Realizing excellence in health care: The relationship between health literacy, self-efficacy, awareness and health services' use

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Abstract

Purpose. Health services' quality strongly relies on the patients' ability to participate in the provision of care and to perform as value co-creators. Among others, individual health literacy – that is to say the ability to access, understand, process and use health-related information for the purposes of health protection and promotion – is crucial to realize the full potential of patient involvement. This paper aims at investigating the consequences on problematic health literacy on both self-efficacy perception and awareness of health-related issues, which deeply affect the process of patient empowerment.

Methodology. A sample of 438 Italian patients was built. The Newest Vital Sign (NVS) tool was used to assess health literacy skills. In addition, a self-reporting survey was administered to assess the patients' self-efficacy, awareness of health-related issues and health services' use. Also, socio-demographic variables were collected to investigate the main correlates of limited health literacy.

Findings. Problematic health literacy was prevailing among the respondents. The lower the health literacy skills, the poorer the individual self-efficacy and the smaller the awareness of health-related issues. Also, inadequate health literacy was associated with increased access to emergency care and hospital services.

Practical implications. Inadequate health literacy is able to prevent patient empowerment. Indeed, it performs as a barrier to their involvement in the provision of care. Policy makers should attach a specific health literacy concern to health policies intended to promote patient empowerment. Besides, health care providers should arrange and implement tailored health literacy promotion initiatives, in an attempt to realize the full potential of patient empowerment and improve the quality of care.

Originality/value. Even though health literacy is a well-established topic, evidence on the consequences of limited health literacy on health behaviors is still inconsistent. This paper contributes in advancing the scientific knowledge, delving into the effects of limited health literacy on self-efficacy, awareness of health-related issues and health services' use.

Keywords
Health literacy; Quality; Self-efficacy; Awareness; Patient empowerment

1. Introduction and research purposes

Quality improvement has been generally emphasized as a critical strategy to enhance the functioning of the health care service system (Berwick, Godfrey, & Roessner, 1991). In the last few years, scholars have paid a growing attention to the relationship which links quality improvement and patient empowerment in the health care arena (Groene, et al., 2010). In fact, the establishment of co-creating partnership between the patients and the providers of care could strongly contribute in the enhancement of health care quality (Renedo, et al., 2015). Although the scientific literature pointed out the need to increase patient empowerment and involvement in an attempt to enhance health services' quality (Armstrong, et al., 2013), it is still unclear whether patient engagement is a reality or a rhetoric (Wiig, et al., 2013).

In spite of these considerations, patient enablement – that is to say the activation of the patients' sleeping resources for the purposes of health protection and promotion (Palumbo, 2017) – has been variously associated with increased quality of health services (Howie, et al., 1999), greater patient satisfaction (Howie, et al., 1998), and better health outcomes (Price, Mercer, & MacPherson, 2006). From this point of view, the process of patient empowerment may be argued to be essential to achieve excellence in the provision of health services. However, it is worth noting that scholars are still quarrelling about the ultimate meaning of patient empowerment and involvement in the design and delivery of care (Funnell, 2016; Kreindler & Struthers, 2016).

Health Literacy is rapidly emerging as a requisite to the implementation of patient empowerment initiatives and to realize excellence in health services (Wang, et al., 2016). In particular, health literacy could be understood as the individual ability to handle health-related information and to navigate the health care service system properly (Batterham, et al., 2016). Although scholars are not consistent in figuring out the relationship between health literacy and patient empowerment (Schulz & Nakamoto, 2013; Palumbo, et al., 2016), it has been stressed that the better the individual health literacy skills, the greater the willingness to be involved in the provision of care (Naik, et al., 2011) and to contribute in the enhancement of health services' quality (Ishikawa & Yano, 2008).

Drawing on these arguments, this paper investigates the role of health literacy in realizing the full potential of patient empowerment. Going more into details, the consequences of health literacy skills on self-efficacy, awareness of health-related issues and health services' use is examined. It is supposed that the lower the individual health literacy skills, the lower the willingness to participate in the provision of care and the poorer the self-efficacy perception in performing health-related tasks. In addition, problematic health literacy is assumed to produce inadequate awareness of health protection and health promotion initiatives. Lastly, poor health literacy is likely to entail inappropriate access to care.

The remainder of this paper is organized as follows. The second section depicts the conceptual framework on which this research is established. Firstly, a rapid overview of the health literacy concept is presented; then, the main consequences attached by the scientific literature to problematic health literacy are reported; lastly, the research questions inspiring this manuscript are described. The third section provides few notes about the research design and strategy: the measures to assess individual health literacy, self-efficacy perception, awareness of health-related issues and health services' use are presented; moreover, the characteristics of the sample included in this research are illustrated. The forth section portraits the research findings, which are organized in line with the main purposes of this study. The fifth section includes a critical discussion of the findings, which are read in light of the limitations which affected this study. Conclusions summarize the practical and empirical implications of this paper, paving the way for an agenda for further research.

