



What if things go wrong in co-producing health services? Exploring the implementation problems of health care co-production

Rocco Palumbo & Rosalba Manna

To cite this article: Rocco Palumbo & Rosalba Manna (2018) What if things go wrong in co-producing health services? Exploring the implementation problems of health care co-production, *Policy and Society*, 37:3, 368-385, DOI: [10.1080/14494035.2018.1411872](https://doi.org/10.1080/14494035.2018.1411872)

To link to this article: <https://doi.org/10.1080/14494035.2018.1411872>



© 2018 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group



Published online: 10 Dec 2017.



[Submit your article to this journal](#)



Article views: 1675



[View related articles](#)



[View Crossmark data](#)

What if things go wrong in co-producing health services? Exploring the implementation problems of health care co-production

Rocco Palumbo^a and Rosalba Manna^b

^aDepartment of Management & Innovation Systems, University of Salerno, Fisciano, Italy; ^bDepartment of Quantitative Methods and Business Studies, University of Naples “Parthenope”, Naples, Italy

ABSTRACT

Patient-centered care and health services’ co-production are the cornerstones of the health care system of the future. These constructs rely on the reconceptualization of the patient as a co-deliverer of care. While studies about the intrinsic value-added of health services’ co-production are prominent, the risks of value co-destruction attached to patient involvement have been widely neglected. In an attempt to fill this gap, this paper draws on the ‘health literacy’ perspective to conceptually explore the ‘dark side’ of health services’ co-production. Value co-destruction is understood as a two-way street, where both the health care professionals and the patients are likely to walk, either intentionally or unintentionally. Individual and organizational health literacy are proposed as two essential ingredients of the recipe for effective health services’ co-production, reducing the risks of value co-destruction in health services’ provision.

KEYWORDS

Health literacy;
organizational health
literacy; co-production;
value co-creation; value
co-destruction

1. Introduction

1.1. Contextualizing service co-production in the health care service system

Just like other human public services, health services are inherently co-produced (Osborne, Radnor, Kinder, & Vidal, 2015). In particular, the co-production idea assumes that the synergies between the users and the providers in the design and delivery of public services pave the way for the establishment of a co-creating partnership, which is able to enhance the process of public value creation (Pestoff, 2012; Voorberg, Bekkers, Timeus, Tonurist, & Tummers, 2017). In this specific context, ‘... public value is about values characterizing the relationship between an individual and “society,” defining the quality of this relationship’ (Meynhardt, 2009, p. 206).

Even though the idea of public service co-production dates back to early ‘70s (Ostrom, 1972; Percy, 1978; Rich, 1978), still little is known about its distinguishing attributes and its

CONTACT Rocco Palumbo  rpalumbo@unisa.it

© 2017 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.
This is an Open Access article distributed under the terms of the Creative Commons Attribution-NonCommercial License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

consequences (Osborne, Radnor, & Strokosch, 2016). This is especially true dealing with the provision of health services (Palumbo, 2016), where a bio-medical, provider-led, and illness-centered approach to care is still dominant (Engel, 1978; Kirkengen et al., 2016). Nonetheless, co-production is currently recognized as a policy goal and a managerial priority to enhance the functioning of the health care service system (Palumbo, 2017a). On the one hand, health services' co-production has been argued to contribute in improving the sustainability of health care organizations (Durand et al., 2014), which are caught between increasing health needs and shrinking resources (Greer, 2014); on the other hand, the involvement of patients in the delivery of care is claimed to contribute in health services' quality improvement (Holmboe, Foster, & Ogrinc, 2016).

Service co-production shows distinguishing characteristics when it is applied to health care. First of all, it is not possible to identify a 'one size fits all' approach to health services co-production (Farmer, Taylor, Stewart, & Kenny, 2017); rather, tailored solutions should be arranged to meet the specific health needs of different patients (Palumbo, Annarumma, Musella, Adinolfi, & Piscopo, 2016). Besides, in several circumstances co-production of care is uneasy to implement, due to either lack of resources (e.g. living and health care environments uncondusive to patient involvement, Weaver, Wray, Zellin, Gautam, & Jupka, 2012) or inadequate individual abilities (e.g. low patient's interest and willingness to be involved in health services co-production, Gagliardi, Lemieux-Charles, Brown, Sullivan, & Goel, 2008).

Indeed, health services' co-production requires a process of enablement, which is aimed at allowing the patient to perform as a partner of the health care professionals, rather than as a mere recipient of health services (Kennedy, Gask, & Rogers, 2005). Patient empowerment is rapidly emerging as a popular metaphor to describe this enabling dynamic (Funnell, 2016). In spite of its multifacetedness (Gallivan, Burns, Bellows, & Eigenseher, 2012), patient empowerment could be ultimately understood as a process aimed at instilling in the patient greater awareness of the actions he or she has to take '... to obtain the greatest benefit from the health care services available' (Gruman et al., 2010, p. 351). Obviously, the patients' awareness of their role in the health care service system involves an increased willingness to actively participate in the design and delivery of care.

Such a conceptualization of patient empowerment is based on the assumption that the health care professionals are only one part of the health care service system. Patients are engaged in the protection and the promotion of their health status, performing as 'co-producers of health' (Coulter, 2012, p. 80). From this point of view, the health care professionals are called to perform two complementary tasks when interacting with the patients (Grönroos, 2008). On the one hand, they operate as patients' enablers, since they have to foster the engagement of the latter in the provision of care (Michie, Miles, & Weinman, 2003); on the other hand, they serve as patients' catalysts, arising their enthusiasm to be involved in the provision of care (Thompson & McCabe, 2012).

1.2. Challenging the optimistic interpretation of health services' co-production

Scholars have variously discussed the ambiguities which are attached to patient empowerment (Salmon & Hall, 2004). Nonetheless, the scientific literature is consistent in claiming that health services' co-production allows the achievement of relevant outcomes, including: the improvement of patient-provider relationships (Roseman, Osborne-Stafsnes, Amy, Boslaugh, & Slate-Miller, 2013), the enhancement of the patients' preference for shared

decision-making (Durand et al., 2014) and self-management of care (Simmons, Wolever, Bechard, & Snyderman, 2014), the advancement of patients' satisfaction (Manary, Boulding, Staelin, & Glickman, 2013), and the establishment of a safer health care environment (Sharp, Palmore, & Grady, 2014).

Questioning the prevailing optimism about the benefits brought by service co-production, Plé and Cáceres (2010) argued that the involvement of users in the delivery process may entail value co-destruction, rather than value co-creation. In particular, value co-destruction is likely to happen when either the user, the provider, or both of them participate in the design and delivery of services adopting conflicting perspectives, bringing incongruent inputs, and aiming at the achievement of diverging ends (Smith, 2013). In other words, value co-destruction is the by-product of the misuse of resources available during the service encounter (Echeverri & Skålén, 2011). Such a misuse could be either accidental or intentional (Plé & Cáceres, 2010): in the former case, the users and the providers are unaware of the clash of their interests and/or activities; in the latter case, they deliberately struggle to achieve selfish benefits from service provision.

