

Advancing Pharmacy Practice Through Social Theory

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Abstract

Although there is a substantial role for social theory in explaining patients' health behaviors, it does not appear that pharmacists commonly use such theories to provide patient care. This paper attempts to demonstrate an explicit link between social theory and pharmacy practice. The theory of structure and agency and the practice problem of poor medication adherence (MA) in patients with HIV/AIDS are used as exemplars to illustrate such a link. Factors influencing MA were identified from qualitative studies of adherence in patients with HIV/AIDS. All factors identified were stratified into one of four categories: agency related factors that facilitate MA; agency related factors that are barriers to MA; structural factors that facilitate MA; structural factors that are barriers to MA. Stratifying MA in this manner allows pharmacists to identify clinical interventions that are targeted towards the specific cause of MA problems.

Introduction

Pharmacy does not appear to be a profession that sits comfortably upon a theoretical foundation. There are a number of practice models described in the literature but these are largely descriptions of what pharmacists do.¹⁻⁷ They do not readily serve as conceptual frameworks that explain any of the various phenomena (e.g. the component parts of recommending a self-care regimen, how they are structured and organized and the thought processes behind that organization) that constitute the practice of pharmacy. They are primarily practice change tools that describe what pharmacy may change to (e.g. pharmaceutical care) and how. Models describe, while theory explains. Theory provides a base upon which practice change can occur. As pharmacy moves towards a more patient-focused practice, having a better understanding of the theoretical underpinnings of practice will be necessary.

The most recent American Council on Pharmacy Accreditation standards for the professional degree makes numerous mentions of the role of the social sciences in pharmacy and pharmacy education.⁸ However, the term theory appears only once in a 97page document, and that single mention concerns the role of economic theory in making health care resource allocation decisions.

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Given the prominent role of theory in medical sociology and the equally established role of social science in pharmacy education and practice, this is, perhaps, surprising. Consequently, it may be a useful exercise to explore if there are ways to more explicitly tie social theory to practice. If pharmacists have a better understanding of some of the theoretical foundations that explain patient behaviors, they may be more effective in providing patient counseling and other forms of patient care.

Thus, the objective of this paper is to demonstrate that a link between theory and pharmacy practice is feasible. The role of the sociological theory of structure and agency in promoting medication adherence (MA) will be discussed. The specific practice problem of MA in HIV/AIDS will serve as an example of such a link. Practitioners will find such a link helpful to provide more effective patient care because it illustrates how patients behave, which in turn gives the pharmacist cues for which types of clinical interventions are most likely to be successful. Pharmacy educators will be able to use it develop teaching examples for students who will then graduate with a better understanding of patient behaviors and their effects on practice.

Choosing a Theory - Structure and Agency

The sheer number, diversity and complexity of theories in the social sciences may well lead practitioners to avoid any meaningful consideration of social theory. Thus, selecting a theory that pharmacists find both comprehensible and clinically applicable is vital. The concept of structure and agency appears to meet this requirement and the

relationship between these terms underlies many theories that seek to explain human behavior.

Germov has defined each of these terms and has placed them on a continuum anchored by structure at one extreme and agency at the other. (Figure 1)⁹

He defines structure as “the recurring patterns of social interaction through which people are related to each other such as social institutions and social groups.” Agency is “the ability of people, individually and collectively, to influence their own lives and the society in which they live.” Taken together, they form a useful means of explaining why people behave as they do.

Consider for example a person who has developed Type II diabetes secondary to a poor diet and a lack of exercise that have led to obesity. Considering this case from an agency perspective would mean that this individual is an autonomous being who chose to engage in unhealthy behaviors. Their clinical condition is due to their own actions.

Looking at the structural side of the case, however, would temper this perspective. The social setting a person inhabits influences their behavior. If they live in a neighborhood that does not have a grocery store with fresh fruits and vegetables, their dietary choices are not fully under their own control. If the neighborhood is unsafe, exercising outdoors may be too dangerous. Similarly, the influence of advertising and media that promote an unhealthy diet will also influence behavior and can have a negative impact on health.

