of behavior.

Attitudes toward the behavior, subjective norms with respect to the behavior, and perceived control over the behavior are usually found to predict behavioral intentions with a high degree of accuracy. In turn, these intentions, in combination with perceived behavioral control, can account for a considerable proportion of variance in behavior. (Ajzen, 1991, p. 206)

Therefore, intentions, subjective norm, and perceived behavioral control guide volitional human behavior. Ajzen (2012) defined perceived behavioral control as the extent to which an individual believes they can perform a specific behavior if they choose to do so, which he acknowledged as influenced by and congruent with Bandura's work around the concept of self-efficacy (1994). This concept of perceived behavioral control is interactive with the individual's intentions such that individuals who believe they can accomplish a given behavior will have higher intention to do so, and those uncertain of their capability to perform a given behavior will be unlikely to have intention to do so (Ajzen, 2012).

Perceived behavioral control can thus influence behavioral performance indirectly by its effects of intentions to engage in the behavior and on perseverance in the face of difficulties encountered during execution. (Ajzen, 2012, p. 447)

Ajzen also believed that often in social sciences measures of actual control are not available and that perceived behavioral control can serve as a proxy and aid in the prediction of behavior. Individuals form perceived behavioral control from their beliefs about resources available, obstacles that may be present or arise, and their ability to perform.

To summarize briefly, according to the TPB, human action is guided by three kinds of considerations: readily accessible beliefs about the likely outcomes of the behavior and the evaluations of the outcome (behavioral beliefs), readily accessible beliefs about the normative expectations and actions of important referents (normative beliefs), and readily accessible beliefs about the presence of factors that may facilitate or impede performance of the behavior and the perceived power of these factors (control beliefs). (Ajzen, 2012, p. 448)

Behavioral beliefs create an attitude toward a given behavior, normative beliefs are developed based on perceived social pressures, and behavioral control is a perception based on control beliefs.

As a general rule, the more favorable the attitude and subjective norm, and the greater the perceived control, the stronger the person's intention to perform the behavior in question. (Ajzen, 2012, p. 448)

While TBP adheres to the idea that behavior is guided by beliefs and intentions, it does not assume that an individual's beliefs are rational, unbiased, or representative of reality.

Beliefs reflect the information people have in the relation to the performance of a given behavior, but this information is often inaccurate and incomplete; it may rest on faulty or irrational premises, be biased by self-serving motives, or otherwise fail to reflect reality. (Ajzen, 2012, p. 451)

According to Ajzen (2012), the theory also acknowledges that individuals do not always review their beliefs prior to behavior and that many behaviors in daily life are done without much cognitive effort.

Ajzen et al. (2011) conducted four studies to evaluate the assumption that being well informed leads to effective action. Study 1 evaluated environmental knowledge and energy conservation; Study 2, alcohol knowledge and drinking behaviors; Study 3, attending a mosque service; and Study 4, evaluated voting to support Muslim student activities. Ajzen et al. agreed with DiClemente (1989) and Fisher and Fisher (1992), stating that "knowledge is a necessary but not a sufficient condition" (p. 115). Possessing knowledge or accurate information about a specific subject alone did not effectively direct or predict behavior.

Attitudes, subjective norms, and perceptions of control were found to predict intentions to drink alcohol, to conserve energy, to attend a mosque service, and to vote support for Muslim student activities; these intentions were generally good predictors of the corresponding behavior. (Ajzen et al., 2011, p. 116)

While TPB itself does not attempt to theorize chronic illness, it does shed light on individual behaviors. With direct application to end-stage renal disease, TPB definitely highlights the demanded behavior changes of the individual in order to maximize his or her health and quality of life. Any behavior, such as medication compliance, that works to improve, maintain, or diminish one's health in relation to one's illness could be viewed through the lens of TPB. According to the Theory, an individual's beliefs and intentions guide behavior. Therefore, as healthcare professionals work with individuals regarding behaviors that need to be changed or modified, beliefs and intentions are important to discuss and consider for the greatest success in behavioral change. Information and education alone may not be sufficient for individuals to make needed changes in their routines and lives. TPB can prove useful in working with individuals to identify beliefs that may be hindering them from successful behavioral change. Perceived control of behavior, perceived obstacles, and beliefs about rewards or consequences of a given behavior can all be discussed, reviewed, supported, and/or challenged. The TPB supports that beliefs guide intentions, which in turn guide behavior. Therefore, healthcare professionals need not assume that the need to change behavior or the fear of declining health is sufficient for behavioral change.