The risks of value co-destruction are especially high in the health care environment. In fact, patients usually lack the knowledge, skills, experience, and expertise to be effectively involved in health services' co-production (Teunissen, Visse, & Abma, 2015). Several studies have shown that patients may be unwilling to participate in the provision of care, due to the physical and psychological weaknesses which are associated with the illness (Arnetz, Winblad, Arnetz, & Höglund, 2008). Moreover, patient involvement is likely to produce ethical tensions, leading to inequity in the access to care (Thomson, Murtagh, & Khaw, 2005). Also, the health care professionals may play a significant role in co-destroying value when they are urged to embrace a patient-centered approach to care. On the one hand, they could be interested in limiting the involvement of patients, in an attempt to reduce their loss of control on clinical decisions (Owens & Cribb, 2012). On the other hand, the traditional bio-medical paradigm, which neglects the patients' role in health services' design and delivery (Wood, 2012), still influences health care practices.

Drawing on these arguments, this paper conceptually explores the risks of value co-destruction in the patient-provider relationship, suggesting a theoretical framework which points out the implementation issues of health services' co-production. Health literacy is proposed as a fundamental ingredient of the recipe for value co-creation (Nutbeam, 2000). It is assumed that the enhancement of individual and organizational health literacy is imperative to realize the full potential of patient involvement (Palumbo, 2016). This article is organized as follows. The next section introduces the health literacy concept and suggests a distinction between individual and organizational health literacy. Besides, it points out the critical role played by individual and organizational health literacy in realizing patient involvement. In light of these arguments, the third section suggests a theoretical framework, which depicts how limited health literacy at the individual and organizational levels may produce value co-destruction. The fourth section discusses the practical implications which could be deduced from this study and identifies some interventions which may help to avoid value co-destruction. The concluding section reports some conceptual and practical insights, inspiring an agenda for further research.

2. Theoretical background

2.1. Individual health literacy as a requisite to health services' co-production

Health literacy has been widely understood as an individual trait (Lee, Arozullah, & Cho, 2004). In fact, the health literacy construct was formerly defined as the set of functional skills (Parker, Baker, Williams, & Nurss, 1995) which are needed to collect, process, understand, and use health information ('literacy', Baker, Williams, Parker, Gazmararian, & Nurss, 1999) and to handle numerical health-related data ('numeracy', Golbeck, Ahlers-Schmidt, Paschal, & Dismuke, 2005). Nutbeam (2008) proposed an expanded interpretation of health literacy, claiming that it includes both interactive (Rubin, Parmer, Freimuth, Kaley, & Okundaye, 2011) and critical skills (Chinn, 2011), beyond functional competencies. In particular, interactive health literacy consists of the personal willingness to build familiar and comfortable relationships with the health care professionals, which allow to enhance the quality of patient-provider communications. Critical health literacy engenders the ability to identify, analyze, and appreciate the alternatives available for the purposes of health protection and promotion, being a requisite for the appropriate access to care. Figure 1 provides a snapshot of the different shades of the health literacy construct and points out the role of functional, interactive, and critical skills in empowering patients to allow health services' co-production.

Sticking to these considerations, health literacy could be defined as 'the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions' (Baker, 2006, p. 878). From this point of view, individual health literacy turns out to be critical for the purpose of health services' co-production. Indeed, scholars agree in claiming that individual health literacy anticipates: the patients' interest and readiness to be involved in the self-management of care (Macabasco-O'Connell et al., 2011), the positive adoption of health seeking behaviors (Bourne et al., 2010), the adequate knowledge of health determinants (Gazmararian, Williams, Peel, & Baker, 2003), the propensity to use preventive health services (Scott,

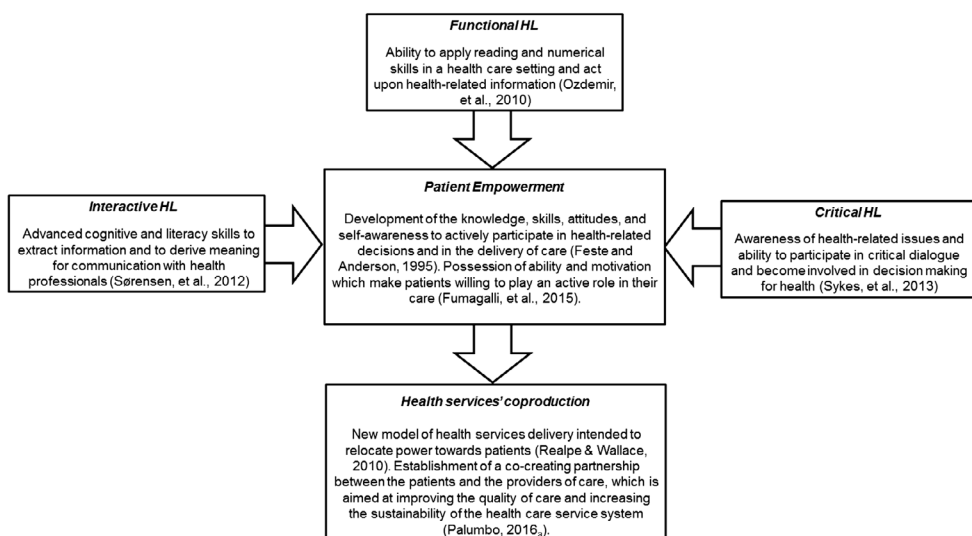


Figure 1. The role of HL in empowering patients. Source: authors' elaboration.

Gazmararian, Williams, & Baker, 2002), and the appropriate understanding of health information (Chugh, Williams, Grigsby, & Coleman, 2009). In contrast, problematic health literacy has been considered to hinder the establishment of collaborative relationships between the patients and the health care professionals, producing patient disengagement (Porr, Drummond, & Richter, 2006). The side-effects of inadequate health literacy are particularly significant for people suffering from multiple chronic conditions. In fact, as argued by Shippee, Allen, Leppin, May, and Montori (2015, p. 119), the involvement in health services' co-production of patients who lack adequate competences and capabilities is likely to be '... counterproductive and wasteful', due to their inability to bear the burden of the treatment (May, Montori, & Mair, 2009).

However, individual health literacy is not sufficient to allow health services' co-production. In fact, a resistant bio-medical culture and a provider-centered design of the health care system determine a professional-led provision of health services, which overlooks the value added of patient involvement (Batalden et al., 2015). Both the health care professionals and the health delivery systems usually lack adequate capabilities to achieve patient-centered care and to realize health services' co-production (Bernabeo & Holmboe, 2013). Therefore, the enhancement of individual health literacy should be merged to a greater ability of health care providers to engage the patient in a partnership intended to value co-creation (Sabadosa & Batalden, 2013).

2.2. Illuminating the dark side of health literacy: organizational health literacy

As compared with individual health literacy, organizational health literacy has been overlooked for a long time by the scientific literature (Parker & Hernandez, 2012). It concerns the health care organizations and providers' ability to '... make it easier for people to navigate, understand, and use information and services to take care of their health' (Brach, Dreyer, & Schillinger, 2014, p. 213). Organizational health literacy is critical for the evolution of health care providers from disease relievers – that is to say self-reliant and specialized healers of ill health status – to enablers – that is to say facilitators of patients' activation and involvement in the provision of care (Adinolfi, Starace, & Palumbo, 2016). Among others, Brach et al. (2012) suggested ten attributes which characterize a health literate health care organization.

Health literate health care organizations are assumed to: (1) contemplate health literacy into organizational planning and quality improvement; (2) encourage a leadership which recognizes the importance of health literacy to the organizational mission and values; (3) engage the population served in the design of health-related information and services in a perspective of continuous health literacy improvement; (4) create favourable organizational conditions to overcome the stigma which is attached to problematic health literacy; (5) improve the ability of health care providers to handle the special needs of people living with limited health literacy; (6) consider the needs of those who live with inadequate health literacy at all points of contact between the patients and the providers; (7) provide patients with easy access to health-related information; (8) design and distribute easy to understand written, audio, and visual materials; (9) improve inter-organizational relationships with the purpose of enhancing the providers' capacity to address health literacy in high-risk situations; and 10) clearly communicate to low health literate patients the mechanism of health services' co-payment.

