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# THE ROLE OF ACTING PARTICIPANTS, DEFINITIONS, AND THE DETERMINING FACTORS OF ADHERENCE TO TREATMENT FROM TWO PERSPECTIVES: THE BIOMEDICAL MODEL AND THE CHRONIC CARE MODEL

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# The Role of Acting Participants, Definitions, and the Determining Factors of Adherence to Treatment from Two Perspectives: The Biomedical Model and the Chronic Care Model

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# **Abstract**

Management of chronic illness implies significant changing the lifestyle, taking medication, watching the diet, introducing and maintaining exercise in daily life, etc. These actions represent elements of adherence to treatment and they reflect the responsibility of patient's participation to healthcare. The increase in adherence to treatment and in the quality of care, implicitly, may depend on allotting the resources necessary within therapeutic effort and on the effectiveness of the partnership between patient and doctor. Assuming the medical decision as a team may lead to solving the issue of non-adherence (Armstrong, 2014). Whereas the values of the functional parameters of the body represent an objective measurement of treatment efficiency and to some extent of adherence to it, implicitly, assessing the patient's lifestyle involves understanding his experience, which is governed by subjectivity. This article has the following objectives: (1) to analyze the definitions of adherence to treatment from a biomedical perspective and from the perspective of Chronic Care Model (CCM); (2) to identify the characteristics specific to the roles of acting participants to healthcare and to analyze the modifications of roles by the choice of theoretical model and (3) to identify the determining factors of adherence to treatment.

# **Keywords:**

Adherence, biomedical model, chronic care model, participants' role, determining factors;

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## 1. Introduction

The largest proportion of mortality due to non-communicable diseases is caused by cardiovascular diseases (48%), followed by cancers (21%) and chronic respiratory diseases (12%) (WHO, 2012). Alcohol and tobacco consumption, high body mass index, hypercholesterolemia, high blood glucose, low fruit and vegetable intake, and physical inactivity account for 61% of cardiovascular deaths (WHO, 2009). Management of chronic illness involves changing the lifestyle, taking the medication, watching the diet, introducing and maintaining exercise in daily life, etc. The improvement of patient adherence to treatment and, therefore, of the quality of care, may depend on allotting the resources necessary within therapeutic effort and on the quality of the partnership between patient and doctor. Shared decision making within doctor patient relationship may lead to solving the issue of non-adherence (Armstrong, 2014). Whereas the values of the functional body parameters represent an objective measurement of treatment efficiency and to some extent of patient adherence to it, the assessment of patient lifestyle implies that doctors' understand patient experience, which is a process governed by subjectivity. First, we first discuss patients' adherence in the context of biomedical paradigm of health care. Second, we discuss understanding of patient adherence in the context of Chronic Care Model (CCM). Third, we briefly outline the factors that influence patient adherence and show how CCM helps us to improve patient adherence to therapeutic approaches thorough complex social interventions.

# I. Patient adherence in the biomedical paradigm of health care

In the biomedical paradigm health is defined in a negative by diagnosing diseases, which is a departure of certain biological parameters from normal. This paradigm does not take into consideration patients' subjective experiences on their self-perceived health status or of certain interactions between the patients and doctors or with significant others, in a the health care context. The preoccupation for the content and utility of patients' experience and expertise is not part of the biomedical paradigm of care and the definition of patient adherence is oriented towards reaching certain biomedical outcomes that may improve patient health.

In this paradigm adherence or compliance represents the extent to which patients' behaviour is oriented toward improving or maintaining the health status, and patients have to comply with therapeutic recommendations as prescribed by doctors (Haynes, Taylor, and Sackett, 1978). This definition implies that patients are passive recipients of care.

The roles fulfilled by both patients and doctors are social constructs, characterized by the rights and obligations on both sides. These characteristics are in agreement with and, derived from socially accepted norms. In this vein, diseases can be seen as a form of social deviance, because they disturb the normal social function of the individual (Parsons, 1951). The sick person does not hold control over the medical decision-making (Whitsitt, 2010) and, therefore patients cannot be seen responsible for health care decisions; thus, they are exempted from fulfilling normal social roles during the illness (Young, 2004; Armstrong, 2014). Diseases are socially undesirable and they are external to the patient. Sick persons' obligation is to get cured, by appealing to doctors' competent help. Doctors are invested with the social control function within this system of roles and they determine the legitimacy of illnesses (Cockerham, 2000) and the ways in which illnesses can be corrected, implicitly. Doctors' interventions are also exterior to patients. Within the doctor-patient interaction, the exercise of roles depends on social expectations related to sick persons. In the biomedical paradigm, the main patients' expectation is partial or total improvement of health status, while doctors' expectation is that patients comply with their therapeutic recommendations. These expectations imply as well lifestyle changes such as smoking cessation, reduction of alcohol intake, dietary changes and physical activity. Therefore these recommendations become in the context of patient compliance, forms of social control exercised by medical profession (Conrad, 1979), and patients' agreement constitutes forms of conformation with social norms. Ignoring the recommendations as prescribed by doctors or non-compliance represents, in this context, a form of social deviance (Fineman, 1991).

