

Factors influencing deprescribing activities in the management of hospitalized patients in polytherapy

Emanuela Foglia¹, Lucrezia Ferrario^{1,2}, Elisabetta Garagiola^{1,2}, Daniele Bellavia^{1,2}, Antonino Mazzone³, Federico Gatti³, Luca Varalli³, Cristina Ponsiglione⁴, Lorella Cannavacciuolo⁴

¹ LIUC- University Cattaneo, Centre for Health Economics, Social and Health Care Management, LIUC Business School, Corso Matteotti 22, Castellanza, 21053, Varese, Italy;

² HD LAB – LIUC University Cattaneo, Corso Matteotti 22, Castellanza, 21053, Varese, Italy; ³ ASST Ovest Milanese Hospital, Legnano, Milano, Italy; ⁴ Department of Industrial Engineering, University of Naples Federico II, Naples (Italy)

HSD29

Background

- **Clinical decision-making** is the process of defining an informed judgment about the diagnostic and treatment pathways necessary for the patients (Hardy & Smith, 2008), and it **represents the key point of health policy and medical practice** (Kaplan 2005)
- **The presence of comorbidities and multiple chronic diseases**, and the related prescription of complex medications, as well as concerns in therapies changes, present **many professional challenges in the clinical decision-making process**
- **Digital solutions could support the clinical process and the exchange of knowledge**, in the evaluation of the therapy appropriateness and in the final decision-making effort
- Although the availability of digital innovation to support the decision-making in polypharmacy, **the analysis of factors that could prompt the clinicians to leverage on this digital solution, to make a prescription for elderly patients in polytherapy** (Arcopinto *et al.*, 2017) remains a poorly explored topic

Objective and Research Question

To investigate the factors influencing the clinical choice to change the current patients' therapies, and the impact of the potential support of digital innovation and other knowledge assets, such as INTERCheckWEB information technology and/or guidelines, to optimize the prescription decision-making process in older and frailer patients in polytherapy



*Which are the **key factors determining the change in the treatment options in frail patients in polytherapy**, in presence or in absence of specific information, derived from IntercheckWEB and clinical guidelines?*

Methods

UNIT OF ANALYSIS

Hospitals: autonomy in the technology acquisition, resources allocation, and decision-making processes