Willis et al. (2014, p. 518) suggested that three different types of interventions are concomitantly needed to enhance organizational health literacy: (1) government actions; (2) organizational and practitioner actions; and (3) partnership actions. The first category falls outside the focus of this paper, since it does not concern the interaction between the patients and the providers of care. Rather, it deals with the interdependencies between the health literacy concept, the health system, the educational system, and other relevant social and cultural systems (Low, Low, Bauml, & Huynh, 2005). Organizational, practitioner, and partnership actions are essential to facilitate health services' co-production. On the one hand, organizational and practitioner actions involve: (1) the development of a shared organizational vision about health literacy; (2) the inclusion of a specific health literacy concern in organizational policies; (3) the identification of health literacy champions, who are called to foster the organizational commitment to meet the special information needs of poor health literate patients; and (4) the engagement of health care professionals in the initiatives aimed at realizing health services' co-production. On the other hand, partnership actions include the establishment of collaborative and cooperative relationships between the entities which operate within the health care service system, in order to encourage a systemic effort toward health literacy. Figure 2 depicts the different shades of the organizational health literacy constructs and emphasizes its role in empowering patients.

Merging the individual and the organizational health literacy concepts, it could be maintained that health services' co-production is a two-way street. It simultaneously relies on the ability of patients to be engaged in the provision of care as active partners of the health care professionals and on the willingness of the latter to recognize the patients as active co-producers of health services. When either individual health literacy, organizational health literacy, or both of them are lacking, patient involvement and health services' co-production are undermined. In these circumstances the relationship between the health care providers and the patients is biased, paving the way for momentous side-effects.



Figure 2. The role of OHL in empowering patients. Source: authors' elaboration.



3. The side effects of service co-production: value co-destruction in health care

3.1. Not always co-creation: value co-destruction in health services' co-production

As argued above, the relationship between public services' co-production and value co-creation has been widely discussed (see, among others, Gebauer, Johnson, & Enquist, 2010; Voorberg, Bekkers, & Tummers, 2015). Alternatively, insights on the risks of value co-destruction which are attached to either inadequate or failed co-production are uncommon. This is surprising, since the provision of public services is the result of one or more interactions between agents who may be unable to effectively participate in co-production efforts (Fledderus, Brandsen, & Honingh, 2013).

This circumstance is particularly common in the health care environment (Johnston & Herzig, 2006), where the patients and the health care professionals are likely to bring diverging aims and conflicting perspectives (Upshur, Bacigalupe, & Luckmann, 2010). On the one hand, the patients are likely to adopt a first-person perspective, since they immediately perceive the decline of psychic and physical well-being which is brought by the illness (Holm, 2005). On the other hand, the health care professionals are used to embrace a third-person perspective, which leads them to appreciate health-related issues in technical and reductionist terms (Wilson, Kendall, & Brooks, 2007). As a consequence, it is possible that these two agents bear different points of view and contrasting beliefs in the process of health services' provision, which represent important obstacles to the establishment of a co-creating partnership (Garrity & Lawson, 1989).

The patients and the providers of care should be understood as two complementary entities, who inherently collaborate and share material and non-material resources for the purposes of health protection and promotion (Osei-Frimpong, Wilson, & Lemke, 2016). Therefore, the embracement of different views and diverging aims may anticipate failed or inadequate health services' co-production. Failed co-production usually results in a professional-led patient-provider relationship, which does not imply any value added as compared with the traditional bio-medical approach to care (Salmon & Hall, 2004). Differently, inadequate co-production involves biased patient-provider relationships, which may lead to misuse, overuse, or underuse of health resources available (Tomes, 2007). The misuse of health resources engenders the achievement of deficient health outcomes and low well-being, undermining the effectiveness of the health care service system (Hardyman, Daunt, & Kitchener, 2015). Among others, inadequate individual and organizational health literacy perform as important determinants of conflicting patient-provider relationships, thus paving the way for value co-destruction processes (Adkins & Corus, 2009).

3.2. The role of limited individual health literacy in producing value co-destruction

People who live with problematic health literacy are unwilling to actively participate in the design and delivery of care; moreover, they have been found to improperly access health services (Andrus & Roth, 2002). Inadequate health literacy jeopardizes the patients' understanding of diagnoses and treatments suggested by health care professionals. Hence, it thwarts medication adherence (Ngoh, 2009), undermines patients' compliance (Kalichman, Ramachandran, & Catz, 1999), and discourages the appropriate use of health resources (Franzen, Mantwill, Rapold, & Schulz, 2014). In addition, low health literacy prevents the

opportunity to fill the cognitive gaps which are produced by inadequate individual skills through the establishment of clear and comfortable relationships with the providers of care (Hironaka & Paasche-Orlow, 2007). In fact, limited health literacy restrains the patients' ability to extract meaningful information from the multiple communications they establish with the different sources of health information available, including health care professionals. Lastly, limited health literacy involves poor awareness of health phenomena and reinforces the patients' unwillingness to be engaged in a critical dialogue with the providers of care (Heijmans, Waverijn, Rademakers, van der Vaart, & Rijken, 2015).

Summarizing these points, problematic individual health literacy sets the condition for an unbalanced patient-provider relationship. In these circumstances, patient involvement may lead to unexpected consequences, such as the exacerbation of the patients' health conditions and the related growth in the demand for care (Hardie, Kyanko, Busch, Losasso, & Levin, 2011). Indeed, those who live with inadequate health literacy are unable to properly access health services, being exposed to high risks of inappropriateness (Schumacher et al., 2013). Obviously, the process of value co-destruction engendered by poor individual health literacy does not solely concern the fall in the individual well-being. Also, it implies increased health care costs, with drawbacks on the health care system's sustainability (Palumbo, 2017b).

As an illustrative example, Paasche-Orlow (2011) reported on the real experience of a 76-year-old man showing multiple chronic conditions and disclosing inadequate health literacy, who turned out to be unable to actively participate in the design and delivery of care. In this case, failed co-production engendered the misuse of health resources, especially in terms of inappropriate access to hospital services. Inadequate health literacy upsets the patient-provider relationships, determining conflicts, rather than service co-production. It is worth noting that such conflicts may also entail either an underuse of appropriate health services, as in the case of preventive services (Scott et al., 2002), or an overuse of potentially inappropriate health services, as in the case of emergency care (Schumacher et al., 2013).

Drawing on the propositions of Plé and Cáceres (2010) and Echeverri and Skálén (2011), these processes of value co-destruction are mainly accidental. In other words, they are produced by the patients' inability to deal with complex health-related phenomena and to interact with the health care professionals to fill their knowledge gap (Robertson, Polonsky, & McQuilken, 2014). In line with these arguments, several scholars pointed out that the engagement in health services' provision of patients who show problematic health literacy reinforces the dependency of the latter on the health care professionals, resulting to be counter-productive (Schulz & Nakamoto, 2013). Inadequate health-related knowledge, poor self-efficacy perception, and limited ability to handle health information perform as the main determinants of biased patient-provider relationships, determining value co-destruction rather than value co-creation (Osborn, Paasche-Orlow, Bailey, & Wolf, 2011).