The relative influences of structure and agency on any particular human behavior have long been a source of debate among sociologists.¹⁰ A strictly structural approach implies that people are little more than puppets on strings who are forced into actions due to the conditions placed upon them by their social groups and institutions. An emphasis on agency suggests that people are autonomous actors and fully responsible for creating their own life-narratives.

Consequently, although some social theories are derived primarily from either structure (e.g. Marxism) or agency (e.g. symbolic interactionism), theories will usually be situated somewhere along Germov’s continuum and not at either extreme. Most theories try to combine varying degrees of emphasis on structure or agency.

A panoply of theories with fine gradations between them strung along a continuum may well assist trained sociologists to analyze patient behaviors. Unfortunately, it is likely to confuse most pharmacists who may find a more Manichean

view of such behaviors easier to comprehend. Accordingly, in this paper, the concepts of structure and agency will be treated as if they are strictly dualistic. Although this is quite a simplistic interpretation of social theory, it makes the application of theory to practice more understandable to a practitioner with little or no training in social theories.

A Clinical Example - HIV/AIDS

Medication adherence (MA) in HIV/AIDS seems to be a suitable clinical example to illustrate the application of social theory to practice. The consequences of poor MA are clinically relevant and there is a substantial literature on MA in this disease.

In order to apply social theory to MA, it is first necessary to identify factors that promote or inhibit MA in patients with HIV/AIDS. Qualitative studies are helpful to investigate this topic since qualitative methods are appropriate for studying the subjectively lived experiences of patients with the disease and their medication taking behaviors.¹¹⁻¹⁴ The studies described below are, with one exception, qualitative ones found on Medline using the MeSH terms HIV Infections, Qualitative Research, Patient Compliance and Medication Adherence. Since this is not intended to be a systematic review of the MA literature in HIV/AIDS, the studies evaluated are intended to be only a representative sample of qualitative investigations of MA in HIV/AIDS in both developed and developing world settings. The heterogeneity of the literature reviewed is actually advantageous if it can be shown that theory links well to practice across practice settings and patient populations.

Barriers and Facilitators to MA

Wilson et al. found that a person’s state of mind has an effect on MA.¹⁵ In turn, context and conditions affect state of mind. Contextual factors included being unsure if a problem was caused by the drug or the disease and being confused at how to interpret the various medical markers of disease progression/regression. If a problem is attributed to a drug, it will affect the person’s state of mind. Conditions including a person’s self-identity, illness beliefs, their concept of time and the impact of the disease and medication on their lifestyle also influence state of mind. A person’s beliefs about the disease, science and medication are likewise critical factors. Since state of mind can be volatile, patient decisions about adherence can change quickly and MA can literally change dose by dose.

Konkle-Parker et al. categorized both barriers and facilitators into factors related to the patient, environment and provider-patient relationship.¹⁶ Overall, barriers were found to include the burden of planning, denial of one’s health status, life

stress, medication issues such as pill burden and side effects and social stigma. Facilitators to MA were found to include acceptance of the diagnosis, being aware of the consequences of MA, prayer/spirituality and having a family/social support network.

Wolf et al. found that low literacy was significantly related to MA.¹⁷ Patients reading at below a ninth-grade level were less likely to know how and when to take their medication.

In a small study of the lived experience of HIV/AIDS in women of color, Wayson -Locher et al. found that medication side effects, personal issues of motivation or avoidance related to their medication and feeling tethered to medication were all important factors in MA.¹⁸ Issues of trust and belief in both one's medications and one's providers were also found to be important.

In a study of the effects of stigma on MA in HIV/AIDS, Rintamaki et al. found that subjects reported concern for HIV/AIDS related stigmatization and that such concerns affected MA.¹⁹ Stigma concerns were found to influence a person's mental health, which in turn affected their understanding of treatment, their self-efficacy and ultimately MA.

Studies done in the developing world reflect different patient populations and lived experiences of people with HIV/AIDS but nevertheless, barriers and facilitators to MA are often similar to those found in the developed world.