TPB offers more in terms of describing an individual's cognition about behaviors than interventions that may be used. Healthcare professionals are left with a framework for understanding key components to behavioral change but no specific interventions to utilize. In their qualitative research with 36 people, Hwu and Yu (2006) found that "some participants identified behavioral belief as the most important factor. Once they believed that the adoption of a certain behavior (e.g., exercise, diet) would benefit their health status, they did so willingly" (p. 267).

The Theory of Planned Behavior aligns well with social work values and ethics. The individual is the expert on his life and situation. Only the individual can paint a picture of what he believes, feels capable of, considers obstacles, fears happening, is motivated to do, and his level of concern with social pressures or norms around a given behavior. Likewise, the goal of the healthcare professional is to empower clients to understand and describe their beliefs, overcome obstacles, acknowledge their strengths and networks, and assist them in the change process. Social workers advocate for clients regarding obstacles created by policies or the healthcare system and link clients to available resources that would aid in overcoming obstacles. In the next section, the Common-Sense Model (CSM) will be discussed as a useful theory in understanding illness representations and adherence behaviors.

COMMON-SENSE MODEL (CSM)

The Common-Sense Model (CSM) is another theory that focuses on behavior change in individuals with an illness. By understanding the "illness representations" that individuals generate, CSM has direct application to individuals with end-stage renal disease.

The key construct within the CSM is the idea of illness representations or "lay" beliefs about the illness. These representations integrate with existing schemata (the normative guidelines that people hold), enabling them to make sense of their symptoms and guide any coping actions. (Hale, Treharne, & Kitas, 2007, p. 904)

The model focuses on how actions are guided by illness representations created from various sources of information available to the individuals. Leventhal, Bunyamini, and Brownlee (1997) detail five components of illness representation; they are *identity*, *cause*, *timeline*, *consequences*, and *curability/controllability*.

Illness representation is described as a label given to the illness/condition and symptoms and is created from available sources of information.

The first source of information is the general pool of "lay" information already assimilated by the individual from previous social communication and cultural knowledge of the illness. The second source is information from the external social environment from perceived significant others or authoritative sources such as a doctor

or patient. Finally, the individual completes her/his illness representation by taking into account their current experience with the illness. "Current experience" refers to the somatic or symptomatic information based on current perceptions and previous experiences with the illness. Current experience also encompasses knowledge of the effectiveness of previous means used to cope with the illness. (Hagger & Orbell, 2003, p. 142)

The interpretation of this information allows the individual to create a representation of their illness. These illness representations create coping responses and thus influence health outcomes (Leventhal, Meyer, & Nerenz, 1980).

The *cause* component of CSM is described as the individual's belief about what caused or contributed to their condition. For example, an individual may believe that stress at work is the reason they are experiencing headaches.

Timeline refers to the belief constructed by the individual as to how long the condition may last.

The *consequences* of the illness for a person's life refers to beliefs regarding the impact of the illness on overall quality of life or how it may affect functional capacity (e.g., "My illness prevents me [from] doing certain things.") (Hagger & Orbell, 2003, p. 143).

The *curability/controllability* component of CSM refers to the beliefs the individual holds regarding the value and effectiveness of treatment and management actions he might take, as well as his perceived ability to perform actions needed to manage his illness.

The model proposes that the illness representation acts as a filter and interpretive schema for the available sources of information about the illness and how these guide action in response to the illness threat. Further, the model implies that the relationship is causal, that is, the illness cognition will exact an effect on coping behaviours in proportion with the perceived severity of the illness based on the representation derived from the stimuli. (Hagger & Orbell, 2003, p. 145)

Hagger and Orbell also stated that "viewing the illness as controllable was related to active coping variables such as problem-focused coping. In contrast, perceiving it as uncontrollable, chronic, and highly symptomatic was associated with avoidance and denial coping strategies" (p. 145). In an anecdotal fashion from my practice experience, individuals with end-stage renal disease feel that the majority of their illness is outside of their control.