3.3. Value co-destruction enacted by limited organizational health literacy

The process of value co-destruction in the health care environment could be produced by inadequate organizational health literacy, too. In fact, health care organizations have been usually found to be unable to establish a setting which empowers patients and enables them to factually perform as co-producers of care (Altin & Stock, 2015; Fumagalli, Radaelli, Lettieri, Bertele, & Masella, 2015). Poor health literate health care organizations neglect that the patients need a friendly and comfortable environment to be involved in the provision of

care (Annarumma & Palumbo, 2016). However, when the enhancement of organizational health literacy is not considered among the managerial priorities of health care organizations, there is a significant risk that patient engagement results to be harmful for both the users and the providers of care (Palumbo & Annarumma, 2016). On the one hand, the patients meet significant hurdles in participating in the provision of care and suffer from an increased dependence on the health care professionals, who maintain the control on health-related information. On the other hand, cultural and organizational constraints prevent the health care professionals to establish a patient-centered approach to care; quite the opposite, they are induced to stick to the traditional illness-centered bio-medical approach, which discourages patient involvement (Légaré & Witteman, 2013).

In sum, inadequate organizational health literacy involves a hostile health care environment, where print and verbal health-related information are difficult to access and inadequate attention is paid to the special information needs of those who live with limited functional, interactive, and critical health-related skills (Livaudais-Toman, Burke, Napoles, & Kaplan, 2014). As compared with limited individual health literacy, inadequate organizational health literacy turns out to be an intentional determinant of value co-destruction (Palumbo, 2016). Actually, the lack of organizational efforts aimed at enhancing the patients' ability to navigate the health care environment and inciting the health care professionals to engage patients in the provision of care is the byproduct of a voluntary managerial and cultural approach, which prevents the transition toward patient-centered care (Koh, Baur, Brach, Harris, & Rowden, 2013).

In line with these considerations, Weaver et al. (2012) claimed that low awareness of health literacy-related issues at the organizational level, health care providers uncertainty about their role in addressing the special information needs of people living with inadequate health literacy, and lack of tailored policies and protocols to improve the friendliness of health care organizations are the main barriers to the implementation of patient-centered care. It is clear that the improvement of organizational health literacy strongly relies on the role of health care professionals (Brach et al., 2014). In fact, they have the opportunity to mediate between the inadequate capability of patients to perform as health services' co-producers and the limited ability of health care organizations to encourage patient involvement in the provision of care. From this point of view, a health literate health care organization is based on a behavior change model (Michie, van Stralen, & West, 2011), which solicits the health care professionals' capability, opportunity, and motivation to embrace a patient-centered approach to care.

3.4. Health literacy as a requisite to health services' co-production

Figure 3 graphically synthesizes the role of health literacy – at both the individual and organizational levels – in realizing health services' co-production. In sum, the idea of health care co-production rejects the prevailing bio-medical model, which maintains that the health care professionals are the sole relevant agents in the process of health services' design and delivery and identifies the patient as a mere recipient of care. Rather, the patients are assumed to own a critical set of sleeping assets, which are generally disregarded and, consequently, not activated to support the functioning of the health care service system.

Patient empowerment is aimed at enabling the patients' sleeping resources to allow health services' co-production and value co-creation. Hence, patient empowerment encourages

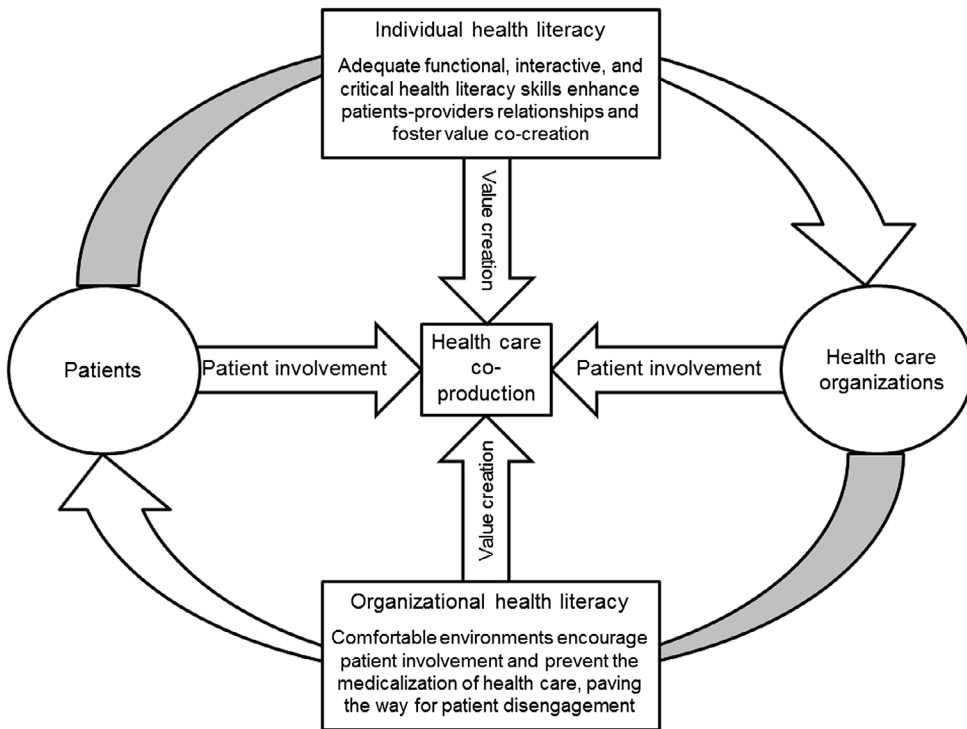


Figure 3. The process of health care co-production. Source: Author's elaboration.

patients to participate in the decisions and activities which concern the protection and the promotion of individual wellbeing. However, in most of the cases the attention is focused on the institutional conditions which lead to user empowerment, while the organizational requisites for the effective involvement of patients in the provision of care are generally neglected. Nonetheless – in addition to patient empowerment – the co-production potential of health care organizations should be enhanced.

Ultimately, both individual and organizational health literacy are fundamental ingredient of the recipe for effective health services' co-production. On the one hand, individual health literacy affects the patients' ability to properly function in the health care service system. On the other hand, organizational health literacy performs an enabling factor: it involves the establishment of a favourable environment, which stimulates the users to take part in health services' co-production. Hence, inadequate individual health literacy undermines patient empowerment, discouraging self-management of care, producing low self-efficacy perception, and frustrating the patient-provider relationship; otherwise a poor health literate health care environment impoverishes the patients' willingness to deal with complex health-related phenomena, strengthening their reliance on the providers of care.

It is worth noting that inadequate organizational health literacy prevents health services' co-production also when the patients have adequate functional, interactive, and critical health-related skills. Actually, limited organizational health literacy implies a hostile environment, which inhibits patient engagement and prevents health services' co-production. Similarly, the mix of adequate organizational health literacy and problematic individual health literacy may be harmful: it produces increased risks of misuse of health resources,

which is mainly generated by the problematic ability of patients to understand the health information available for the purposes of health protection and promotion. In light of these considerations, individual and organizational health literacy should be dealt with as conjoined issues, which are concomitantly required to realize patient empowerment and to allow health services' co-production.

4. Discussion: how to avoid value co-destruction through health literacy

Individual and organizational health literacy should be dealt with as two faces of the same coin. Both of them are needed to empower patients and, therefore, to set the conditions for health services' co-production (Wang et al., 2016). As depicted in Figure 3, the disregard of either individual health literacy, organizational health literacy, or both of them generates momentous drawbacks on the patient-provider relationship. Inadequate health literacy prevents the patients' contribution in health services' design and delivery. In addition, it compels the health care professionals to embrace an illness-centered approach to care, which conceives the patient as a mere recipient of health services (Mackey, Doody, Werner, & Fullen, 2016). Ultimately, lack of efforts aimed at promoting individual and organizational health literacy engenders biased patient-provider relationships, which increase the risks of value co-destruction in the health care environment.

