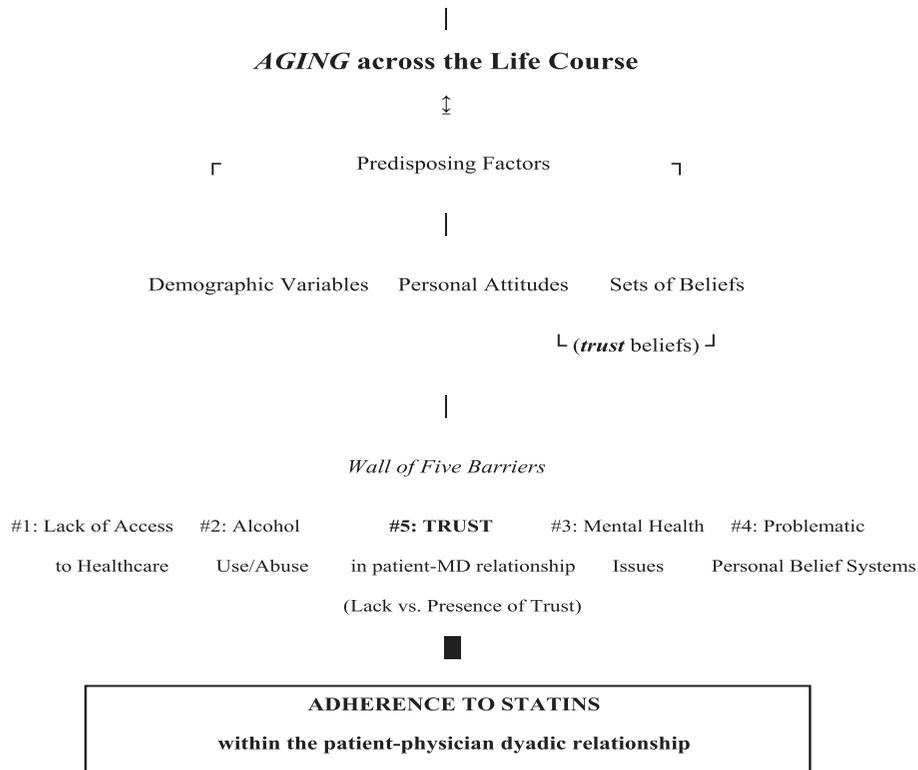


The Dyadic Nature of Chronic Health Conditions



HEALTH PSYCHOLOGY | NEW PERSPECTIVE

The Andersen–Newman Behavioral Model of Health Service Use as a conceptual basis for understanding patient behavior within the patient–physician dyad: The influence of trust on adherence to statins in older people living with HIV and cardiovascular disease

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The Andersen–Newman Behavioral Model of Health Service Use as a conceptual basis for understanding patient behavior within the patient–physician dyad: The influence of trust on adherence to statins in older people living with HIV and cardiovascular disease

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Abstract: The observation that “(d)rugs don’t work in patients who don’t take them” seems obvious; however, for older people living with HIV and cardiovascular disease (CVD), the potential for taking large numbers of medications on a regular basis may present as an overwhelming task, particularly as HIV and CVD progress and worsen over time. The extent to which older people living with HIV and CVD follow medication schedules for the treatment of these chronic health conditions is not understood well, and myriad questions exist with regard to medication adherence and older people living with HIV and CVD. For instance, do older people living with HIV and CVD take all medications as prescribed? Does this group prioritize which medications to take, perhaps demonstrating a preference for taking antiretroviral medications for the treatment of HIV as opposed to statins for the treatment of CVD? In the process of answering these and other questions, recognizing the individual and his or her attitudes and behaviors within the context of the dyadic relationship shared between patient and physician is paramount. Developing a more thorough understanding of this dyadic



