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TECNOLOGIE POSITIVE PER IL PATIENT ENGAGEMENT

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Healthy Reasoning: la comunicazione efficace nella cura delle malattie croniche

27 Novembre 2014 – Università Cattolica del Sacro Cuore, Milano

GESTIRE LA SALUTE OGGI: le sfide della società contemporanea

I sistemi sanitari sono oggi chiamati a rispondere a numerose sfide sociali…

ECONOMIC CRISIS
HEALTHCARE IN LOW RESOURSE SETTINGS

WELLNESS EXPECTATIONS

AGING POPULATION

INCREASING RATES OF CHRONIC DISEASE

INCREASING DEMAND FOR HEALTH CARE AND HIGH QUALITY SERVICES

UN VIRAGGIO DI PARADIGMA….
Verso una nuova cultura della salute

DISEASE-CENTRED MODEL

PATIENT-CENTRED MODEL

CLIENT-CENTRED MODEL

Focus sulla cura della malattia

Focus sulla cura della paziente tenendo conto del suo vissuto di malattia

Focus sul processo di gestione salute a tutto tondo come interscambio dinamico tra cittadino & HCS

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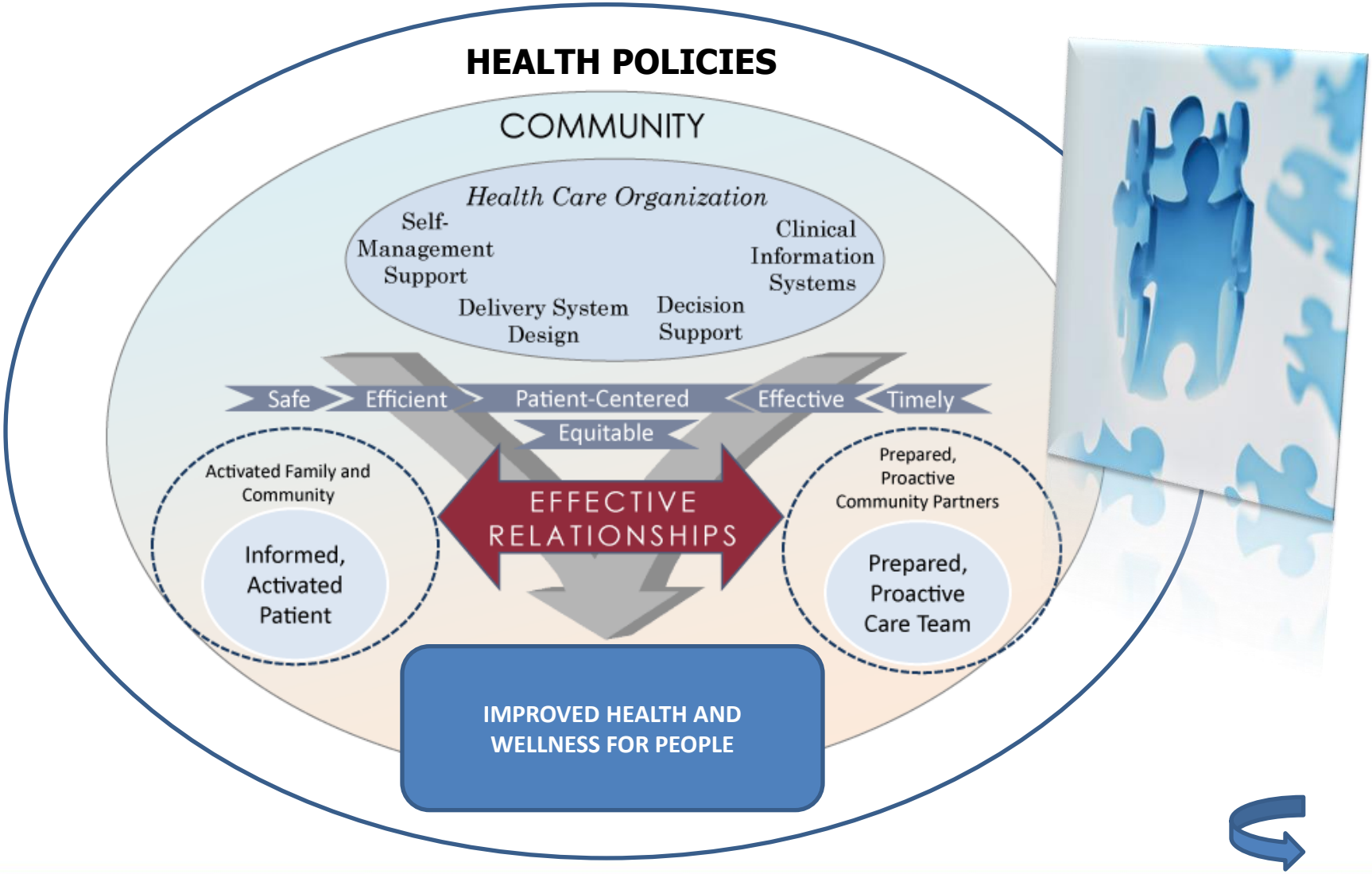
FRA "DENTRO" E "FUORI" DELLE ORGANIZZAZIONI SANITARIE



Haskett, T. "Chronic illness management: Changing the system." *Home Health Care Management & Practice* 18.6 (2006): 492-494.