In spite of these considerations, scholars and practitioners are used to deal with individual and organizational health literacy as unrelated issues (French & Hernandez, 2013), neglecting the interdependencies which exist among them (Rikard & McKinney, 2017). From this point of view, it is not surprising that little is known about the overall impacts of inadequate health literacy on both health services' quality and health outcomes (Adsul et al., 2017). In fact, the evidence supporting the effectiveness of the interventions intended to improve individual health literacy may be considered to be unreliable, since the role played by organizational health literacy in promoting patient involvement and in fostering the health care professionals' willingness to perform as enablers of the patients' sleeping resources is generally overlooked.

Tailored and systemic interventions to acknowledge and enhance the synergies between individual and organizational health literacy are required, in order to foster health services' co-production and avoid the risks of value co-destruction (Realpe & Wallace, 2010). Low health literate patients are not able to deal with complex health-related phenomena, are unwilling to establish a fair and comfortable relationship with the providers of care, and are not proficient in discriminating between the pros and cons of alternative health treatments (Paasche-Orlow & Wolf, 2007). Therefore, they should be educated in health-related issues, in an attempt to improve their self-efficacy perception and the awareness of their role during the service encounter. Sticking to these considerations, the patient-provider relationship should be framed as a contact between two experts, where both of them contribute in the success of health care provision (Pawlikowska, Zhang, Griffiths, van Dalen, & van der Vleuten, 2012).

Notwithstanding, the improvement of individual health literacy is trivial, if it is not supported by the advancement of organizational health literacy. When the importance of health literacy to the policies and strategies of health care organizations is neglected, the health care professionals are not supported to achieve patient engagement. Rather, they are likely to preserve their loyalty to the bio-medical model, which sterilizes the patients'

contribution in the provision of care (Briglia, Perlman, & Weissman, 2015). Even though health literate patients are able – in theory – to participate in the process of health services' design and delivery, they are restrained to do so by the presence of a hostile environment, which instils the adoption of a 'fix-it' approach to care in the health care professionals. Hence, inadequate organizational health literacy entails patient disengagement, which is likely to lead to disagreements and conflicts in the patient-provider relationship. This situation engenders the misuse of health resources, as well as the achievement of inadequate health outcomes (von Wagner, Steptoe, Wolf, & Wardle, 2009).

In most of the cases, the inclusion of health literacy within organizational planning is prevented by the lack of policy and managerial tools to establish a health literate health care environment. Appropriate interventions to check the levels of organizational health literacy should be arranged and used, in order to inspire deep processes of organizational change in the health care environment. The assessment of organizational health literacy should inform corrective structural and managerial actions to increase the patients' ability to contribute in the provision of care. Moreover, the enhancement of inter-organizational relationships between different health care organizations may help in facilitating the access of patients and health care professionals to community-based health literacy resources, which support health services' co-production and allow to reduce the risks of health resources' misuse (Palumbo, 2017a).

To fully exploit the potential of health services' co-production, the sensitivity of health care professionals to health literacy issues should be aroused. Public management scholars have variously stressed the role played by professionals and regular providers as catalysts of co-production efforts (van Eijk & Steen, 2014). In the specific health care context, the health care professionals have an important stake in realizing patient involvement: firstly, they have the opportunity to contribute in the process of patient activation, enabling them to perform as health services' co-producers (Carman et al., 2013); besides, they are able to foster structural and cultural changes in the organizational context, which are consistent with a patient-centered approach to care (Johnson et al., 2008). In fact, patient involvement relies on a deep redesign of organizational structures and processes, which should be intended to move both patients and health care professionals toward health services' co-production (Gilardi, Guglielmetti, Marsilio, & Sorrentino, 2016).

5. Conclusions

Individual and organizational health literacy are two essential requisites to patient empowerment and health services' co-production. Therefore, they are concomitantly needed to enhance the patient-provider relationship and to pave the way for the establishment of a co-creating partnership between them during the service encounter. In fact, the enhancement of individual and organizational health literacy prevent things to go wrong in co-producing health services, minimizing the risks of value co-destruction and setting the conditions for the achievement of a patient-centered approach to care.

In spite of the growing attention paid to patient-centered care and patient involvement at both the policy and practical levels, the scientific and the professional literatures have overlooked the importance of organizational health literacy to accomplish them. Most of the attention has been focused on the patients' ability to collect, process, and understand health information, in order to effectively navigate the health care service system. Alternatively,

little is known about the drawbacks of limited organizational health literacy on patient empowerment and health services' co-production.

The theoretical framework suggested in this article tries to nourish the debate about the future perspectives of health services' co-production, in an attempt to inspire advancements in health policies and practices. Individual and organizational health literacy are imperative to the implementation of health care co-production. In fact, the lack of either individual or organizational health literacy produces impaired patient-provider relationships, which are likely to result in the misuse, overuse, or underuse of health services available, thus engendering value co-destruction processes.

Health policy makers should merge individual and organizational health literacy in a systemic and overarching concept, using it to inspire the reorganization of the health care service system around a patient-centered model of care. A systemic health literacy approach will allow to meet the conjoined purposes of patient empowerment and health services' co-production, addressing the individual and organizational issues which prevent the involvement of patients in the co-design and co-delivery of care. Obviously, further conceptual and empirical research is urged to figure out the complex link which relates individual health literacy, organizational health literacy, and health care co-production, clarifying how they interact to enhance value co-creation. Also, future developments should be addressed to investigate how health care professionals could support the establishment of a friendly and comfortable health care environment, which encourages the patients to partner with the health care professionals in health services' design and delivery. Lastly, the interplay between health literacy and health services' co-production should be examined at both the macro (i.e. health care systems), meso (i.e. health care organizations) and micro levels (i.e. patient-provider relationships), in order to implement a health service ecosystem which relies on patient empowerment and health services' co-production in an attempt to improve the effectiveness and the appropriateness of care.

Disclosure statement

No potential conflict of interest was reported by the authors.

Notes on contributors

Rocco Palumbo is a licensed associate professor of Organization Studies at the University of Salerno, Italy where he teaches management and organization of public sector entities. Research interests include, but are not limited to: health literacy, organizational health literacy, patient empowerment, human resource management and inter-organizational relationships.

Rosalba Manna is a research fellow in Statistics at the University "Parthenope" of Naples, Italy. Also, she is national evaluator of mandatory schools' performances at the Italian Ministry of Education, University and Research and fellow statistician at the Italian Institute of Statistics. Research interests include, but are not limited to: wage inequalities, education, social inequalities, and health literacy.

References

- Adinolfi, P., Starace, F., & Palumbo, R. (2016). Health outcomes and patient empowerment: The case of health budgets in Italy. *Journal of Health Management, 18*(1), 117–133.
- Adkins, N. R., & Corus, C. (2009). Health literacy for improved health outcomes: Effective capital in the marketplace. *Journal of Consumer Affairs, 43*(2), 199–222.