The analysis of adherence as an outcome of healthcare has the advantage of objectively measuring the indicators that reflect patient health status, but it limits the understanding of the complex process through which healthcare outcomes are reached (Bosworth et al., 2006). Within the doctor – patient interaction, doctors play a set of roles that

include the central role of expert evaluator of patients' health and other additional or subsidiary roles such as that of educators or facilitators. Identifying the problem, the working hypotheses, a plan for intervention, a diagnosis and case management are characteristics of the main role played by doctors (Jensen, Lorish, and Shepard, 1997) and, at the same time, actions within the aforementioned interactions. The biomedical paradigm also limits the action area of doctors to medical expertise and it also determines a significant power asymmetry in doctor-patient relationship due to patients' role of passive recipient of health care and implicitly an uneven distribution of responsibilities between doctors and patients.

# II. Patient adherence in the context of Chronic Care Model (CC)

The prevalence of chronic diseases (WHO, 2002; WHO, 2010) and the implicit consequences imposed an adjustment of the doctor – patient relationship to the new conditions, by altering the roles of actors that participate to healthcare. The most important differences between acute and chronic disease are as follows: (1) chronic disease is incurable and it must be monitored constantly for effective management; (2) treatment efficacy depends on patients' continuous involvement in various medical practices/actions; (3) patients know best the consequences of the disease and the effect of treatments, and he must apply the knowledge within disease management; (4) the treatment can become more effective if the patient and the doctor share knowledge during the healthcare process (Holman and Lorig, 2004, p. 241).

In this sense, it is necessary to make a distinction between the notions of compliance and adherence. The fundamental difference between the two notions is that adherence involves patients' agreement with doctors' recommendations (WHO, 2003). Therefore, adherence represents the participation and engagement of the patient in maintaining a treatment that he considers beneficial, within a therapeutic partnership with the doctor, which is essential for successfully following the treatment prescribed (Bosworth et al., 2006). In this context, non-adherence is patients' right and they can decide knowingly to follow or not to follow a treatment. The patient regains partially the control of his own body (Wilson, 2001) and more autonomy, implicitly; however, from

this perspective, adherence to treatment becomes one of his main responsibilities (Dunbar-Jacob, 2006).

According to Chronic Care Model (CCM) the improvement of patients' adherence to treatment (Wagner et al., 2005; Bodenheimer, 2005), depends on the patient's involvement in healthcare. Patients' active participation in health care decision making in partnership with their doctors (Sandu et al., 2013) helps patients to cope with their chronic conditions. This is a significant issue because chronic illnesses are ongoing and incurable conditions implying the continuous use of medication, lifestyle changes, coping with emotional stress, patients' personal responsibility to interpret/monitor the effects of diseases and impact of medication. All of these roles suggest a departure from the biomedical paradigm where the patient is a passive recipient of health care to an active participation in the decision-making process (Holman and Lorig, 2004).

The consequences of chronic disease entail an adjustment of the characteristics of patients' roles in this context. In addition, doctors must play the roles of educator and facilitator and they must attempt to identify patients' health objectives within a larger biopsychosocial context, to feel and understand the way in which the patients' attitude towards their own illness and their system of values and beliefs influence the adherence to a negotiated treatment plan (Oprea, 2009). The actions initiated by doctors within this interaction must be interpreted in agreement with the role played by the patient, on one side, and with patients' expectations, on the other side. Patients' expectations are related mainly to their problems and needs (Cojocaru and Popa, 2013). Studies on populations of chronically-ill patients, with long-term experience with their medical conditions have highlighted the following needs: (1) access to information on the diagnostic and on its implications, on available treatments and on the effects and their impact upon the patient's future; (2) permanent healthcare and easy access to it; (3) involving specialists in the healthcare process; (4) improving the infrastructure, which enables planning, reduction of waiting time and promptitude; (5) ways of coping with the symptoms (pain, fatigue, disability, loss of independence); (6) ways of mitigating the consequences of the illness such as incertitude, fear, depression, loneliness, hatred, sleep disturbances, memory loss, need to exercise, sexual dysfunctions, stress, etc. (Holman and Lorig, 2004, p. 242).