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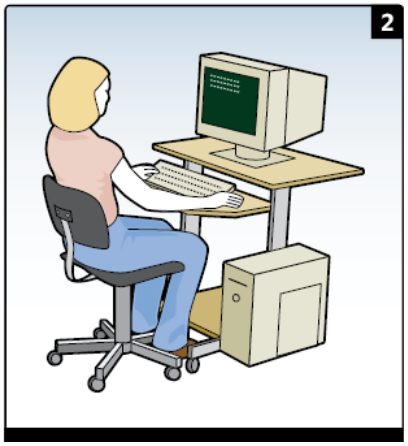
LA TECNOLOGIA SI È EVOLUTA… MA COME?

Le nuove tecnologie diventano sempre più una risorsa fondamentale per **innovare i sistemi sanitari** e i **modelli di integrated care** e **promuovere il coinvolgimento attivo del paziente** nel processo di cura...

1960: Mainframe Era

Un computer per molti utenti

1980: Personal Computer Era

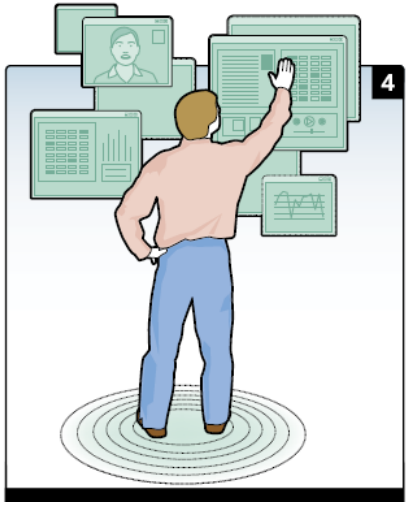


Un computer per un utente

2000: Mobility Era

Molti computer per un utente

2020+: Ubiquity Era



Migliaia di computer per un utente

DA TECNOLOGIA…

…A ESPERIENZA

Che cos'è il patient engagement?

Come modellizzarlo?

IL PATIENT HEALTH ENGAGEMENT (PHE) MODEL

Active Ageing and Healthy Living
G. Riva et al. (Eds.)

doi:10.3233/978-1-61499-425-1-85

Patient Engagement: The Key to Redesign the Exchange Between the Demand and Supply for Healthcare in the Era of Active Ageing

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Abstract. The last decades' changes in the epidemiological trends of chronic disease - also due to the ageing population - and the increased length and quality of life among the majority of Western population have introduced important changes in the organization and management of the healthcare systems. Consequently, health systems throughout the world are searching for new and effective ways to make their services more responsive to new patients and the public's health needs and demands. The idea of patient engagement – borrowed from the marketing conceptualization of consumer engagement - moves from the assumption that making patients/clients co-producers of their health can enhance their satisfaction with the healthcare system as well as their responsibility in both care and prevention by improving clinical outcomes and reducing health delivery costs. To make people aware of their health services options by supporting them in the decision-making process and to engage them in enacting preventive and healthy behaviors is vital for achieving successful health outcomes and preventing waste of resources. In this chapter, we outline a model (PHE model) that explains the patients' subjective experience with their health management process and the levers that may enact the passage from one phase of the process to the other. Based on this conceptual model of patient engagement will be proposed a tool kit of priority actions that may sustain the patient in its process of engagement.

Keywords. Patient Engagement, Chronic Disease, Health Management, Active Ageing, Healthy Living, Patient Empowerment, Patient Activation

processo esperienziale multi-fasico che deriva dall'attivazione congiunta dell'individuo a livello cognitivo (think), emotivo (feel) e comportamentale (act).

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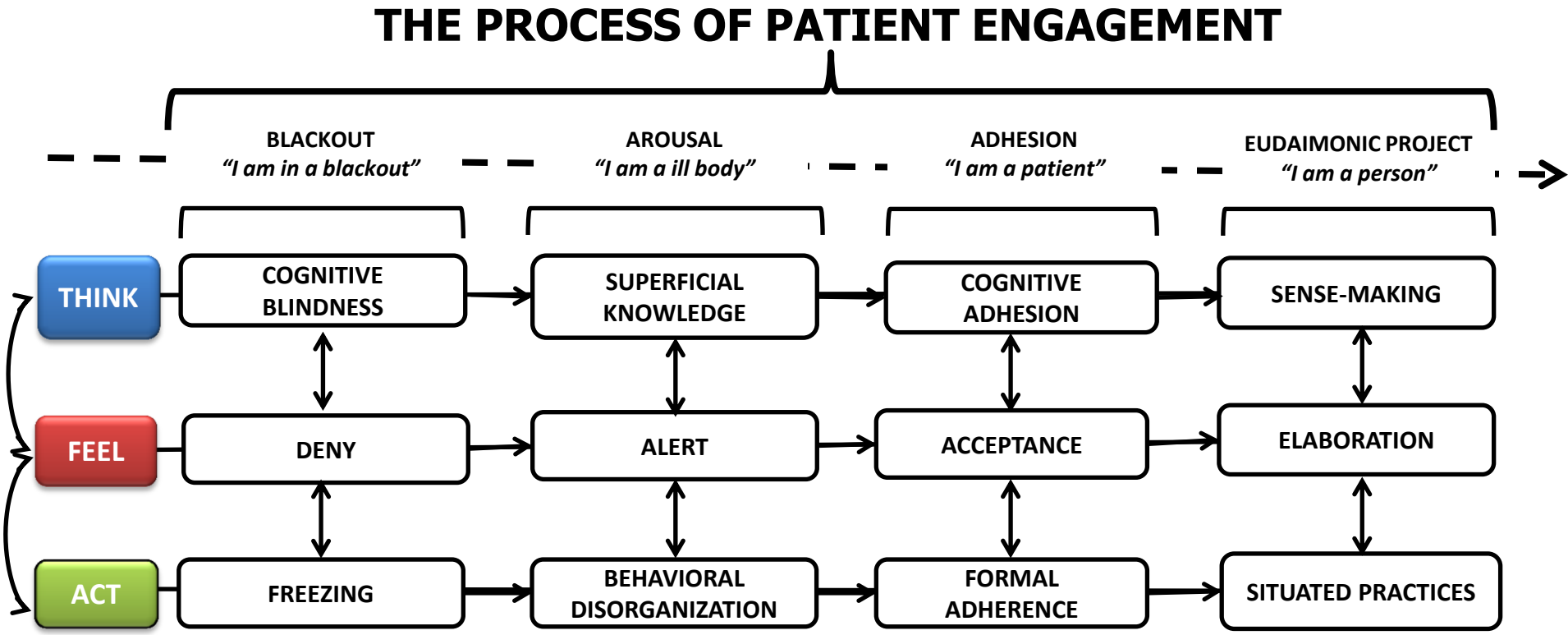
IL PATIENT HEALTH ENGAGEMENT (PHE) MODEL