- Adsul, P., Wray, R., Gautam, K., Jupka, K., Weaver, N., & Wilson, K. (2017). Becoming a health literate organization: Formative research results from healthcare organizations providing care for undeserved communities. *Health Services Management Research*. Published on-line ahead of print on August 29, 2017. doi:10.1177/0951484817727130
- Altin, S., & Stock, S. (2015). Health literate healthcare organizations and their role in future healthcare. *Nursing and Care*, 4(238). doi:10.4172/2167-1168.1000238
- Andrus, M. R., & Roth, M. T. (2002). Health literacy: A review. *Pharmacotherapy*, 22(3), 282–302.
- Annarumma, C., & Palumbo, R. (2016). Contextualizing health literacy to health care organizations. Exploratory insights. *Journal of Health Management*, 18(4), 611–624.
- Arnetz, J. E., Winblad, U., Arnetz, B. B., & Höglund, A. T. (2008). Physicians' and nurses' perceptions of patient involvement in myocardial infarction care. *European Journal of Cardiovascular Nursing*, 7(2), 113–120.
- Baker, D. W. (2006). The meaning and the measure of health literacy. *Journal of General Internal Medicine*, 21(8), 878–883.
- Baker, D. W., Williams, M. W., Parker, R. M., Gazmararian, J. A., & Nurss, J. (1999). Development of a brief test to measure functional health literacy. *Patient Education and Counseling*, 38(1), 33–42.
- Batalden, M., Batalden, P., Margolis, P., Seid, M., Armstrong, G., Opipari-Arrigan, L., & Hartung, H. (2015). Coproduction of healthcare service. *BMJ Quality & Safety*, 25(7), 509–517.
- Bernabeo, E., & Holmboe, E. S. (2013). Patients, providers, and systems need to acquire a specific set of competencies to achieve truly patient-centered care. *Health Affairs*, 32(2), 250–258.
- Bourne, P. A., Morris, C., Charles, C. A. D., Eldemire-Shearer, D., Kerr-Campbell, M. D., & Crawford, T. W. (2010). Health literacy and health seeking behavior among older men in a middle-income nation. *Patient Related Outcome Measures*, 1, 39–49.
- Brach, C., Dreyer, B. P., Schyve, P., Hernandez, L. M., Baur, C., Lemerise, A. J., & Parker, R. (2012). *Attributes of a health literate organization*. Washington, DC: National Academies Press.
- Brach, C., Dreyer, B. P., & Schillinger, D. (2014). Physicians' roles in creating health literate organizations: A call to action. *Journal of General Internal Medicine*, 29(2), 273–275.
- Briglia, E., Perlman, M., & Weissman, M. A. (2015). Integrating health literacy into organizational structures. *Physician Leadership Journal*, 2(2), 66–69.
- Carman, K. L., Dardess, P., Maurer, M., Sofaer, S., Adams, K., Bechtel, C., & Sweeney, J. (2013). Patient and family engagement: A framework for understanding the elements and developing interventions and policies. *Health Affairs*, 32(2), 223–231.
- Chinn, D. (2011). Critical health literacy: A review and critical analysis. *Social Science & Medicine*, 73(1), 60–67.
- Chugh, A., Williams, M. V., Grigsby, J., & Coleman, E. A. (2009). Better transitions: Improving comprehension of discharge instructions. *Frontiers of Health Services Management*, 25(3), 11–32.
- Coulter, A. (2012). Patient engagement – What works? *Journal of Ambulatory Care Management*, 35(2), 80–89.
- Durand, M. A., Carpenter, L., Dolan, H., Bravo, P., Mann, M., Bunn, F., & Elwyn, G. (2014). Do interventions designed to support shared decision-making reduce health inequalities? A systematic review and meta-analysis. *PLoS ONE*, 9(4), e94670.
- Echeverri, P., & Skälén, P. (2011). Co-creation and co-destruction: A practice-theory based study of interactive value formation. *Marketing Theory*, 11(3), 351–373.
- van Eijk, C. J. A., & Steen, T. P. S. (2014). Why people co-produce: Analysing citizens' perceptions on co-planning engagement in health care services. *Public Management Review*, 16(3), 358–382.
- Engel, G. L. (1978). The biopsychosocial model and the education of health professionals. *Annals of the New York Academy of Sciences*, 310(1), 169–181.
- Farmer, J., Taylor, J., Stewart, E., & Kenny, A. (2017). Citizen participation in health services co-production: A roadmap for navigating participation types and outcomes. *Australian Journal of Primary Health*. Published on-line ahead of print on June 23, 2017. doi:10.1071/PY16133
- Fledderus, J., Brandsen, T., & Honingh, M. (2013). Restoring trust through the co-production of public services: A theoretical elaboration. *Public Management Review*, 16(3), 424–443.
- Franzen, J., Mantwill, S., Rapold, R., & Schulz, P. J. (2014). The relationship between functional health literacy and the use of the health system by diabetics in Switzerland. *The European Journal of Public Health*, 24(6), 997–1003.

- French, M., & Hernandez, L. M. (2013). *Organizational change to improve health literacy: Workshop summary*. Washington, DC: National Academy Press.
- Fumagalli, L. P., Radaelli, G., Lettieri, E., Bertele, P., & Masella, C. (2015). Patient Empowerment and its neighbours: Clarifying the boundaries and their mutual relationships. *Health Policy*, 119(3), 384–394.
- Funnell, M. M. (2016). Patient empowerment: What does it really mean? *Patient Education and Counseling*, 99(12), 1921–1922.
- Gagliardi, A. R., Lemieux-Charles, L., Brown, A. D., Sullivan, T., & Goel, V. (2008). Barriers to patient involvement in health service planning and evaluation: An exploratory study. *Patient Education and Counseling*, 70(2), 234–241.
- Gallivan, J., Burns, K. K., Bellows, M., & Eigenseher, C. (2012). The many faces of patient engagement. *Journal of Participatory Medicine*, 4, e32.
- Garrity, T. F., & Lawson, E. J. (1989). Patient-physician communication as a determinant of medication misuse in older, minority women. *Journal of Drug Issues*, 19(2), 245–259.
- Gazmararian, J. A., Williams, M. V., Peel, J., & Baker, D. W. (2003). Health literacy and knowledge of chronic disease. *Patient Education and Counseling*, 51(3), 267–275.
- Gebauer, H., Johnson, M., & Enquist, B. (2010). Value co-creation as a determinant of success in public transport services: A study of the Swiss federal railway operator (SBB). *Managing Service Quality*, 20(6), 511–530.
- Gilardi, S., Guglielmetti, C., Marsilio, M., & Sorrentino, M. (2016). Co-production in healthcare: Moving patient engagement towards a managerial approach. In M. Fugini, E. Bracci, & M. Sicilia (Eds.), *Co-production in the public sector. Springerbriefs in applied sciences and technology* (pp. 77–95). Cham: Springer.
- Golbeck, A. L., Ahlers-Schmidt, C. R., Paschal, A. M., & Dismuke, S. E. (2005). A definition and operational framework for health numeracy. *American Journal of Preventive Medicine*, 29(4), 375–376.
- Greer, S. L. (2014). The three faces of European Union health policy: Policy, markets, and austerity. *Policy & Society*, 33(1), 13–24.
- Grönroos, C. (2008). Service logic revisited: Who creates value? And who co-creates? *European Business Review*, 20(4), 298–314.
- Gruman, J., Rovner, M. H., French, M. E., Jeffress, D., Sofaer, S., Shaller, D., & Prager, D. J. (2010). From patient education to patient engagement: Implications for the field of patient education. *Patient Education and Counseling*, 78(3), 350–356.
- Hardie, N. A., Kyanko, K., Busch, S., Losasso, A. T., & Levin, R. A. (2011). Health literacy and health care spending and utilization in a consumer-driven health plan. *Journal of Health Communication*, 16(3), 308–321.
- Hardyman, W., Daunt, K. L., & Kitchener, M. (2015). Value co-creation through patient engagement in health care: A micro-level approach and research agenda. *Public Management Review*, 17(1), 90–107.
- Heijmans, M., Waverijn, G., Rademakers, J., van der Vaart, R., & Rijken, M. (2015). Functional, communicative and critical health literacy of chronic disease patients and their importance for self-management. *Patient Education and Counseling*, 98(1), 41–48.
- Hironaka, L. K., & Paasche-Orlow, M. K. (2007). The implications of health literacy on patient-provider communication. *Archives of Disease in Childhood*, 93(5), 428–432.
- Holm, S. (2005). Justifying patient self-management – Evidence based medicine or the primacy of the first person perspective. *Medicine, Health Care and Philosophy*, 8(2), 159–164.
- Holmboe, E. S., Foster, T. C., & Ogrinc, G. (2016). Co-creating quality in health care through learning and dissemination. *Journal of Continuing Education in Health Professions*, 36(1), S16–S18.
- Johnson, B., Abraham, M., Conway, J., Simmons, L., Edgman-Levitan, S., Sodomka, P., ... Ford, D. (2008). *Partnering with patients and families to design a patient and family-centered health care system recommendations and promising practices*. Bethesda, MD: Institute for Patient- and Family-Centered Care.
- Johnston, M. E., & Herzig, R. M. (2006). The interpretation of “culture”: Diverging perspectives on medical provision in rural Montana. *Social Science & Medicine*, 63(9), 2500–2511.