This evidence made the architects of CCM to suggest a reconfiguration of patients' roles in the medical care by emphasizing the role of self-management. Self-management in chronic conditions became important because patients are under medical supervision several hours per year, whereas they have to manage continuously their medical conditions. Patients' experience in the (self)-management of their illnesses is constructed in formal or informal situations. Zola (1981) argues that most patients seek the help of a doctor when the disease is already chronic. This means that, if the patients already experienced the disease for a long period, they already managed to identify ways and resources for disease management. It is important for these ways and resources to be in agreement with recommendations specific to disease treatment, because they reflect the patients' lifestyle.

The improvement of patients' adherence to treatments and, subsequently, of the quality of care, may depend on allotting the necessary resources within the therapeutic effort and on the effectiveness of the partnership between patient and doctor. Assuming the medical decision as a team may lead to solving the issue of non-adherence (Armstrong, 2014).

CCM comprises six components: (1) self-management support, (2) delivery system design, (3) decision support, and (4) clinical information systems; (5) strategic partnerships with community resources; and (6) health care organization. The proponents of CCM argue that the implementation of the six components with in health care institutions will result in productive interactions between informed activated patients and prepared proactive practice teams (Epping-Jordan et al., 2004, pp. 300-301). The model underlines the role of doctor – patient communication. Patients cannot assume their responsibilities unless they are reasonably informed, and doctors cannot formulate recommendations unless they succeed to understand their patients' health experience within their life context.

Lack of information is one of the most important sources of patients' passivity and of non-adherence to treatment, implicitly. Doctors' access to patients' experiences provide them the possibility to pinpoint the issues affecting adherence to treatment. Patient may follow the treatment partially or totally, while the doctor may notice it by measuring the functional parameters (e.g., by interpreting lab results) or by interpreting the patient's view on the way he follows the treatment.

Tyreman (2005) argues that a patient with "expertise" is, above all, an informed patient and that, depending on the nature of the illness, some patients may become knowledgeable about the causes and evolution of their disease or about the effects of various treatments. However, the same author points out that patients cannot use their knowledge or abilities to solve crises or to understand the modifications of the functional parameters of their own body. Lack of symptoms, for instance, represents a source of risks, and effects can be mitigated only if the patient opts for a preventive medical examination.

Patients' experience in general and, especially the way in which they operate with information are governed by subjectivity. In addition, patients' experience is directly influenced by socio-economic determinants and by system-specific factors (Wilson, 2001; Lippa et al., 2008). In order to understand the patient's experience, Kleinman (1988, cited in Whitsitt, 2010, p. 112) recommends an ethnographic approach to chronic disease. In their opinion, doctors must follow these phases within their interaction with patients: a) reconstruct the illness narrative of the patient; b) analyse it for meanings associated with symptoms, culture, personal, and interpersonal relationships; c) record the psychosocial problems associated with the disease and the steps that patient has taken to resolve them; d) capture a brief life history of the patient; e) discover the patient and family's explanatory models about the disease; f) negotiate treatment with the patient and family based on a discussion of all the explanatory models, including the doctor's; and g) reassess the doctor's model for bias based on previous negotiation with the patient and family. This model enables doctors to identify the sources of non-adherence and to formulate a coherent and acceptable treatment, constructed according to the patient's needs, but he cannot obtain an exact measurement of adherence. In the following, subsection we discuss sources of non-adherence.

# III. Sources of the (non)adherence to treatment

The definition of patients' adherence to therapeutic recommendations and the role responsibilities of the participants to the doctor – patient interaction, as these ones flow from CCM, suggest complex picture for this process. However, this picture is not complete without an analysis of the factors that influence patients' adherence. Bodenheimer (2005) identifies three sources of problems or factors that

generate a significant distance between the objectives and the results of CCM patient-specific problems, doctor-specific problems and system-specific factors. The main problems of the patients are the lack of information and the beliefs relating to what it means to be ill. As shown above, patient cannot participate to medical decision unless they are provided with correct information on the medication, unless they understand the consequences of the disease and the effects of treatment or the lifestyle changes they have to make.

Doctors' main problem is that they do not follow evidence-based clinical guidelines in their medical practice, while the main system-specific problem is the relatively short time doctor can afford for clinical encounter. It is highly unlikely for doctors to be able to play their expert roles as well as their roles of negotiators or educators within 15 minutes clinical encounter. It is also worth mentioning that there is a discrepancy between evidence-based practices which are biomedical in their nature, and doctors' roles to involve patients in the health care decisions which may create departures from evidence based practices. In addition, it is worth mentioning that doctors are trained in the spirit of biomedical paradigm and that they perceive themselves as experts who have to approach objectively chronic care. This is discordant with CCM pervasive subjectivity.