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IL PHE MODEL IN PRATICA

Nella pratica, il PHE model può fungere come “bussola” per:

ORIENTARE INTERVENTI DI CURA ALLINEATI CON I BISOGNI DI ENGAGEMENT DEI PAZIENTI

MONITORARE IL LIVELLO DI ENGAGEMENT DEI PAZIENTI NEL PROCESSO DI CURA

Assessment Questions	Possible answers			
	blackout	arousal	adhesion	Eudaimonic project
How do you feel in relation to your health status?	*I am very discouraged due to my illness*	*I feel anxious every time a new symptom arises*	*I feel I have accepted my illness*	*Despite my ilnnes I perceive coherence and continuity in my life*
What do you know about your health status?	*I can't understand what happened to me*	*I can't manage the information that my physician gives me*	*The information my physician gives me is clear to me*	*I understood how to manage my life despite my illness and I feel autonomous*
How do you behave in relation to your health status?	*I let others take care of me*	*I try to manage my illness but I'm insure*	*I strictly follow the rules that my physician gives me*	*I am able to follow my medical regimen even when I have to break my daily routine (ie. On holiday, during the week end, when I travel for work…)*
In general, thinking at my health status …	*I feel I'm going to blackout*	*I am in alarm*	*I am conscious*	*I feel positive*

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QUALI TECNOLOGIE PER IL PATIENT ENGAGEMENT?

BLACKOUT
- emotional, behavioural and cognitive reset

AROUSAL
- proactive mobilization focused on the body's changement and symptoms' onset/manifestations

ADHESION
- formal adherence to treatment, on the basis of a rigid "script"

EUDAIMONIC PROJECT
- A «new normality» features the patient's life thus allowing to make renewed wellness plans

ACTION PRIORITY

TO PROMOTE PATIENTS' UNDERSTANDING OF THE DISEASE

TO BUILT TRUSTED CARE RELATIONSHIP

THE ROLE OF EHEALTH

Using technologies for allowing patients to **improve their health literacy** and to **understand the nature of their health condition**....

...**and** for promoting the **creation** of **effective** and **reliable patient's interaction with the healthcare**

EXAMPLES

- web portals
- real time and asynchronous teleHealth

ACTION PRIORITY

TO MAKE PATIENTS' FEEL CONFIDENT AND EFFECTIVE WHEN MANAGING THEIR HEALTH

THE ROLE OF EHEALTH

Using technologies for **generating a sense of mastery** by **reinforcing positive behaviours** and for promoting **networking** to **share good practices** with peers

EXAMPLES

- simulation technologies (virtual reality)
- mHealth and mobile apps
- social networks

ACTION PRIORITY

TO SUSTAIN PATIENTS IN RECOVERING A BROAD-SPECTRUM LIFE PROJECTUALITY

THE ROLE OF EHEALTH

Using technologies to sustain **identity re-construction** through enabling users to actively create **narrative contents** about **their illness experience**...

...**and guaranteeing the patient-health providers relationship** even at distance, in the context of communities

EXAMPLES

- blogs (digital storytelling)
- virtual worlds (interreality, pHealth)

Graffigna, G., Barello, S., Triberti, S., Wiederhold, B. K., Bosio, A. C., & Riva, G. (2013). Enabling eHealth as a Pathway for Patient Engagement: a Toolkit for Medical Practice. *Studies in health technology and informatics*, *199*, 13-21.

Archives of
Physical Medicine and Rehabilitation

How to Make Health Information Technology Effective: The Challenge of Patient Engagement

We read with great interest the article by Zimmerli et al[1] discussing the effects of different design features for virtual reality exercises in engaging patients in lower extremity motor rehabilitation. One of Zimmerli's main points is that the use of health technologies is highly relevant for active and continuous patient engagement during robotic-assisted rehabilitation; however, Zimmerli suggests that patient preferences and expectations should be taken into more consideration when designing virtual reality exercises for every day, clinical motor rehabilitation.