In a study of Peruvian men with HIV/AIDS, Curioso et al. found a number of facilitators to MA including patient related factors (seeing positive results from therapy, incorporating medication taking into daily life), positive beliefs about medication (belief in the efficacy of medications, understanding the need for adherence), acceptable medication schedules (using compliance aids, having a fixed routine for medication taking, support and reminder systems) and other factors (positive relationships with health care providers, having a simple drug regimen).²⁰ Barriers to MA were equally diverse and included patient factors (simply forgetting to take pills, fear of stigma, high cost of therapy), negative beliefs about medication (side effects, medications are harmful or ineffective), difficult medication schedule (dietary requirements with some pills, being away from home, being too busy) and other factors (mistrust in providers, feeling healthy, feeling hopeless, pill size, continued substance abuse).

Two studies of MA in Zambian women found that feelings of hopelessness inhibit MA. Murray et al. uncovered barriers to

MA some of which were similar to ones found in the developed world and some which were culturally specific.²¹ Concerns for side effects and stigma were similar to other studies. However, Zambian women did not have any concept of what it means to have a chronic disease requiring life-long medication. Other locally specific barriers included fear of physical harm from their husbands (who usually felt that they themselves were not affected by HIV/AIDS), local rumors about the dangers of the medications, not having adequate food to stave off the hunger pains caused by the medications and a pervasive sense of hopelessness and fatalism.

Grant et al. found that Zambian women are affected by a variety of structural, economic, cultural and personal factors that influence MA.²² A positive outlook, a social support system, having a reminder system for taking medication, goals for the future and a desire for financial independence were all found to be facilitators for MA. Conversely, medication side effects, financial concerns and food insecurity were barriers to MA.

Several studies in China likewise show reasonably good replication of findings with other research on MA barriers and facilitators. Chen et al. found the strongest predictor of MA was an absolute faith in one's physician.²³ Even in the face of severe medication side effects that would be expected to result in non-adherence, patients with faith in their physicians were likely to remain adherent.

In a study performed in Southern China, Sabin et al. identified several themes that affect MA.²⁴ Stigma was widely found to have the greatest impact on MA and respondents were greatly concerned that family members or co-workers would discover their HIV status if they took medication in front of them. They also reported fears their co-workers would place a courtesy stigma against their family members. Economic woes and mental health issues, primarily depression, fear of death, social isolation and a lack of family support were other barriers noted.

Starks et al. studied MA in HIV positive patients in Beijing.²⁵ Facilitators for MA were found to include being motivated (seeing positive medication results, a strong will to live, a peer support network and a sense of obligation to family) and using proximal cues to action (self-discipline in taking medications, use of a pill reminder box, having family members or partners remind them to take medication). Barriers were similar to studies done elsewhere and included stigma, access (costs, transportation problems), knowledge (fear of side effects, inadequate patient education about medications), and a lack of proximal cues to action (irregular schedules, difficulty taking medication when away from

home).

Finally, one study examined MA in the rather unique patient sub-group of those who were identified as 100% adherent to drug therapy.²⁶ Such complete adherence was found to be related to themes of drug regimen (tailoring medications to fit one's lifestyle, accepting limits and tradeoffs between drug side effects and positive clinical response, acknowledging the medication's effects in maintaining health), self (owning one's problems and solutions, investing in oneself, adopting a realistic outlook) and the environment (recognizing and using a support system, identifying and using personalized tools for adherence, having a positive partnership with the physician). Since this study was in 100% adherent people, no investigation into barriers to MA was possible.

Structure, Agency, Facilitators and Barriers

Although the number and variety of factors that affect MA may appear daunting, they can be empirically stratified into four categories: agency related factors that facilitate MA; agency related factors that are barriers to MA; structural factors that facilitate MA; structural factors that are barriers to MA. Table 1 provides one such stratification. Each of the MA factors described above (e.g. attitude or access) has been assigned to one of the four categories.

Because studies usually identified factors as facilitating or inhibiting MA, assigning factors to the categories of facilitator or barrier was straightforward. Assigning factors into the appropriate category of structure or agency was less clear-cut.

Factors were empirically assigned to the structure or agency categories using Germov's definitions.⁹ Those considered to be primarily under one's individual control (e.g. attitudes or knowledge about one's illness and medications) were stratified into agency categories, while factors considered to be primarily outside one's individual control (e.g. access to care or stigma) were stratified into structural categories.