Therefore, the problem of patients' non-adherence is a rather systemic problem than on of individual doctors and patients. World Health Organization and of MacColl Institute for Healthcare Innovation, developed a modified version of CCM to provide a global perspective on chronic disease management. The enlarged version of CCM proposes changes at three system levels: micro, meso and macro (Epping-Jordan et al., 2004). The micro-level includes the patient and his family, supported by Community Partners and by the Healthcare Team. The meso-level broadens the area of the micro-level micro and it determines connections between Community and Healthcare Organization, while the macro-level represents the coordination of healthcare through policies, legislation, leadership or strategic allocation of resources (WHO, 2002). This conceptual framework - which determines the structure of relations between actors, the manners of allotting resources and the responsibilities of participants to healthcare – enables us to identify the factors that influence adherence in terms of the relations between the patient and the other actors.

Within this broader picture patient adherence can be analysed in the following hypostases: patient – family, patient – doctor, patient – patient/lay person (in formal or informal context), patient – group of friends, patient – work group, patient –medical institution, patient – other supporting community institutions (nongovernmental organizations, patients' associations, religious association and/or institutions, health insurance institutions). This enlarged view actually refers to the Healthcare Team, which includes the general practitioner, medical specialists, a psychologist, nurse, pharmacist, lay person (if healthcare is formal).

According to a report of World Health Organization, patient adherence is influenced by five sets of interactive factors: social and economic factors, healthcare team and system-related factors, condition-related factors, therapy-related factors, and patient-related factors (WHO, 2003).

Determining factors of adherence		
Social and economic factors	•poor socioeconomic status	
	<ul><li>poverty</li></ul>	
	•illiteracy	
	•low level of education	
	•unemployment	
	•lack of effective social support network	
	•unstable living conditions	
	•long distance from treatment centre	
	•high cost of transport	
	•high cost of medication	
	•changing environmental situation	
	•culture and lay beliefs about illness and treatment	
	•family dysfunction	
	•gender	
	●age	
Healthcare team and system- related factors	•patient-provider relationship	
	•poorly developed health services with inadequate or	
	non-existent reimbursement by health insurance plans	
	<ul> <li>poor medication distribution systems</li> </ul>	
	•lack of knowledge and training for healthcare providers on	
	managing chronic conditions	
	•overworked healthcare providers	
	•lack of incentives and feedback on performance	

	•short consultations
	•weak capacity of the system to educate patients and provide follow-up
	•inability to establish community support and self-management capacity
	•lack of knowledge on adherence and of effective interventions for improve it
Condition- related factors	•the severity of symptoms
	•level of disability (physical, psychological, social and vocational)
	•rate of progression and severity of the disease
	•the availability of effective treatments
Therapy-related factors	•complexity of the medical regimen
	•duration of the treatment
	•previous treatment failures
	•frequent changes in treatment
	•the immediacy of beneficial effects
	•side-effects
	•availability of medical support
Patient-related factors	•patients' knowledge and beliefs about their illness
	•motivation to manage the illness
	•confidence (self-efficacy) in their ability to engage in illness-
	management behaviours
	•expectations regarding the outcome of treatment
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Source: World Health Organization, 2003

### Conclusions

Chronic Care Model does not annul the doctors' objective approaches in the medical care and it allows them to access the patients' experience, thus consolidating the therapeutic partnership. Patients become expert partners of healthcare providers and not the object of health professionals' expertise. Chronic diseases are considered both a personal phenomenon that affects patients' personal life, and a social phenomenon with consequences upon the families and communities. CCM involves a reconsideration and adjustment of health systems, starting from the idea that the patient plays the central role in the healthcare process. Chronic diseases management involves changing the lifestyle, taking the medication, watching the diet, introducing and maintaining exercise in daily life, etc. These actions are elements of adherence to treatment and they reflect the responsibility of the patient's participation to healthcare.

An analysis of the influence of factors that influence patient adherence in the larger social context represents the starting point for understanding the experience of patients diagnosed with a chronic disease. Whereas family represents the main reservoir of resources in CCM, the partnership between patients and doctors represent the source of therapeutic process coherence. Furthermore, depending on the context, some factors have more or less influence upon the process. Though we may not obtain an exact image of adherence, this analysis framework can prove useful when it comes to choosing theoretical models that explain the mechanisms of adherence to treatment and to the construction of design for future studies, implicitly.

CCM enlarges the biomedical model of care providing a framework for considering patients' subjective experience. In the equation of health care, the main actors are doctors and patients, but the nature of their responsibilities is different and becomes a matter of negotiation between them. Irrespective of the framing theoretical model, adherence to treatment has a major influence on the results of the care and the quality of life of the patient, and continues to challenge the medical profession.

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# **Biodata**



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