Moreover, no specific guidelines are offered to support the patient engagement process. Here we suggest that the emerging discipline of positive psychology with its focus on personal experience[2] provides a useful framework for guiding these efforts. In this view, patient engagement can be conceptualized as a subjective experiential process resulting from the conjoint conative (act), cognitive (think), and emotional (feel) enactment of individuals in care and cure management (fig 1). This process consists of 4 subsequent phases (disengagement, arousal, adhesion, and eudaimonic reconfiguration) in which the different experiential dimensions play complementary driving roles as key factors for promoting patients' advancement in this process. The unachieved synergy among these dimensions inhibits patients from full engagement in their care process, limiting the benefit from robotic-assisted rehabilitation.

Health technologies that succeed in addressing and fostering an effective synergy among these experiential dimensions may offer a solution to this shortcoming.[3] Positive technology[4] focuses on the use of technology for improving the quality of our personal experience, by suggesting specific strategies to modify/improve each of the different dimensions involved, and fostering patients' motivation and engagement in the process.[5]

The first goal is the structuration of the health experience using a goal, rules, and a feedback system.[6] In this view, the rehabilitation experience should offer patients with a sense of purpose, focusing attention and orienting engagement in the experience. The rules, by removing or limiting the obvious ways of getting to the goal, push subjects to see the experience from a different point of view. The feedback system tells players how close they are to achieving the goal and provides motivation to keep trying.

A second goal is to augment the rehabilitation experience by offering external cues or making patients more aware of their behaviors and consequences.[7] Technology allows multisensory experiences in which content and its interaction are offered through >1 of the senses. It is even possible to use augmented reality to overlay virtual guidelines (eg, movement paths) onto real scenes.

We think that assessing the "quality of experience" should become a critical factor to design and implement health technologies supports really able to foster patient engagement in its phases and an important criterion for their assessment.

	THE PROCESS OF PATIENT ENGAGEMENT			
	DISENGAGEMENT	AROUSAL	ADHESION	EUDAIMONIC PROJECT
THINK	COGNITIVE BLINDNESS (patients are not/insufficiently equipped to handle their health experience)	SUPERFICIAL KNOWLEDGE (patients have basic and stereotypical information about their health experience)	COGNITIVE ADHESION (patients have enough abstract knowledge and information about their health experience)	SENSE-MAKING (patients have targeted and updated information to understand and give sense to their health experience)
FEEL	DENY (patients can't accept the diagnosis and their new health experience)	ALERT (patients are emotionally aroused due to their health experience)	ACCEPTANCE (patients are aware of their condition and feel enough confidence in their own emotional strength to cope with their health experience)	ELABORATION (patients have fully elaborated the impact of their health experience on their life)
ACT	FREEZING (patients feel paralyzed and can't act to manage their health experience)	BEHAVIORAL DISORGANIZATION (patients are behaviorally unskilled to effectively manage their health experience)	FORMAL ADHERENCE (patients enact healthy behaviors to adhere to external prescriptions)	SITUATED PRACTICES (patients enact effective healthy behaviors at due time)

Goal 1
Health technologies aim at **favoring the structuration of the health experience** using a goal, rules and a feedback system

Goal 2
Health technologies aim at **augmenting the rehabilitation experience** by making patients more aware of their behaviors and their consequences

THE ROLES OF HEALTH TECHNOLOGIES

Fig 1 Roles of health technologies in fostering the potential regulatory pathways in the patient engagement process.

Assenza di linee guida condivise per la progettazione e realizzazione di tecnologie basate sui bisogni e sull'esperienza di health engagement dei pazienti!

Come sintonizzare le tecnologie con i bisogni dei pazienti?

Come disegnare tecnologie per il patient engagement?

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Lo sviluppo dei nuovi media – tablet, smartphone, pc, ecc. – che sta progressivamente trasformando le tecnologie in esperienze, le rende sempre più presenti nella vita quotidiana delle persone.

Ma in che modo questa trasformazione della tecnologia può essere utile al benessere delle persone?

Come riuscire ad utilizzare l'esperienza tecnologica per promuovere l'engagement dei pazienti?

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COME POSSIAMO PROMUOVERE LA SALUTE E L'ENGAGEMENT DEI PAZIENTI USANDO LA TECNOLOGIA?

CYBERPSYCHOLOGY, BEHAVIOR, AND SOCIAL NETWORKING
Volume 15, Number 2, 2012

DOI: 10.1089/cyber.2011.0139

ORIGINAL ARTICLES

Positive Technology: Using Interactive Technologies to Promote Positive Functioning