- Kalichman, S. C., Ramachandran, B., & Catz, S. (1999). Adherence to combination antiretroviral therapies in HIV patients of low health literacy. *Journal of General Internal Medicine*, 14(5), 267–273.
- Kennedy, A., Gask, L., & Rogers, A. (2005). Training professionals to engage with and promote self-management. *Health Education Research*, 20(5), 567–578.
- Kirkengen, A. L., Ekeland, T. J., Getz, L., Hetlevik, I., Schei, E., Ulvestad, E., & Vetlesen, A. J. (2016). Medicine's perception of reality – A split picture: Critical reflections on apparent anomalies within the biomedical theory of science. *Evaluating Clinical Practice*, 22(4), 496–501.
- Koh, H. K., Baur, C., Brach, C., Harris, L. M., & Rowden, J. N. (2013). Toward a systems approach to health literacy research. *Journal of Health Communication*, 18(1), 1–5.
- Lee, S.-Y. D., Arozullah, A. M., & Cho, Y. I. (2004). Health literacy, social support, and health: A research agenda. *Social Science & Medicine*, 58(7), 1309–1321.
- Légaré, F., & Witteman, H. O. (2013). Shared decision making: Examining key elements and barriers to adoption into routine clinical practice. *Health Affairs*, 32(2), 276–284.
- Livaudais-Toman, J., Burke, N. J., Napoles, A., & Kaplan, C. P. (2014). Health literate organizations: Are clinical trial sites equipped to recruit minority and limited health literacy patients? *Journal of Health Disparities Research and Practice*, 7(4), 1–13.
- Low, M. D., Low, J. B., Baumler, E. R., & Huynh, P. T. (2005). Can education policy be health policy? Implications of research on the social determinants of health. *Journal of Health Politics, Policy and Law*, 30(6), 1131–1162.
- Macabasco-O'Connell, A., DeWalt, D. A., Broucksou, K. A., Hawk, V., Baker, D. W., Schillinger, D., et al. (2011). Relationship between literacy, knowledge, self-care behaviors, and heart failure-related quality of life among patients with heart failure. *Journal of General Internal Medicine*, 26(9), 979–986.
- Mackey, L. M., Doody, C., Werner, E. L., & Fullen, B. (2016). Self-management skills in chronic disease management. What role does health literacy have? *Medical Decision Making*, 36(6), 741–759.
- Manary, M. P., Boulding, W., Staelin, R., & Glickman, S. W. (2013). The patient experience and health outcomes. *The New England Journal of Medicine*, 368, 201–203.
- May, C., Montori, V. M., & Mair, F. S. (2009). We need minimally disruptive medicine. *British Medical Journal*, 339(b2803). doi:10.1136/bmj.b2803
- Meynhardt, T. (2009). Public value inside: What is public value creation? *International Journal of Public Administration*, 32(3/4), 192–219.
- Michie, S., Miles, J., & Weinman, J. (2003). Patient-centredness in chronic illness: What is it and does it matter? *Patient Education and Counseling*, 51(3), 197–206.
- Michie, S., van Stralen, M. M., & West, R. (2011). The behaviour change wheel: A new method for characterising and designing behaviour change interventions. *Implementation Science*, 6(42). doi:10.1186/1748-5908-6-42
- Ngoh, L. N. (2009). Health literacy: A barrier to pharmacist–patient communication and medication adherence. *Journal of the American Pharmacists Association*, 49(5), e132–e149.
- Nutbeam, D. (2000). Health literacy as a public health goal: A challenge for contemporary health education and communication strategies into the 21st century. *Health Promotion International*, 15(3), 259–267.
- Nutbeam, D. (2008). The evolving concept of health literacy. *Social Science & Medicine*, 67(12), 2072–2078.
- Osborn, C. Y., Paasche-Orlow, M. K., Bailey, S. C., & Wolf, M. S. (2011). The mechanisms linking health literacy to behavior and health status. *American Journal of Health Behavior*, 35(1), 118–128.
- Osborne, S. P., Radnor, Z., Kinder, T., & Vidal, I. (2015). The SERVICE framework: A public-service-dominant approach to sustainable public services. *British Journal of Management*, 26(3), 424–438.
- Osborne, S. P., Radnor, Z., & Strokosch, K. (2016). Co-production and the co-creation of value in public services: A suitable case for treatment? *Public Management Review*, 18(5), 639–653.
- Osei-Frimpong, K., Wilson, A., & Lemke, F. (2016). Patient co-creation activities in healthcare service delivery at the micro level: The influence of online access to healthcare information. *Technological Forecasting and Social Change*. Published on-line ahead of print on April 15, 2016, doi:10.1016/j.techfore.2016.04.009