2. Conceptual framework and research questions

The debate on the definition of health literacy is still open (Pleasant, et al., 2016). Indeed, health literacy is a complex and multifaceted construct, which is concomitantly composed of different shades (Nielsen-Bohlman, et al., 2004). A functional slant characterized the former conceptualization of health literacy (Simonds, 1974). In fact, it was understood as the individual ability to: 1) understand oral and written health-related information; 2) stick to written and numerical directions about health protection and health promotion initiatives; 3) properly report prior conditions and treatment; 4) ask pertinent and timely questions about health conditions; and 5) solve everyday issues that affect the treatment of the disease (Parker, et al., 1995). From this point of view, functional health literacy is based on two basic and complementary competencies: 1) literacy, that is to say the ability to read and handle written information concerning health-related topics (Baker, et al., 2000); and 2) numeracy, that is to say the ability to access, process and act on numerical health information, in order to make appropriate health decisions (Golbeck, et al., 2005).

However, the traditional functional interpretation is unable to catch the complexity of the health literacy construct (Berkman, Davis, & McCormack, 2010). Emphasizing the evolutionary nature of health literacy, Nutbeam (2008) argued that interactive and critical competencies – beyond functional ones – foster the individual ability to navigate the health care service system. On the one hand, interactive health literacy consists of the ability to establish a clear and comfortable relationship with the providers of care (Rubin, et al., 2011), thus allowing to fill the gap between the health care professionals and the patients (Safeer & Keenan, 2005). On the other hand, critical health literacy involves the ability to critically handle health-related information available and to discriminate between alternative health protection and/or promotion initiatives, in order to enhance the appropriateness in the access to care (Chinn, 2011; Sykes, et al., 2013).

Obviously, health literacy is not exercised in the void. Rather, it should be contextualized to the institutional and structural attributes of the health care service system (Levin-Zamir & Peterburg, 2001). In line with these consideration, scholars have proposed the organizational health literacy construct (Brach, et al., 2012; Annarumma & Palumbo, 2016), which concerns the ability of health care organizations to enable the patients and to engage them in a co-creating relationship with the providers of care (Palumbo, 2016). The lower the organizational health literacy, the greater the patients' difficulty to navigate the health care service system and to actively participate in the design and delivery of care (Weaver, et al., 2012). However, organizational health literacy falls outside the scopes of this article, which solely focuses on individual health literacy skills.

The consequences of problematic health literacy have been widely examined in both the scientific and professional literatures (Davey, et al., 2015; Sørensen, et al., 2015), even though there is still little agreement on this topic (Berkman, et al., 2011). *Inter alia*, inadequate health literacy has been claimed to anticipate increased risks of inappropriate access to health services (Palumbo, et al., 2016). In fact, problematic health literacy has been associated with increased risks of hospitalization (Baker, et al., 1998); besides, people living with limited health literacy skills have been found to be more likely to access emergency care (Baker, et al., 2004; Cho, et al., 2008), to which greater health-related costs are attached (Schumacher, et al., 2013). Also, it is worth noting that people showing inadequate health literacy are more likely to self-report a poor health status and to disclose greater limitations in daily life activities as compared with their health literate counterparts (Wolf, et al., 2005). What is even more interesting is that individual health literacy skills have been claimed to deeply influence the use of both health promotion and preventive services (Scott, et al., 2002; Heinrich, 2012).

Different attempts to figure out the casual link between health literacy, health services' use and health outcomes could be retrieved in the literature (Paasche-Orlow & Wolf, 2007). However, the distinguishing attributes of this relationship are unclear. Among others, individual health behaviours are influenced by perceived self-efficacy, which refers to the individual confidence in managing a given health situation (Bandura, 1977). Scholars have recognized self-efficacy as a generalized trait, which reflects coping skills to solve health issues and obtain desired outcomes (Schwarzer & Fuchs, 1995, Sarkar, et al., 2006). Furthermore, inadequate health literacy has been claimed to pave the way for low self-efficacy perception and – consequently – poor medication adherence (Osborn, et al., 2010; Bohanny, et al., 2013). Also, problematic health literacy has been associated with impaired disease-related knowledge (Gazmararian, et al., 2003; Dennison, et al., 2011), inadequate awareness of health-related issues, and unwillingness to participate in health decision making (Goggins, et al., 2014). Nonetheless, the evidence on the consequences of health literacy is scattered, showing significant disagreements among scholars (Malloy-Weir, et al., 2015). This is especially true in Italy, where health literacy has been a neglected topic for a long time (Palumbo, 2012).

Sticking to these arguments, this research strives for shedding light on the relationship linking health literacy, self-efficacy perception, and awareness of health-related issues. In particular, the following research questions inspired this manuscript:

R.Q. 1: Does inadequate health literacy show a significant relationship with self-efficacy perception and awareness of health-related issues?