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PUBLIC INTEREST STATEMENT

As people live longer, they are increasingly likely to develop one or more chronic health conditions. These can include (but are not limited to) cardiac issues (like high blood pressure or high cholesterol or both), diabetes mellitus, infections (like HIV), and respiratory issues. Part of what helps people to live with these conditions is the use of appropriate medications. Without the medications, an individual might not live as long as he or she would otherwise. Such is the case for older adults who have both HIV and cardiovascular disease. If these individuals do not take their medications, then they are likely to have a shorter life span than they might have by taking medications as prescribed by the physician. What causes someone to want to take his or her medications, though? This paper suggests that patients who trust their physicians are more likely to take medications as prescribed.

relationship allows for a better grasp of the context within which medication adherence occurs for older people living with HIV and CVD. That said, because of the ability to lend itself to an understanding of human behavior, human development, and psychology, the Andersen and Newman Behavioral Model of Health Service Use provides a worthwhile conceptual basis for beginning to answer these questions.

Subjects: Arts & Humanities; Medicine; Social Sciences

Keywords: adherence; CVD; dyadic relationship; HIV and AIDS; older adults; trust

1. Appropriateness of the Andersen–Newman Behavioral Model of Health Service Use

The Andersen–Newman Behavioral Model of Health Service Use (Andersen, 1995; Andersen & Newman, 1973; Bradley et al., 2002) is appropriate as a conceptual basis for understanding human behavior, specifically that of the patient within the patient–physician relationship. Whereas this conceptual model may appear at first as primarily representative of sociological constructs (e.g. systems, the family), the original model (Andersen, 1968) evolved throughout the years to include concepts and constructs that are representative of psychology (e.g. behaviors of the individual, feedback loops) as well as public health and healthcare (e.g. resources) (Andersen & Newman, 2005). Compared to other psychological models, the Andersen–Newman Behavioral Model of Health Service Use is appropriate to the discussion within this paper because the model not only examines human behavior (e.g. the ability to trust) but also lends itself to the expansion on this behavior (e.g. by applying trust to adherence to medications) as well as an examination of the dyad in which the behavior and its application occur: that of the patient–physician relationship. Over time the model has gone from focusing on the family as the unit of analysis to focusing on the individual as the unit of analysis (Andersen & Newman, 2005). As a result, an entirely new perspective is created.

In an attempt to gain insight into the context within which adherence occurs for older people living with HIV and cardiovascular disease (CVD), consideration of pertinent theoretical concepts is useful. Here, the Andersen–Newman Behavioral Model of Health Service Use is relevant, particularly regarding the broader context of older people living with HIV and CVD as aging across the life course. This theoretical model is relevant to the consideration of trust in relation to adherence because recent iterations of this theoretical framework examine psychological and psychosocial factors as they describe attitudes toward healthcare providers as well as beliefs about the healthcare system (Andersen & Newman, 2005; Bradley et al., 2002).

Furthermore, the model lends itself to the study of the influence of physician trust on adherence to statins in older people living with HIV and CVD in that the model includes predisposing factors such as demographic variables (e.g. age, education, occupation) as well as personal attitudes and sets of beliefs about health services and/or knowledge about diseases (Andersen & Newman, 2005; Bradley et al., 2002). The notion of “trust” and the presence of trust in one’s physician are related to predisposing factors surrounding one’s attitudes and beliefs about healthcare services and the physicians who provide these services.

2. The dyadic context of chronic health conditions

Individual lives are dynamic and change with the aging process. The same may be said of the health of individuals as they age and view health with increasing importance over the life course. Aging and health occur within the context of human relationships, specifically within the dyadic relationships attributed to couples, family members, and friends. This relationship allows for the ability of each member of the dyad to confront and overcome challenges associated with the temporal process of living with and managing chronic health conditions (Berg & Upchurch, 2007; Leventhal, Brissette, & Leventhal, 2003; Sebern & Woda, 2012; Sebern & Whitlatch, 2007; Whitlatch, Judge, Zarit, & Femia, 2006). The ideas of dyadic coping and the sharing of stressors between two individuals within a

relationship (Berg & Upchurch, 2007) speak to the notion that the burden of chronic health conditions may be shared, even between patient and physician (Halbesleben & Rathert, 2008); however, each individual within the dyadic relationship responds differently to the stressors that characterize chronic illness.