- Ostrom, E. (1972). Metropolitan reform: Propositions derived from two traditions. *Social Science Quarterly*, 53(3), 474–493.
- Owens, J., & Cribb, A. (2012). Conflict in medical co-production: Can a stratified conception of health help? *Health Care Analysis*, 20(3), 268–280.
- Paasche-Orlow, M. K. (2011). Caring for patients with limited health literacy. *JAMA*, 306(10), 1122–1129.
- Paasche-Orlow, M. K., & Wolf, M. S. (2007). The causal pathways linking health literacy to health outcomes. *American Journal of Health Behavior*, 31(1), 19–26.
- Palumbo, R. (2016). Designing health-literate health care organization: A literature review. *Health Services Management Research*, 29(3), 79–87.
- Palumbo, R. (2017a). *The bright side and the dark side of patient empowerment. Co-creation or co-destruction of value in the healthcare environment*. New York, NY: Springer.
- Palumbo, R. (2017b). Examining the impacts of health literacy on healthcare costs. An evidence synthesis. *Health Services Management Research*. Published on-line ahead of print on October, 2017. doi:10.1177/0951484817733366
- Palumbo, R., & Annarumma, C. (2016). Empowering organizations to empower patients: An organizational health literacy approach. *International Journal of Healthcare Management*. Published on-line ahead of print on November, 14, 2016, doi:10.1080/20479700.2016.1253254
- Palumbo, R., Annarumma, C., Musella, M., Adinolfi, P., & Piscopo, G. (2016). The Italian health literacy project: Insights from the assessment of health literacy skills in Italy. *Health Policy*, 120(9), 1087–1094.
- Parker, R. M., & Hernandez, L. M. (2012). What makes an organization health literate? *Journal of Health Communication: International Perspectives*, 17(5), 624–627.
- Parker, R., Baker, D., Williams, M., & Nurss, J. (1995). The test of functional health literacy in adults: A new instrument for measuring patients' literacy. *Journal of General Internal Medicine*, 10(10), 537–541.
- Pawlikowska, T., Zhang, W., Griffiths, F., van Dalen, J., & van der Vleuten, C. (2012). Verbal and non-verbal behavior of doctors and patients in primary care consultations – How this relates to patient enablement. *Patient Education and Counseling*, 86(1), 70–76.
- Percy, S. L. (1978). Conceptualizing and measuring citizen co-production of community safety. *Policy Studies Journal*, 7(s1), 486–493.
- Pestoff, V. (2012). Co-production and third sector social services in Europe: Some concepts and evidence. *Voluntas*, 23(4), 1102–1118.
- Plé, L., & Cáceres, R. C. (2010). Not always co-creation: Introducing interactional co-destruction of value in service-dominant logic. *Journal of Services Marketing*, 24(6), 430–437.
- Porr, C., Drummond, J., & Richter, S. (2006). Health literacy as an empowerment tool for low income mothers. *Family & Community Health*, 29(4), 328–335.
- Realpe, A., & Wallace, L. M. (2010). *What is co-production?*. London: Health Foundation.
- Rich, R. C. (1978). Voluntary action and public services: An introduction to the special issue. *Nonprofit and Voluntary Sector Quarterly*, 7(1–2), 4–14.
- Rikard, R. V., & McKinney, J. (2017). Where do we go from here with health literacy? In K. Kopera-Frye (Ed.), *Health literacy among older adults* (pp. 249–264). New York, NY: Springer.
- Robertson, N., Polonsky, M., & McQuilken, L. (2014). Are my symptoms serious Dr Google? A resource-based typology of value co-destruction in online self-diagnosis. *Australasian Marketing Journal*, 22(3), 246–256.
- Roseman, D., Osborne-Stafsnes, J., Amy, C. H., Boslaugh, S., & Slate-Miller, K. (2013). Early lessons from four 'Aligning Forces For Quality' communities bolster the case for patient-centered care. *Health Affairs*, 32(2), 232–241.
- Rubin, D. L., Parmer, J., Freimuth, V., Kaley, T., & Okundaye, M. (2011). Associations between older adults' spoken interactive health literacy and selected health care and health communication outcomes. *Journal of Health Communication*, 16(3), 191–204.
- Sabadosa, K. A., & Batalden, P. B. (2013). The interdependent roles of patients, families and professionals in cystic fibrosis: A system for the coproduction of healthcare and its improvement. *BMJ Quality & Safety*, 23(1s), 90–94.

- Salmon, P., & Hall, G. M. (2004). Patient empowerment or the emperor's new clothes. *Journal of the Royal Society of Medicine*, 97(2), 53–56.
- Schulz, P. J., & Nakamoto, K. (2013). Health literacy and patient empowerment in health communication: The importance of separating conjoined twins. *Patient Education and Counseling*, 90(1), 4–11.
- Schumacher, J. R., Hall, A. G., Davis, T. C., Arnold, C. L., Bennett, R. D., Wolf, M. S., & Carden, D. L. (2013). Potentially preventable use of emergency services: The role of low health literacy. *Medical Care*, 51(8), 654–658.
- Scott, T. L., Gazmararian, J. A., Williams, M. V., & Baker, D. W. (2002). Health literacy and preventive health care use among medicare enrollees in a managed care organization. *Medical Care*, 40(5), 395–404.
- Sharp, D., Palmore, T., & Grady, C. (2014). The ethics of empowering patients as partners in healthcare-associated infection prevention. *Infection Control and Hospital Epidemiology*, 35(3), 307–309.
- Shippee, N. D., Allen, S. V., Leppin, A. L., May, C. R., & Montori, V. M. (2015). Attaining minimally disruptive medicine: Context, challenges and a roadmap for implementation. *The Journal of the Royal College of Physicians of Edinburgh*, 45(2), 118–122.
- Simmons, L. A., Wolever, R. Q., Bechard, E. M., & Snyderman, R. (2014). Patient engagement as a risk factor in personalized health care: A systematic review of the literature on chronic disease. *Genome Medicine*, 6(2), 16.
- Smith, A. M. (2013). The value co-destruction process: A customer resource perspective. *European Journal of Marketing*, 47(11/12), 1889–1909.
- Teunissen, G. J., Visse, M. A., & Abma, T. A. (2015). Struggling between strength and vulnerability, a patients' counter story. *Health Care Analysis*, 23(3), 288–305.
- Thompson, L., & McCabe, R. (2012). The effect of clinician-patient alliance and communication on treatment adherence in mental health care: A systematic review. *BMC Psychiatry*, 12(87). doi: [10.1186/1471-244X-12-87](https://doi.org/10.1186/1471-244X-12-87)
- Tomes, N. (2007). Patient empowerment and the dilemmas of late-modern medicalisation. *Health Affairs*, 369(9562), 698–700.
- Upshur, C. C., Bacigalupe, G., & Luckmann, R. (2010). “They Don't Want Anything to Do with You”: Patient views of primary care management of chronic pain. *Pain Medicine*, 11(12), 1791–1798.
- Voorberg, W. H., Bekkers, V. J. J. M., & Tummers, L. G. (2015). A systematic review of co-creation and co-production: Embarking on the social innovation journey. *Public Management Review*, 17(9), 1333–1357.
- Voorberg, W. H., Bekkers, V., Timeus, K., Tonurist, P., & Tummers, L. (2017). Changing public service delivery: Learning in co-creation. *Policy & Society*, 36(2), 178–194.
- von Wagner, C., Steptoe, A., Wolf, M. S., & Wardle, J. (2009). Health literacy and health actions: A review and a framework from health psychology. *Health Education & Behavior*, 36(5), 860–877.
- Wang, R. H., Hsu, H. C., Lee, Y. J., Shin, S. J., Lind, K. D., & An, L. W. (2016). Patient empowerment interacts with health literacy to associate with subsequent self-management behaviors in patients with type 2 diabetes: A prospective study in Taiwan. *Patient Education and Counseling*, 99(10), 1626–1631.
- Weaver, N. L., Wray, R. J., Zellin, S., Gautam, K., & Jupka, K. (2012). Advancing organizational health literacy in health care organizations serving high-needs populations: A case study. *Journal of Health Communication*, 17(3), 55–66.
- Willis, C., Saul, J. E., Bitz, J., Pompu, K., Best, A., & Jackson, B. (2014). Improving organizational capacity to address health literacy in public health: A rapid realist review. *Public Health*, 128(6), 515–524.
- Wilson, P. M., Kendall, S., & Brooks, F. (2007). The expert patients programme: A paradox of patient empowerment and medical dominance. *Health and Social Care in the Community*, 15(5), 426–438.
- Wood, B. L. (2012). Biopsychosocial. In L. L'Abate (Ed.), *Paradigms in theory construction* (pp. 169–186). New York, NY: Springer.