Two concerns may be noted when assigning categories: (i) deciding if a factor clearly fits into a particular one; (ii) the same factor being presented in the literature from both positive and negative perspectives and thus reasonably fitting into more than one category.

Deciding if a factor is clearly under a person's control (agency category) or not (structural category) requires judgment and reasonable people may disagree. For example, in Table 1, being busy is assigned to the category of agency related barriers under the assumption that people can choose how to spend their time. Others however could consider being busy

to be a structural barrier since time requirements for work or childcare may be beyond an individual's control.

Being faced with this quandary is less problematic that it appears. As will be discussed below, agency related MA problems usually require a different type of pharmacist's intervention than structural ones. If one assigns a factor to a structural category and a structurally focused intervention does not solve the problem, then one may reasonably move that factor to the agency category and try a different kind of intervention when next faced with that problem.

The second concern is that in some cases, assigning a factor to a particular category depends on how it was described in the literature. Consider the example of patient-provider relationships. Participants in the study by Curioso et al. stated they had a positive relationship with their providers that promoted MA while the participants in the study by Wayson-Locher et al. stated that a lack of trust in their providers had a negative impact on MA.^{18,20} Consequently, the concept of "trust" can be placed into both the facilitator and barrier categories depending on the perspective used in the original study.

Merging Theory and Practice

Pharmacists faced with patients who have MA problems may often be at a loss for what to do next. Absent any deeper exploration into the causes of MA and how such causes fit into the structure agency theory, pharmacists often can do little more than provide standard patient counseling advising patients to adhere to therapy.

Similarly, pharmacy faculty who teach patient counseling for MA will be better able to teach students more patient specific patient management skills if they are aware of how MA fits with social theory. They will be able to teach students how to identify appropriate counseling interventions depending on which structure or agency category various MA factors are assigned to.

Table 1 suggests that many MA factors in HIV/AIDS are agency related and are both amenable to change and within the pharmacist's scope of practice. It is, however, necessary for a pharmacist dealing with MA problems in such patients to inquire more deeply into the causes of such MA in order to provide an appropriate clinical intervention. A patient who has a sense of fatalism about their illness will require a different pharmacist's intervention than one who simply believes they are too busy to take their medications correctly. Generic patient counseling and exhortations to take one's medications lest a poor clinical outcome result are unlikely to be effective since such types of interventions may not be related to the underlying cause of poor MA.

Structural MA problems appear to be both less common and more variably related to the pharmacist's purview. Mental health, economic and access related MA problems, for example, require a pharmacist to refer the patient to a more appropriate provider.

Table 2 lists possible pharmacist's interventions that would be expected to be beneficial according to the category. It is apparent that interventions can be targeted towards specific MA problems once each MA factor has been appropriately categorized.

Limitations

Several limitations to the arguments raised in this paper may be identified.

The literature used to link theory to practice was intended to be a representative sampling of the kinds of studies found in the MA in HIV/AIDS literature. A systematic review may reveal additional and important MA factors not considered in this paper.

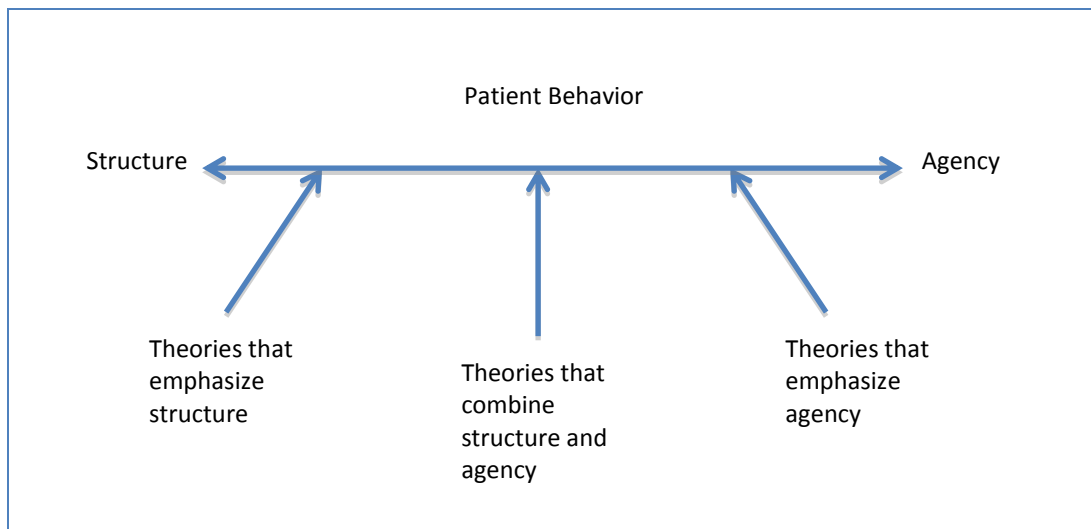
As noted, assigning each MA factor into a category was done empirically. A more rigorous method could have been to perform a content analysis on the literature cited in order to identify MA factors and their relationships to structure and agency more formally.²⁷ This would probably result in a smaller number of coherently and thematically related factors rather than the longer list of less precise ones identified here. A smaller number of factors would be advantageous for pharmacists who may find that trying to