Whereas the dyadic relationship within the context of chronic healthcare conditions has yet to be tested more thoroughly, research suggests that *trust* is central to the success of dyadic relationships (Lewicki, 2006). This is particularly the case because the dyadic relationship provides for the “power of the situation”, in which both individuals within the dyadic relationship share the desire to understand how behaviors (e.g. adherence to statins) are influenced not only by properties of each individual (e.g. as patient or physician) but also by the elements of the situation (e.g. whether trust is/not present and shared). The dyadic relationship shared between patient and physician is no exception.

3. Scope and significance of aging, CVD, and HIV

CVD is the leading cause of death within the US (Popelka, 2005) and the number one cause of illness and death for individuals 65 years old or older (American Heart Association, 2001). Nearly 40.1% of all deaths in the US at the end of the 20th century were due to CVD (American Heart Association, 2001; Popelka, 2005). This level of impact is critical insofar as high levels of cholesterol and other lipids in the blood are among the most modifiable risk factors for CVD (American Heart Association, 2001; Expert Panel on Detection, Evaluation, and Treatment of High Cholesterol in Adults, 2001; National Institutes of Health, 2001).

Aging with HIV amidst an array of other medically complex health conditions such as CVD is not uncommon in modern society. Particularly because people diagnosed with HIV are living longer (Fultz et al., 2006; Johnson et al., 2012; Stewart & Weinberg, 2010) with the presence of co-morbidities such as CVD, age should be considered when discussing HIV (Justice, Erdos, et al., 2006; Justice, Lasky, et al., 2006). Likewise, statistically significant associations exist between antiretroviral therapy and CVD (Crane, Van Rompaey, & Kitahata, 2006; Johnson et al., 2012; Palacios & Santos, 2007); therefore, just as failure to adhere to antiretroviral therapy is detrimental to older people living with HIV, failure to adhere to statins for treatment of CVD may prove injurious to this same group of people (Kamin & Grinspoon, 2005; Sudano et al., 2006). Whereas no gold standard exists for measuring adherence (Braithwaite et al., 2007), arguably the treatment of CVD with statins works most effectively if older adults *take* these medications [Koop (2005) as quoted in Osterberg and Blaschke (2005)].

Regarding adherence in older people living with HIV and CVD, “good data” exist on the use of antiretroviral therapy among older people living with HIV (Anderson, Fortinsky, Pare, & Song, 2010; Johnson, Heckman, Hansen, Kochman, & Sikkema, 2009); however, few data are available as pertain to statin medication regimens. Even less information is available with regard to the influence of the patient–physician relationship on patient trust and adherence to statins in older people living with HIV and CVD. Arguably, when the dyadic relationship shared between the patient and physician is characterized by trust, adherence to medications may occur to a greater extent even though medication non-adherence is considered multifactorial (Bosworth, 2010; Jin, Sklar, Oh, & Li, 2008). Likewise, as a result of a trusting patient–physician relationship, fewer barriers to healthcare services may manifest themselves (as strongly) during the course of a patient’s lifetime.

4. Overview of barriers to medication adherence

Along with predisposing factors, barriers exist with regard to medication adherence (i.e. statin adherence). At least five barriers are pertinent to an examination of the trust placed in a patient’s physician and adherence to statins in older people living with HIV and CVD. Below is an overview of the five barriers. Whereas a separate paper could be dedicated to each of these barriers, for purposes of the present discussion, particular attention is given to the fifth and last barrier: (lack of) trust within the patient–physician relationship. The following are five barriers that may hinder or prevent consistent adherence to statins for older people living with HIV and CVD and are similar to

those which also hinder or prevent steady adherence to antiretroviral therapy for the treatment of HIV.