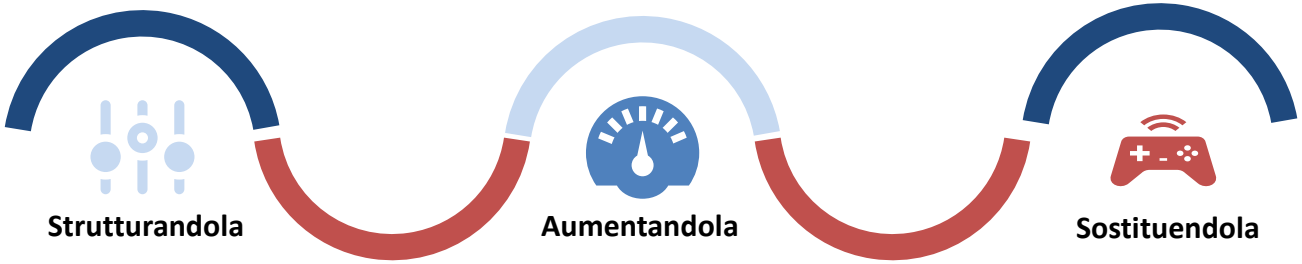
Giuseppe Riva, Ph.D.,[1,2] Rosa M. Baños, Ph.D.,[3,4] Cristina Botella, Ph.D.,[4,5] Brenda K. Wiederhold, Ph.D., M.B.A., BCIA,[6,7] and Andrea Gaggioli, Ph.D.[1,2]

Abstract

It is generally assumed that technology assists individuals in improving the quality of their lives. However, the impact of new technologies and media on well-being and positive functioning is still somewhat controversial. In this paper, we contend that the quality of experience should become the guiding principle in the design and development of new technologies, as well as a primary metric for the evaluation of their applications. The emerging discipline of Positive Psychology provides a useful framework to address this challenge. Positive Psychology is the scientific study of optimal human functioning and flourishing. Instead of drawing on a "disease model" of human behavior, it focuses on factors that enable individuals and communities to thrive and build the best in life. In this paper, we propose the "Positive Technology" approach—the scientific and applied approach to the use of technology for improving the quality of our personal experience through its structuring, augmentation, and/or replacement—as a way of framing a suitable object of study in the field of cyberpsychology and human–computer interaction. Specifically, we suggest that it is possible to use technology to influence three specific features of our experience—affective quality, engagement/actualization, and connectedness—that serve to promote adaptive behaviors and positive functioning. In this framework, positive technologies are classified according to their effects on a specific feature of personal experience. Moreover, for each level, we have identified critical variables that can be manipulated to guide the design and development of positive technologies.

Questa domanda guida la riflessione della "tecnologia positiva", un approccio scientifico applicativo che usa la tecnologia per modificare le caratteristiche della nostra esperienza personale (esperienza ottimale)

COME LA TECNOLOGIA PUÒ MODIFICARE L'ESPERIENZA DEI PAZIENTI?



ATTRAVERSO UN OBIETTIVO, DELLE REGOLE E UN SISTEMA DI FEEDBACK (RAGIONAMENTO)

•L'obiettivo fornisce uno scopo, orientando l'attenzione.

•Le regole spingono il ad osservare l'esperienza in modi diversi.

•Il feedback permette di capire quanto si stia avvicinando, o meno, all'obiettivo aumentando la motivazione

CON ELEMENTI MULTIMODALI (INTUIZIONE E RAGIONAMENTO)

•La tecnologia consente esperienze multisensoriali.

•E' inoltre possibile inserire oggetti digitali in situazioni reali attraverso la realtà aumentata.

CON UNA SINTETICA/VIRTUALE (INTUIZIONE)

•Utilizzando la realtà virtuale è possibile simulare una presenza fisica in un mondo sintetico, che reagisce alleazioni del soggetto come se fosse realmente presente.

•E' persino possibile alterare/sostituire la percezione del corpo.

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COME LA TECNOLOGIA PUÒ MODIFICARE L'ESPERIENZA DEI PAZIENTI?

Usando queste strategie è possibile modificare tre specifiche caratteristiche della nostra esperienza – **la dimensione affettiva, il livello di autorealizzazione and il livello di connessione** – che facilitano il processo di patient health engagement.

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COME LA TECNOLOGIA PUÒ MODIFICARE L'ESPERIENZA DEI PAZIENTI?

Tecnologie Edoniche

DIMENSIONE AFFETTIVA
tecnologie usate per indurre esperienze positive e piacevoli

Tecnologie Eudaimoniche

AUTOREALIZZAZIONE
tecnologie usate per aiutare gli individui nel raggiungimento di esperienze coinvolgenti e auto-realizzanti

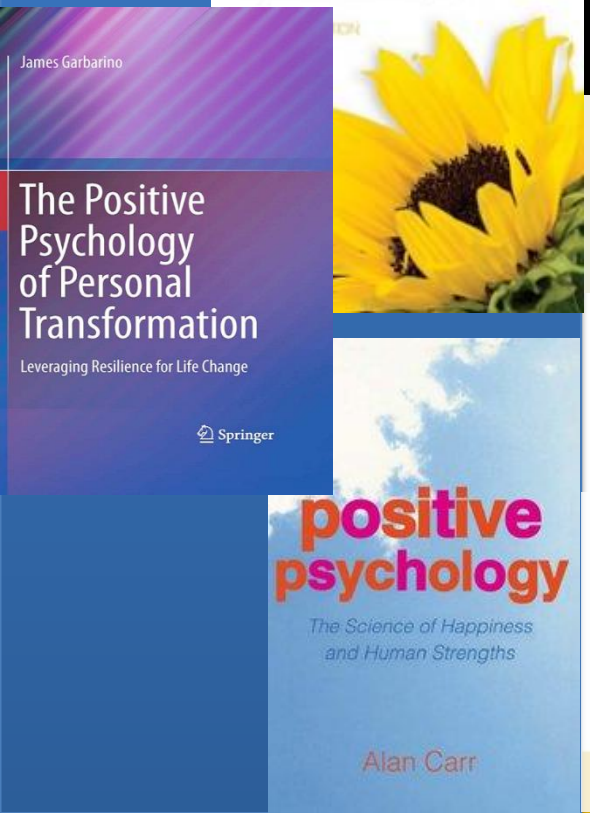
Tecnologie Sociali Interpersonali

CONNESSIONE
tecnologie usate per aiutare e migliorare l'integrazione sociale e/o le connessioni sociali tra individui, gruppi e organizzazioni