identify one out of a long list of possible MA factors is difficult and time consuming.

Conclusions

Ideally, this paper will serve as a "proof of concept" that social theory can be related to practice problems in such a way as to assist pharmacists in providing high quality patient care services.

Additional work is required in several areas. Can different social theories be employed similarly to the way that structure and agency theory was used in this paper? Are problems other than MA or diseases other than HIV/AIDS suitable clinical problems that are also addressable by linking theory and practice? Pending such confirmatory work however, there does appear to be a link between social theory and practice that would be of help to pharmacists providing patient care.



**Figure 1 – Structure-Agency Continuum
(Modified from Germov)**

Agency Related Facilitators	Agency Related Barriers	Structural Facilitators	Structural Barriers
Manageable medication regimen/Belief medications work/Low pill burden/Few side effects	Low literacy	Adequate social support system/Having another to live for	Feelings of stigma/Lack of confidentiality/ Lack of trust in medications or providers
Positive but realistic attitude/Motivation to live and succeed	Loss of hope/Fatalism	Good efficacy of medications	Mental health problems
Use of reminders, adherence aids/Cues to action	Denial/Feeling healthy/Uncertainty about disease or treatment/Ideology or belief system		Economic problems
Positive partnership with providers	Fear of domestic violence/Abuse		Poor access to care
Adequate knowledge of disease, medications, side effect management, need for adherence	No cultural framework for chronic illness or medication use		Food insecurity/Prescribed dietary changes
Making taking medications a routine activity	Feeling one is too busy/Simply forgetting/Heavy planning burden		
Prayer/Spirituality	Continued substance abuse		
Good self-efficacy	Belief that medications are harmful/Fear of side effects/High pill burden/Complex medication regimen		

Table 1 – Agency and Structural Factors That Facilitate or Inhibit Medication Adherence

Interventions to maintain agency related facilitators	<ul style="list-style-type: none"> • Design medication regimens with few side effects, low pill burden • Provide patient education on disease, medication, side effects, need for MA • Provide positive reinforcement on medication efficacy and safety • Provide motivation for MA. Maintain patient self-efficacy on MA. • Be empathetic and develop partnership with patient • Provide MA aids and cues to action. Design medication regimens around patient's lifestyle • Encourage patient's faith and spirituality when appropriate
Interventions to improve agency related barriers	<ul style="list-style-type: none"> • Provide or refer to training program in health literacy • Provide emotional support or referral to expert for loss of hope, denial, cultural practices or belief systems that impair MA • Referral to domestic abuse support services • Provide MA aids and cues to action. Design medication regimens around patient's lifestyle • Refer to substance abuse program • Provide positive reinforcement on medication efficacy and safety
Interventions to maintain structure related facilitators	<ul style="list-style-type: none"> • Refer to social services • Design optimally efficacious drug regimen
Interventions to improve structure related barriers	<ul style="list-style-type: none"> • Be empathetic and develop partnership with patient. Promote trust and confidentiality in patient relationship. • Refer to mental health services • Refer to social services • Refer to nutrition services

Table 2 – Possible Pharmacist's Interventions According to MA Factors

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