4.1. Barrier number 1: access to healthcare

Perhaps one of the greatest barriers is situated within the context of the disparities known to characterize healthcare within the United States. Health inequalities throughout the life course frequently begin at early ages, when precarious circumstances expose young people to acute events and chronic stressors while simultaneously providing fewer resources with which to control and regulate these negative influences on one's overall health (Horwitz, 2005). Despite advances in healthcare within the US, difficulty in accessing healthcare persists for older people with limited resources (Burbank, 2006; Emler, 2004).

4.2. Barrier number 2: alcohol use and/or abuse

Few factors explicitly predict poor adherence to medications (e.g. antiretroviral therapy, statins) as accurately as alcohol use and/or abuse (Barclay et al., 2007). This is particularly the case for HIV-positive individuals (Kraemer et al., 2006).

4.3. Barrier number 3: mental health issues

Issues affecting one's mental health negatively impact one's long-term health status (Hatch, 2005; Johnson et al., 2006; Williams, 2005) and adherence to medications (Johnson et al., 2006) such as statins. Mental health conditions including affective disorders (Carrico et al., 2007) and depression (Jin et al., 2008; Petrovic, 2006; Reynolds et al., 2004) or depressive symptoms (Cha, Erlen, Kim, Sereika, & Caruthers, 2007; Trzynka & Erlen, 2004) influence one's ability to cope with co-morbidities such as HIV and CVD. In turn, the ability to cope affects attitudes and the practice of consistent adherence to medication schedules (Cha et al., 2007; Emler, 2006, 2007; Jin et al., 2008; Johnson et al., 2006, 2007; Lewis, Erlen, DeVito Dabbs, Breneman, & Cook, 2006; Reynolds et al., 2004).

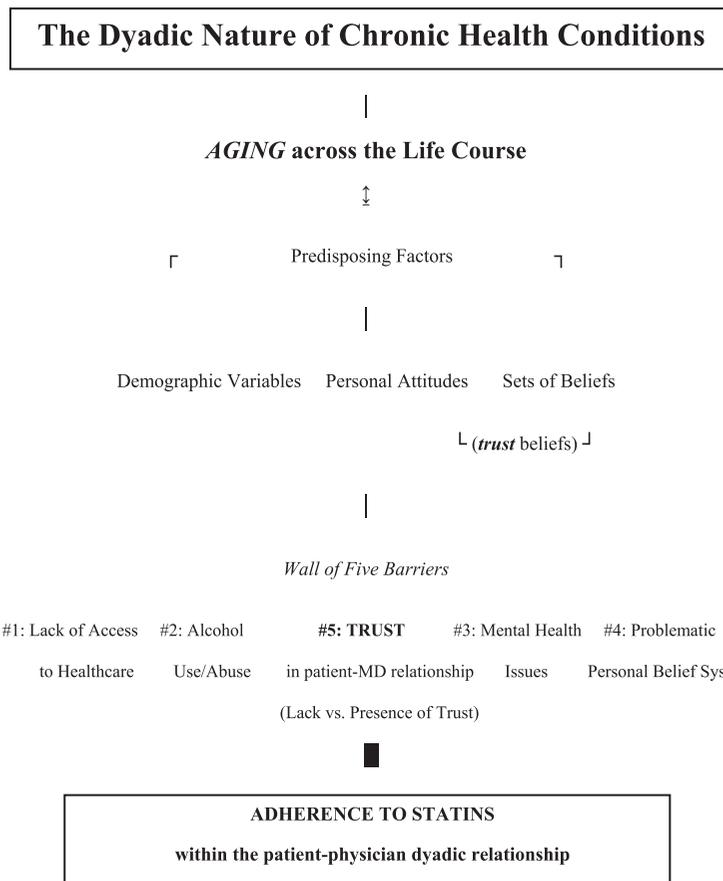
4.4. Barrier number 4: personal belief systems