I concetti della Tecnologia Positiva trovano i propri presupposti teorici nelle riflessioni della Psicologia Positiva e Cognitiva

Positive Technology

The scientific and applied approach to the use of technology for improving the quality of our personal experience through its structuring, augmentation and/or replacement



Experiencial features targered by technology

- **Emotional Quality** (Arousal, Valence, Object)
- **Engagement/ Actualization** (Challenge/skills, Goals, Presence)
- **Connectedness** (Collective Intentions, Social Presence, Empathy)

Hedonic level
Technologies used to induce positive and pleasant experiences

Eudaimonic level
Technologies used to support individuals in reaching engaging and self-actualizing experiences

Social & Interpersonal level
Technologies used to support and improve social integration and connectedness

Link with Well-Being

- **Broaden-and-build model of positive emotions** (Fredrickson, 2001, 2004)
- **Flow** (Csikszentmihalyi, 2001)
  Transformation of Flow (Delle Fave, 1996; Riva et al, 2006)
- **Social Capital** (Coleman, 1998; Helliwell & Putnam, 2004)
  Networked Flow (Riva et al, 2010)

Related ICT topics

- **Affective Computing, Emotional Design, Engineering Aesthetic, Hedonic Computing**
- **Persuasive Computing Presence Serious Gaming, Simulations, e-health, Virtual Reality Therapy**
- **Persuasive Computing Serious Gaming, Simulations, Social Networks, Social Presence**

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PATIENT ENGAGEMENT E TECNOLOGIE POSITIVE IN PRATICA

- un caso di ricerca -

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Tecnologie positive per il patient engagement in riabilitazione: Il progetto H-CIM

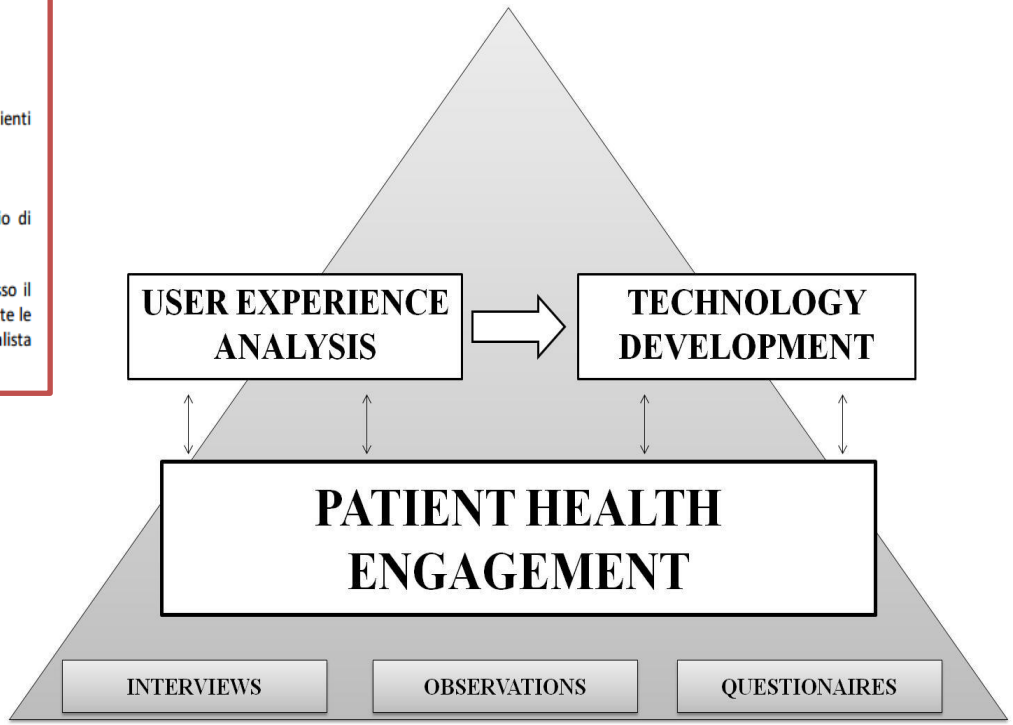
H-CIM

Healthcare Intelligent Monitoring

Un sistema tecnologico per il **monitoraggio non intrusivo** di **aspetti comportamentali** e **condizioni fisiche** di pazienti cronici in **ambiente domiciliare**, costituito da:

- Una **rete di sensori wireless** per raccogliere e convogliare informazioni sull'ambiente e l'individuo.
- **Sensori indossabili** per l'identificazione di eventi particolari (ad esempio le cadute) e il monitoraggio di parametri vitali (ad esempio frequenza cardiaca, saturimetria, ecc.)

Il sistema H-CIM abilita il monitoraggio continuo dello stato di salute e del livello di attività del paziente presso il proprio domicilio nonché dell'ambiente che lo circonda oltre all'accesso in logica *every-time & every-where*, a tutte le informazioni, con modalità di visualizzazione differenziata a seconda del tipo di utente (ad esempio medico specialista o familiare).



