Immunity-to-Change: Are Hidden Motives Underlying Patient Nonadherence to Chronic Disease Medications?

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Abstract: New approaches to understanding patient nonadherence to chronic disease medications are urgently needed. To explore whether patient hidden motives and their underlying assumptions contribute to nonadherence, we examined an innovative application to health care of a transformative learning process successfully used in work settings, *immunity-to-change*. Eligible participants taking at least 2 chronic disease medications, filling prescriptions at U.S. chain drugstores, wanting to continue to take medications and reporting adherence problems underwent a psychological interview focused on their medication-taking behavior as part of a market survey. Participants (n = 46) were interviewed as a construction sample to create a preliminary set of motive clusters. To test the completeness of the cluster categories, 17 additional eligible persons were interviewed. An established psychological interviewing method was used to identify hidden motives and unrecognized assumptions underlying nonadherent behavior. Hidden motives (n = 167) for nonadherence were identified and categorized into 6 clusters based on their commonality (n, %): (1) to avoid interference with other priorities (40, 24%), (2) to avoid losing control (35, 21%), (3) to avoid a negative identity (28, 17%), (4) to be one's own doctor (28, 16%), (5) to keep an arm's length relationship to one's medications or to the medical establishment (27, 16%) and (6) to avoid unpleasantness (10, 6%). Within each cluster, a set of previously unrecognized assumptions inhibiting adherence was identified. In conclusion, hidden motives, and their underlying assumptions, contributing to chronic disease medication nonadherence were identified using a transformative learning process. Research is needed to test this approach in larger general population samples.

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Over the past 50 years, there have been significant advances in the pharmacologic management of many chronic medical conditions, including hypertension, hypercholesterolemia, diabetes, depression and cardiovascular disease. Appropriate pharmacologic treatment of these diseases can reduce complications such as stroke, kidney failure, myocardial infarction that decrease patient quality of life and increase health care utilization, costs and mortality risk.[1,2] Although effective medical therapies exist for the treatment of these chronic diseases, there is a notable discrepancy between current treatment success rates and the rates thought to be achievable.[3] One key factor contributing to this incongruity between expected and actual treatment outcomes is patient nonadherence to prescribed therapies.

Medication adherence rates have been reported to range from 0% to 100% with an average 50% adherence rate for chronic medications.[4] Previously reported barriers to adherence to medications for chronic diseases such as hypertension have been summarized.[5,6] Multiple behavior change strategies to overcome these barriers and improve medication adherence have been investigated; yet, no single intervention has emerged as superior[7–11] or particularly effective. Thus, low adherence to chronic disease medications remains an important public health and clinical challenge. Contributing to the challenge, over 70% of U.S. adults with chronic diseases who self-identified themselves as taking their prescription medications reported unintentional nonadherence during the previous 6 months.[12] Therefore, a high proportion of patients who desire to follow treatment recommendations do not take their medications as prescribed. This may be due to hidden motives that compete with their desire to be adherent. Medication adherence may not be a technical challenge where the skill set necessary to take medications as prescribed is well known. Rather, it may be an adaptive challenge that requires transforming one's mindset to ensure ongoing adherence to prescribed medications.[13]

The *immunity-to-change* approach is an innovative application of a transformative learning process that has been effective in managing personal change in corporate and professional settings.[13–16] The same approach may also be useful in addressing medication nonadherence as an adaptive challenge. The *immunity-to-change* approach is based on the concept that just as the body has an immune system that ceaselessly serves to protect it, so does the mind.[16] This concept proposes that there are hidden or unconscious self-protective motives supported by underlying assumptions that prevent patients with chronic diseases from taking their medications as prescribed, although they desire to do so. This "resistance to change" functions like the body's immune system in that it seemingly protects the patient from perceived adverse psychological or physical effects resulting from taking their medications. Ironically, it may result in a deterioration of health due to inadequate treatment and disease control. Patients using current behavior change strategies who fail to achieve long-term improvements in medication adherence, and ultimately good clinical outcomes, may be beset by this kind of immunity.