Adherence is moderated by factors that are culturally sensitive and/or multilevel in scope (Jin et al., 2008; Nicca, Moody, Elzi, & Spirig, 2007). Included here are personal belief systems, as these hold the potential to influence adherence to statins, particularly for older people living with HIV and CVD. Does an individual believe that a medication will be effective in treating CVD? Is another means of treatment preferred? When levels of adherence are sub-therapeutic, consideration should be given to individual beliefs about medications (Jin et al., 2008; Kalichman et al., 2006; Reynolds et al., 2004) and the feasibility of complying with these medications (Fletcher et al., 2005; Kalia et al., 2006; Reynolds et al., 2004), as individuals may doubt their abilities to adhere to medications regularly (Jin et al., 2008; Johnson et al., 2006; Kalia et al., 2006).

4.5. Barrier number 5: lack of trust within the patient–physician relationship

Missing from the aforementioned barriers to adherence is *trust*. Patient trust is difficult to define, even within a single discipline (Hall, Camacho, Dugan, & Balkrishnan, 2002). The ability to trust may be directed at individuals, society, and/or the systems that constitute society (e.g. the healthcare system). Varying amounts of trust may be present. For instance, patients may trust their own physicians and yet distrust the government (Whetten et al., 2006) or the healthcare system (Armstrong et al., 2006; Corbie-Smith & Ford, 2006). Research suggests that individuals living with HIV and who trust their healthcare providers follow through with out-patient visits on a more frequent basis, make fewer visits to the Emergency Department, and adhere to medication regimens while demonstrating improved mental and physical health as compared to individuals living with HIV and who distrust their healthcare providers (Johnson et al., 2012; Whetten et al., 2006). Thus, higher levels of trust in one's physician may facilitate adherence to medications (Fiscella et al., 2004; Haskard Zolnierek & DiMatteo, 2009; Johnson et al., 2012) such as statins for older people living with HIV and CVD.

Figure 1. The dyadic relationship and aging across the life course.



5. The dyadic relationship and aging across the life course

As can be seen by means of the schematic (Figure 1), aging across the life course provides the background against which the conceptual model takes place. Aging across the life course influences predisposing factors such as demographic variables (e.g. age, education and income, race, and ethnicity), personal attitudes, and sets of beliefs with regard to health services and knowledge about diseases. Likewise, predisposing factors influence the aging process. Trust beliefs as well as the presence or lack of trust in the patient–physician relationship are located conceptually within predisposing factors such as personal attitudes and beliefs; in turn, then, trust may influence adherence to statin medications.

6. Concluding thoughts

Additional research is needed to examine in greater depth the nature of trust within the dyadic relationship shared between patient and physician, specifically as this relationship pertains to older adults living with chronic health conditions such as HIV and CVD. Future research will seek to explore the patient–physician relationship in this regard as well as the relationship shared between patients and other members of the healthcare team, including nurses, nurse practitioners, social workers, and surgeons. Opportunity exists for research that examines the place of chronological age in relation to the progression of HIV to AIDS. Likewise, the meaning of “trust” as it pertains to individuals within dyadic relationships of all sorts should be examined in more detail, perhaps via the use of qualitative (e.g. phenomenological) studies that aim to understand the lived experience of a person, particularly across the life course and through one’s own development.

That said, one study pertaining to adherence and trust suggests that age matters, as does HIV status; however, age and HIV status do not necessarily matter *together* (Petrovic, 2012). Likewise,

adherence and trust do not appear to be directly related to one another but are related instead to age and HIV status. This finding suggests that adherence and trust do not appear to be linked (Petrovic, 2012). For the time being, a working definition of “trust” entails an individual’s belief in the veracity of treatment as prescribed by his or her physician. Not only this, but the individual believes that his or her best interests are acknowledged and then accepted as well as protected by the physician. In this way, the beginning of a lasting patient–physician relationship forms and subsequently benefits the patient with regard to decreased morbidity and mortality as brought about by chronic health conditions left unchecked by appropriate treatment.

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Competing interests

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