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PROFILO DI ENGAGEMENT

Paziente 1 : adhesion	Paziente 2 : adhesion	Paziente 3 : eudaimonic project
• La paziente si descrive altamente responsabile e attiva nella gestione della propria salute e nel raggiungimento di stati di benessere. Si percepisce mediamente efficace nel mettere in atto le prescrizioni cliniche e si mostra proattiva nella relazione con il curante. • Mostra maggiori difficoltà nella gestione autonoma dei sintomi e nel trasferimento delle prescrizioni terapeutiche dal contesto ospedaliero a quello quotidiano	• La paziente si descrive competente rispetto all razionale alla base delle prescrizioni riabilitative . Sipercepisce altamente efficace e autonoma nella gestione dei sintomi e degli aspetti pragmatici connessi alla gestione quotidiana della sua salute, e alla relazione con i terapeuti. • Tuttavia, la paziente mostra diffcoltà nel mantere cambiamenti nello stile di vita e nell'assumere comportamenti preventivi sul lungo periodo.	• La paziente mostra di essere autoefficace e resiliente nella gestione della propria salute anche in situazioni in cui sorgono sintomi imprevisti. • Ha piena conoscenza delle caratteristiche della propria malattia e delle relative terapie. • Si dimostra attiva e autonoma sia nella gestione della salute che nella relazione con il medico.

ATTITUDINE NE VERSO TECNOLOGIA

"Credo che la tecnologia possa essere utile, ma mi spaventa imparare ad usarla..." *"In ospedale era facile fare gli esercizi con tutti quei sensori, ma a casa non lo so..."*	*"Secondo me usare la tecnologia è divertente ma mi spaventano i costi..."* *"Faccio fatica ad immaginare di dover utilizzare tutti i giorni la tecnologia...deve lasciarmi libera di fare la ma vita di sempre"*	*"La tecnologia è uno strumento piacevole e mi permette di tenere sotto controllo i segnali del mio corpo"*

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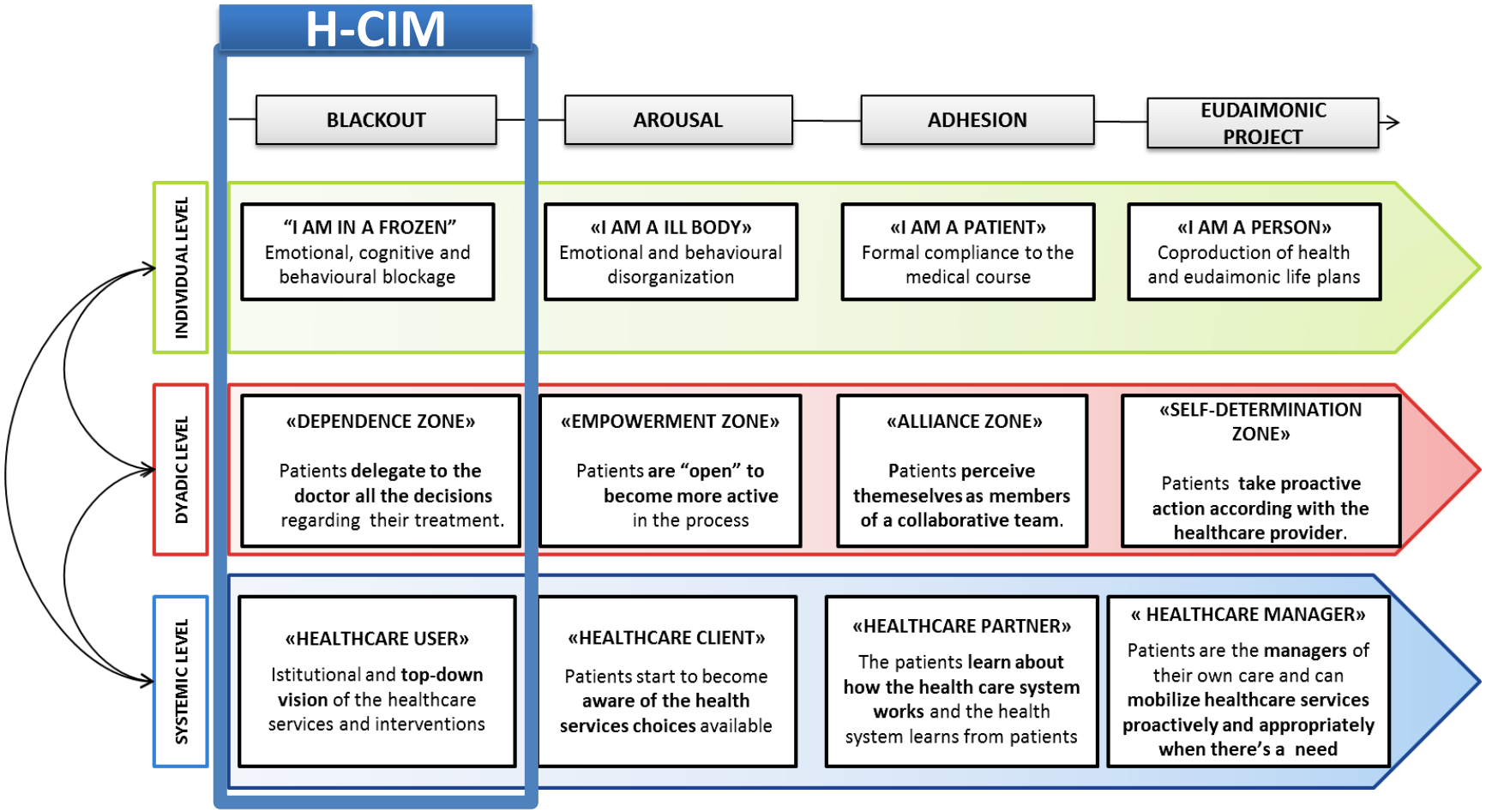