Using the *immunity-to-change* approach in a sample of patients taking chronic disease medications, we explored whether behavior goals (eg, to have high medication adherence) could be linked to behaviors that work against the goal (eg, not taking medications as prescribed), hidden motives that compete with the behavior goal (eg, not wanting to interrupt one's personal schedule to take medications) and the big assumptions (eg, if there is a medication schedule, it may interfere with other activities). We primarily targeted women aged 25 to 54 years because CVS market analysis had previously demonstrated that more women than men fill prescriptions for themselves and for

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their families, and because previous research had revealed lower adherence among younger compared with older adults.[17–19] If hidden motives, and their underlying assumptions, contributing to chronic disease medication nonadherence could be identified, then research to test this approach in larger general population samples and to determine whether interventions based on this concept would overturn nonadherent mindsets and behaviors and improve health outcomes would be warranted.

METHODS

A sample of predominantly younger women taking at least 2 medications for chronic disease(s) and filling prescriptions at CVS drug stores located across the United States were identified. The sample was drawn from the large pharmacy active online databank of customers who agreed to be contacted to participate in studies. Participants were qualified through a telephone survey; those meeting criteria were invited to take part in a phone interview of about an hour's length.

For inclusion into this market survey study, participants had to (1) want to continue to take their chronic disease medications, (2) report problems staying adherent to their chronic disease medications and (3) have no rational reason for being nonadherent, such as bad side effects, or inability to pay for the drugs. Examples of participant responses for each of these inclusion domains are presented in Table 1. In an effort to identify and then test the adequacy of the hidden motive clusters, multiple waves of interviews were planned. The first wave of 46 people served as a construction sample to create a preliminary set of motive clusters. A second wave of 17 additional persons, meeting the same eligibility criteria, was interviewed in the same fashion to test for the comprehensiveness of the clusters identified in the first wave. A third wave was planned to continue testing for comprehensiveness in the event that new clusters were identified in the second wave (ie, some of the new motives could not be logically placed in one of the existing 6 clusters). This market survey study was conducted from August 1, 2009 to February 28, 2010 and was minimal risk. It was approved by the CVS Market Research Unit. Participants signed an agreement before participating in the interviews and were provided a $25 gift card in appreciation of their time. The analysis presented in this article was of anonymous data from the market survey and not considered human subjects research.

For the people who met the study inclusion criteria and agreed to participate, telephone interviews were conducted by 1 of 4 trained psychologists including 2 of the coauthors (R.K. and L.L.). The psychologists were trained by R.K. and L.L. in the process of interviewing that uncovers hidden motives. The participants were informed that they would be asked questions about their medication-taking behaviors and how they felt about it; they were blinded to the idea of uncovering hidden motives. The interviews, lasting approximately 1 hour each, used established psychological interviewing techniques and tools that have been validated in corporate settings. The interviews were partially structured using prespecified prompts to identify hidden motives and unrecognized assumptions that make nonadherent behaviors feel sensible and necessary for the person, despite their desire to take medications as prescribed[13] (see example in Box 1 and Figure 1). The information collected was used to construct individualized "immunity maps," providing feedback for the patient regarding the underlying likely cause of their nonadherent behavior[13] (example provided in Figure 1).

After completing all the interviews, the distinct hidden motives for nonadherence provided by the participants were itemized and independently reviewed by the study team members (R.L. and L.L.). Based on similar concepts and themes, the unique motives were categorized into "family resemblant" clusters, along with their related unrecognized assumptions that sustain nonadherent mindsets. The clusters and related assumptions had face validity. Although a small number of motives (less than 5%) were placed in more than 1 cluster, the vast majority were grouped into the same clusters presented in Table 2.

Finally, participants were asked what they thought it would take for them to change their assumptions. In an effort to collect a broad range of ideas that could be used to design future interventions, the participants were not asked to bound their responses by practicality or feasibility.

TABLE 1. Eligibility domains regarding medication-taking behaviors

Domains	Participant responses
Want to continue to take medications	Sample participant reported adherence goals •"To take my medications every day and not to forget them" •"To take them at the same time every day, 7 days a week, without fail" •"To always have the prescription filled, readily available" •"To take my medications every day and not to forget them"
Report problems adhering to medications	Participants responded "frequently" or "occasionally" to the question, "How often, if at all, do you find that you do not always follow through on taking your medications as prescribed, or refilling your medications?"
No rational reason for being nonadherent	Participant reported reasons for nonadherence as •"Don't know" •"Just forget" •"Things happen that interfere" •"Get too busy" (And NOT "too costly," "bad side effects" or "feel better so I stop")