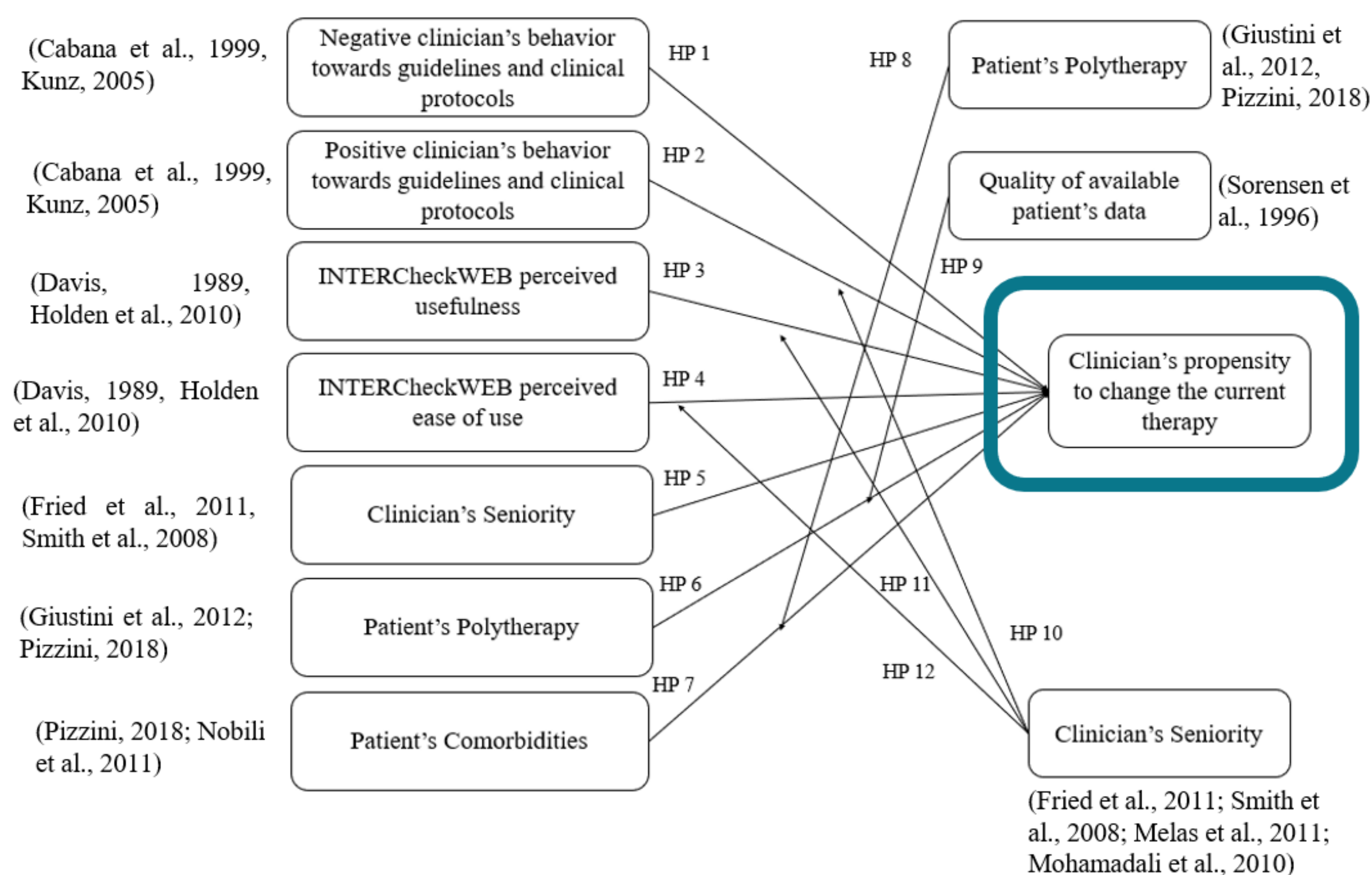
INFORMANTS

Head physicians and hospital clinical managers of second level (N=35) referring to the Internal Medicine wards, that completed a specific questionnaire, aimed at evaluating 15 clinical cases, thus defining if, receiving specific information derived from INTERCheckWEB, they would have changed the patient's current therapy, during an Internal Medicine hospitalization, in terms of number of ceasing or incremental drugs

REGRESSION MODEL

Hierarchical sequential linear regression model (with enter methodology), useful to test hypotheses, through incremental models, to establish the specific impacts of control variables, input variables, and moderators respectively, on the clinicians' choice to change the current therapy

Results

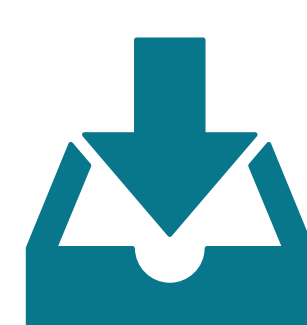


	Model 1	Model 2	Model 3
Control variables			
Patient's age	0.068*	0.031	-0.073*
Patient's autonomy	-0.015	0.203*	0.303*
Patient's BMI	0.542*	0.383*	0.505*
Independent variables			
Negative clinician's behaviour towards guidelines and clinical protocols		-0.060	-0.061
Positive clinician's behaviour towards guidelines and clinical protocols		-0.024	-0.104
INTERCheckWEB perceived usefulness		-0.089	-0.084
INTERCheckWEB perceived ease of use		0.150*	0.298*
Clinician's Seniority		0.083*	0.087*
Patient's Polytherapy		0.599*	0.541*
Patient's Comorbidities		-0.283*	0.302*
Moderators			
Patient's Polytherapy X Patient's Comorbidities			-0.370*
Quality of available patient's data X Patient's Polytherapy			-0.661*
Clinician's Seniority X Positive clinician's behavior towards guidelines and clinical protocols			0.083
Clinician's Seniority X INTERCheckWEB perceived usefulness			-0.035
Clinician's Seniority X INTERCheckWEB perceived ease of use			-0.134
R ²	0.305	0.516	0.550
Adjusted R ²	0.301	0.506	0.537
F value	76.236*	54.751*	41.555*
Δ R ²	0.305	0.211	0.035
F(ΔR ²)	76.236*	31.954*	7.859*

Conclusions

- Deprescribing is a new and emerging theme in the care of older adults living with multiple concomitant diseases, thus also including frail conditions
- **The clinical choice to change therapy is becoming relevant to decrease the incidence of drug-related adverse events**, and improve the adherence to medications, reducing the economic burden on the patients, as well as on the healthcare providers
- In the investigation of the potential factors impacting on the propensity of the clinician to change the current patients' therapy (with a deprescribing approach), it emerged that **having an IT system easy to use would be a facilitator to the clinical choice**
- Furthermore, **the number of drugs and the number of concomitant diseases affecting a patient, play a key role in the potential current therapies' changes**
- **The above aspects explained the 53.7% of the clinician's choice variance, to modify the prescription, reducing the number of treatments to be administered to the patients**
- Another important factor potentially disruptive for the introduction of IntercheckWEB, is related to the **sustainability of the digital solution**: it is free and without cost for the hospital
- The findings provide insight into factors influencing clinical assessment decisions, that could highly be **replicable in the COVID-19 era**, since hospitalized COVID-19 patients are frequently older with comorbidities and receiving polypharmacy, thus strengthening the need for the clinicians to modify the therapy

Contacts



Daniele Bellavia – dbellavia@liuc.it
 Emanuela Foglia – efoglia@liuc.it
 Lucrezia Ferrario – lferrario@liuc.it
 Elisabetta Garagiola – egaragiola@liuc.it