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IN CONCLUSIONE: alcuni concetti chiave

Patient engagement e tecnologie positive: un connubio virtuoso per innovare l'healthcare

Studies in Health Technology and Informatics
Volume 191
IOS Press, 2013

doi:10.3233/978-1-61499-282-0-9

Positive Technology as a Driver for Health Engagement

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[b] *Virtual Reality Medical Institute, Brussels, Belgium.*
[c] *Virtual Reality Medical Center, San Diego, California.*
[d] *Istituto Auxologico Italiano, Milan, Italy*

Abstract. Despite the fact that older adults are healthier than in the past, the current trend of an ageing population implies an increased risk and severity of chronic diseases. Low-resource healthcare systems face increased organizational healthcare costs, which is likely to result in an allocation of limited health resources. Healthcare organizations themselves must deal with patients' increasing need for a more active role in all the steps of the care & cure process. Technological advances may play a crucial role in sustaining people's health management in daily life, but only if it is "ecologically" designed and well-attuned to people's health needs and expectations. Healthcare is more and more called to orient innovative research approaches that recognize the crucial role of a person's engagement in health and well-being. This will enable patients to reach a higher quality of life and achieve a general psychophysical well-being. Thus, positive technological innovation can sustain people's engagement in health and invoke community empowerment, as we shall discuss in this document.

Keywords. people health engagement, patient engagement, health technologies, positive technology, well-being

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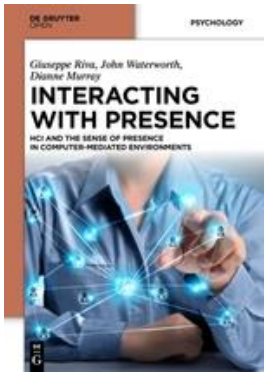
Patient engagement e tecnologie positive: un connubio virtuoso per innovare l'healthcare

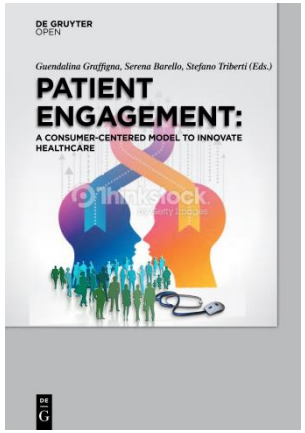
- E' possibile favorire il patient engagement manipolando attraverso la tecnologia queste tre dimensioni: dimensione affettiva, livello di autorealizzazione e livello di connessione

- In base al tipo di variabile modificata possiamo parlare di tecnologie Edoniche, Eudaimoniche e Sociali/ Interpersonali.

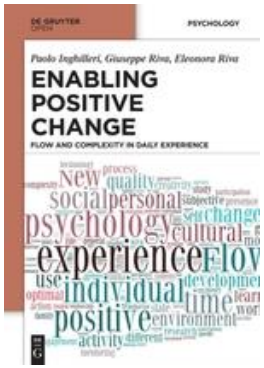
Cinque libri da scaricare gratuitamente…



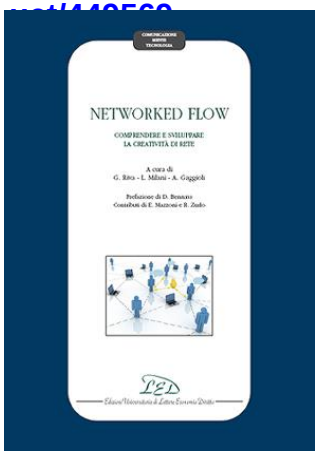
Interacting with Presence HCI and the Sense of Presence in Computer-mediated Environments
http://www.degruyter.com/view/prod



Patient engagement: a consumer-centered model to innovate healthcare (to be published January 2015)
http://www.degruyter.com

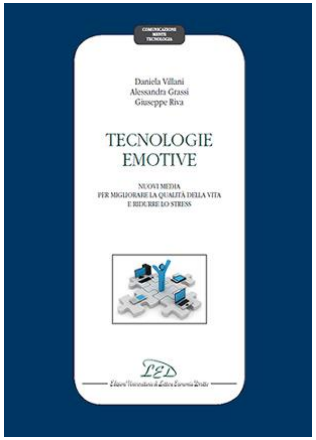


Enabling Positive Change Flow and Complexity in Daily Experience (to be published November 2014)
http://www.degruyter.com/view/prod



Networked Flow. Comprendere e sviluppare la creatività di rete
http://www.ledonline.it/ledonline/index.html?/ledonline/Networked-flow-riva.html

Tecnologie Emotive Nuovi media per migliorare la qualità della vita e ridurre lo stress
http://www.ledonline.it/ledonline/index.html?/ledonline/473-ridurre-stress-qualita-della-vita.html



Grazie per l'attenzione!

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