In addition to the creation of illness representations, CSM is considered a "parallel processing model."

According to CSM, information processing occurs on two parallel pathways. The cognitive pathway involves the creation of knowledge-based view or representation of the health problem and the development of a plan for coping with its objec-

tive impact. The emotional pathway consists of emotional responses to a problem and the development of a coping plan for the management of emotional responses to the problem. (Barsevick, Whitmer, & Walker, 2001, p. 1364)

CSM acknowledges that both thoughts and emotions play a role when making decisions and carrying out behavior and that these two processes are taking place jointly.

In their meta-analysis of 45 empirical studies using CSM, Hagger and Orbell (2003) found that a moderate-to-strong relationship is present between illness cognitions, coping behaviors, and illness outcomes. Therefore, healthcare providers working with various individuals with illnesses should inquire about and evaluate the individual's perception of his illness. CSM offers clinicians key areas in which they can educate patients about their illness, challenge misinformation, encourage behaviors that aid in controlling symptoms and increasing a sense of well-being, and help them create an illness identity that is more accurate and appears more manageable.

Ward et al. (2009) developed an approach using the Common-Sense Model with cardiac patients to evaluate patients and shape concepts. This model includes a formal assessment of pain representations, discovering and addressing misconceptions, provision of information to correct misconceptions, and summarizing the discussion. This approach allows for both the patient's input and description of his illness, and the healthcare provider's sharing of knowledge and clarification of symptoms and the illness, instead of simply issuing a treatment regimen.

In their study of 79 women receiving treatment for breast cancer, Costanzo, Lutgendorf, and Roeder (2011) found that:

Women who believed their cancer had more severe consequences and those who attributed the development of cancer or the prevention of recurrence to health behaviors or stress were most likely to report improvement in diet or physical activity and reduction in alcohol use or stress. (p. 53)

Paddison, Alpass, and Stephens (2010) used the Common-Sense Model to understand diabetes-related stress and found that "people who report that their diabetes is puzzling and difficult to make sense of are more likely to experience higher distress about diabetes" (p. 47). Paddison et al. (2010) also noted that high stress related to diabetes created difficulty in the development of accurate perceptions about the illness. "In this study, general mental health and self-reported depression together explained 14% of differences in distress about diabetes. However, illness perceptions accounted for a further 15% of differences in diabetes-related distress" (Paddison et al., 2010, p. 48). Individual beliefs about illness directly impact health outcomes and the Common-Sense Model concretely offers insight into understanding these illness representations. Next, improving behavioral change through the lens of Motivational Interviewing (MI) will be discussed.

MOTIVATIONAL INTERVIEWING (MI)

Another theoretical approach utilized in research and practice to improve behavioral outcomes is Motivational Interviewing (MI). MI, while attending to the nonadherence variable in populations with end-stage renal disease, offers important elements for practice. Miller and Rollnick (1991) described five stages when considering behavior change in an individual. These stages are *pre-contemplation*, *contemplation*, *preparation*, *action*, *maintenance*, and *relapse*. *Pre-contemplation* is the time in which the individual is unaware of the need to make changes, or unwilling to make changes. Once the individual begins to consider the notion of change, he is in the *contemplation* stage. When the individual has decided that making changes is something he has desire to do and the intention to change is present, he is in the *preparation* stage. The *action* stage begins when the individual starts and continues to carry out actions or behaviors that are capable of creating change. Upon successfully progressing toward or achieving behavior change, the individual must *maintain* new behavior with consistent actions and possibly lifestyle modifications. And finally, *relapse* can occur at any point in the process and is considered a return to previous behaviors or cessation of more productive behaviors.

Along with describing the process of change, Miller and Rollnick (1991) address the need to motivate individuals to make changes. MI is a "psychological approach that aims to increase motivation to engage in treatment or a direct, client-centered counseling style for eliciting behavior change by helping patients to explore and resolve ambivalence" (Karalis & Wiesen, 2007, p. 336). Using acceptance and reflective listening, the healthcare provider expresses empathy toward the patient regarding behaviors that may be difficult to change or adopt and assists the patient in identifying non-congruence with behaviors and goals (Russell et al., 2011). Using an example of medication compliance, Russell et al. (2011) provide an example of working with a patient:

Readiness to change should also be assessed using the Importance and Ability Ruler. The provider asks "On a scale of 1 to 10, with 1 being not ready at all, and a 10 being very ready, how ready are you to make changes so that you take your medications on time every day?" When the patient responds with a number (for example, with a 6), the provider asks "Why did you choose a 6 and not a 3 (some lower number)?" When the patient provides a rationale, the provider asks, "What would it take for you to feel like you could get from a 6 to an 8?" (p. 230)

The goal of the healthcare provider is to elicit positive discussions and to encourage and support talk of change. Karalis et al. (2007) suggest four activities for the clinician that can positively influence interactions with clients: *ask non-judgmental, open-ended questions; listen carefully; set goals with the patient and not for the patient; and involve the patient in problem solving* (p. 336–337). These four activities help to build rapport with

the patient and also recognize that it is essential for the individual to be involved in the process.

Using a convenience sample of 29 patients, Russell et al. (2011) studied the use of MI for improving adherence with hemodialysis patients. The authors found that dialysis attendance, shortened treatments, and phosphorus and albumin levels were favorably influenced by MI, though the findings were not statistically significant (Russell et al., 2011). This pilot study showed promise; however, the authors recommend future studies using a randomized controlled trial design. In a systematic review of literature, Hill and Kavookjian (2012) found that the use of Motivational Interviewing was also successful in improving health outcomes and adherence in HIV-positive patients.

DISCUSSION

The Theory of Planned Behavior (TPB), the Common Sense Model (CSM), and Motivational Interviewing (MI) all provide insight into behavioral change. Several commonalities exist: listening to the individual, addressing misconceptions, educating with accurate information, understanding what the individual is willing to do, and encouraging and supporting the individual's change efforts. Ultimately, all three theories are attempting to address the same issue (behavioral change), while providing slightly different insights into the process of change in individuals. Though the insights are different, they also are compatible and dovetail to provide a larger and more in-depth view of individuals facing the need to change behaviors. Each theory also reminds and informs us that knowledge alone is not sufficient to bring about changes in behavior.

While TPB and the CSM do not offer any specific interventions, they do provide a framework for understanding the process individuals are going through and provide social workers with key concepts to explore and to potentially challenge. MI offers a more structured approach for exploring an individual's current status and willingness to make changes in behavior and focuses on encouraging the individual and motivating him to find and make the changes he is willing to do. All three theories acknowledge that change is governed by internal processes in the person. The social worker's job is to explore those internal processes with the person using empathy and non-judgmental questioning. By building rapport with the person, the social worker can challenge misconceptions and non-congruent behaviors, and support change efforts. While all three theories are congruent with social work values and ethics, two values and ethical principles are exemplified in these approaches. These are: *dignity and worth of the person* and *importance of human relationships*. The National Association of Social Workers (NASW) outlines the value the *dignity and worth of the person* as:

Social workers treat each person in a caring and respectful fashion, mindful of individual differences and cultural and ethnic diversity. Social workers promote clients' socially responsible self-

determination. Social workers seek to enhance clients' capacity and opportunity to change and to address their own needs. Social workers are cognizant of their dual responsibility to clients and to the broader society. They seek to resolve conflicts between clients' interests and the broader society's interests in a socially responsible manner consistent with the values, ethical principles, and ethical standards of the profession. (NASW, 2012)

And *importance of human relationships* as:

Social workers understand that relationships between and among people are an important vehicle for change. Social workers engage people as partners in the helping process. Social workers seek to strengthen relationships among people in a purposeful effort to promote, restore, maintain, and enhance the well-being of individuals, families, social groups, organizations, and communities. (NASW, 2012)

These values should always be guiding the social worker's practice with people and lay the foundation for successful work. Upon that foundation, theories like the Theory of Planned Behavior, Common-Sense Model, and Motivational Interviewing can be used to assist individuals in the pursuit of maximized health outcomes.

REFERENCES

- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckman (Eds.), *Action—control: From cognition to behavior* (pp. 11–39). Heidelberg: Springer.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50, 179–211.
- Ajzen, I. (2012). The theory of planned behavior. In P.A.M., Van Lange, Kruglanski, A.W., & Higgins, E.T. (Eds.), *Handbook of theories of social psychology (Vol 1)* (pp. 438–459). Thousand Oaks, CA: Sage Publications.
- Ajzen, I., Joyce, N., Sheikh, S., & Cote, N. G. (2011). Knowledge and the prediction of behavior: The role of information accuracy in the theory of planned behavior. *Basic and Applied Social Psychology*, 33, 101–117. doi:10.1080/01973533.2011.568834
- Bandura, A. (1994). *Self-efficacy*. New York: John Wiley & Sons, Inc.
- Barsevick, A. M., Whitmer, K., & Walker, L. (2001). In their own words: Using the Common Sense Model to analyze patient descriptions of cancer-related fatigue. *Oncology Nursing Forum*, 28(9), 1363–1369.
- Costanzo, E. S., Lutgendorf, S. K., & Roeder, S. L. (2011). Common-sense beliefs about cancer and health practices among women completing treatment for breast cancer. *Psycho-Oncology*, 20, 53–61.

- DiClemente, R. J. (1989). Prevention of human immunodeficiency virus infection among adolescents: The interplay of health education and public policy in the development and implementation of school-based AIDS education programs. *AIDS Education and Prevention, 1*, 70–78.
- Engle, R. J., & Schutt, R. K. (2009). *Fundamentals of social work research*. Los Angeles: Sage Publications, Inc.
- Fisher, J. D., & Fisher, W. A. (1992). Changing AIDS-risk behavior. *Psychological Bulletin, 111*, 455–474.
- Hagger, M. S., & Orbell, S. (2003). A meta-analytic review of the common-sense model of illness representation. *Psychology and Health, 18*(2), 141–184.
- Hale, E. D., Treharne, G. J., & Kitas, G. D. (2007). The common-sense model of self-regulation of health and illness: How can we use it to understand and respond to our patients' needs? *Rheumatology, 46*, 904–906.
- Hill, S., & Kavookjian, J. (2012). Motivational interviewing as a behavioral intervention to increase HAART adherence in patients who are HIV-positive: A systematic review of literature. *AIDS Care, 24*(5), 583–592. doi:10.1080/09540121.2011.630354
- Hwu, Y., & Yu, C. (2006). Exploring health behavior determinants for people with chronic illness using the constructs of planned behavior theory. *Journal of Nursing Research, 14*(4), 261–269.
- Karalis, M., Wiesen, K., & Brommage, D. (2007). Issues in renal nutrition. Motivational interviewing. *Nephrology Nursing Journal, 34*(3), 336–338.
- Leventhal, H., Benyamini, Y., & Brownlee (1997). Illness representations: Theoretical foundations. In K. J. Petrie & J. A. Weinman (Eds.), *Perceptions of health and illness* (pp. 19–45). Amsterdam: Harwood Academic.
- Leventhal, H., Meyer, D., & Nerenz, D. R. (1980). The Common Sense representation of illness danger. In S. Rachman (Ed.), *Contributions to medical psychology, Vol. 2* (pp. 17–30). New York: Pergamon Press.
- McCarley, P. (2009). Patient empowerment and Motivational Interviewing: Engaging patients to self-manage their own care. *Nephrology Nursing Journal, 36*(4), 400–413.
- Miller, W. R. & Rollnick, S. (1991). *Motivational Interviewing: Preparing people to change addictive behavior*. New York: Guilford Press.
- National Association of Social Workers (NASW). (2012). Code of ethics. Retrieved from <http://www.socialworkers.org/pubs/code/code.asp>
- Paddison, C. A. M., Alpass, F. M., & Stephens, C. V. (2010). Using the Common Sense Model of illness self-regulation to understand diabetes-related distress: The importance of being able to “make sense” of diabetes. *New Zealand Journal of Psychology, 39*(1), 45–50.
- Russell, C. L., Knowles, N., Peace, L., Cronk, N. J., Matteson, M. L., Ponferrada, L., & Herron, M. (2011). Motivational Interviewing in Dialysis Adherence Study (MIDAS). *Nephrology Nursing Journal, 38*(3), 229–236.
- Ward, S. E., Serlin, R. C., Donovan, H. S., Ameringer, S. W., Hughes, S., Peromashko, K., & Wang, K. (2009). A randomized trial of a representational intervention for cancer pain: Does targeting the dyad make a difference? *Health Psychology, 28*, 588–597.