R.Q. 2: Is there a relationship between self-efficacy, awareness and health services' use?

R.Q. 3: What are the categories of patients at greater risks of limited health literacy and of low self-efficacy and awareness of health-related issues?

To provide a tentative answer to these research questions, a convenient sample of 438 Italian citizens was built. The next section describes the materials and methods which were used for the purpose of this research, specifying the measures used to assess individual health literacy skills, self-efficacy perception and awareness of health-related issues.

3. Materials and methods

3.1 Research design

The members of the sample were randomly chosen from the population served by three large public health care organizations operating in different geographical areas of Italy. In particular, the units of analysis consisted of a General Hospital of National Relevance established in Southern Italy, a multispecialty hospital situated in Northern Italy and a University Teaching Hospital located in Central Italy. The decision to focus the attention on the population served by the Italian National Health Service (INHS) was motivated by the purpose of involving in the research only people who had established at least a relationship with the INHS. Both patients, patients' relatives, and informal caregivers were approached for participation in this study. Overall, 1000 individuals were requested to fill a survey, which was intended to assess their health literacy skills, their self-efficacy perception, their awareness of health-related issues and their habits in accessing health services.

A Pen And Paper Interview (PAPI) approach was used to collect data. An interviewer personally administrated the survey to the respondents, in an attempt to reduce the risks of missing data and to provide the respondents with adequate support to fill the survey. On the whole, the survey consisted of 30 items. To minimize the occurrence of response set, several items of the survey were reversed, thus allowing the interviewer to easily identify the

respondents who followed a preconceived schema in completing the questionnaire. Response rate was about 44%, with 438 filled surveys available for the purpose of the research. Neither missing data nor response set affected the collected survey. Data were processed through IBM Statistical Package for Social Science (SPSS) Statistics – Version 20. To investigate the relationship between health literacy, self-efficacy perception, awareness and health services' use, Pearson Product-Moment Correlations were used. Alternatively, Spearman's rank correlation coefficients allowed to delve into the relationship between self-efficacy, awareness and health services' use.

3.2 Measures

Scholars have suggested different tools to assess individual health literacy (Baker, 2006). *Inter alia*, the ToFHLA – Test of Functional Health Literacy in Adults (Parker, et al., 1995) – and the REALM – Rapid Estimate of Adult Literacy in Medicine (Davis, et al., 1993) – are the most used tools to measure health literacy skills. However, these tools show several limitations, including long time for completion and a focus on reading abilities, which does not allow a comprehensive assessment of health literacy (McCormack, 2009; Nutbeam, 2009). The NVS – Newest Vital Sign (Weiss, et al., 2005) – represents an alternative to both the ToFHLA and the REALM. In fact, the NVS has been argued to be a friendly measurement tool, which does not elicit feeling of shame by the side of low health literate people (VanGeest, et al., 2010); moreover, it allows a rapid assessment of health literacy skills, which is consistent with the results of more extensive literacy tests (Shah, et al., 2010). Last but not least, it is easy to use and allows to adequately detect limited health literacy cases (Osborn, et al., 2007; Rowlands, et al., 2010). In light of these considerations, the NVS was used to assess health literacy skills for the purpose of this study.

The NVS consists of a standardized nutrition facts label, to which six questions aimed at assessing the respondents' reading and numeracy health-related skills are attached. One point is assigned for each correct answer; therefore, the NVS score ranges between 0 and 6, where 0 indicates high risks of problematic health literacy and 6 indicates adequate health literacy. Even though the NVS is affected by a natural focus on functional health literacy competencies, it also involves a concern for critical health literacy, since it includes questions aimed at evaluating the individual ability to discriminate within health information available and to make appropriate health decisions. Alternatively, interactive health literacy is not contemplated by the NVS screening tool.

An *ad-hoc* approach was used to assess both self-efficacy and awareness of health-related issues. Embracing a formative model (Coltman, et al., 2008), 10 direct statements were arranged and attached to self-efficacy and awareness of health-related issues. A four-point scale was linked to each item, where 1 indicated strong disagreement with the related statement, 2 slight disagreement, 3 slight agreement, and 4 strong agreement. In particular, for each self-efficacy item, the respondent rated his/her confidence in his/her own capability to perform the recommended health behaviour described the item statement; alternatively, for each awareness item, the respondent rated his/her consciousness of health-related issues included in the item statement. Table 1 synthesizes the structure of the survey and includes an illustrative item for each section of the survey. An index ranging from 0 to 50 was constructed for both self-efficacy and awareness of health-related issues, with 0 indicating either low self-efficacy or poor awareness and 50 indicating either high self-efficacy or strong awareness. The index was calculated only for those who answered at least to six out of ten items for both self-efficacy and awareness.

Table 1. The constructs used to assess health literacy, self-efficacy, and awareness

Construct	Brief description	No. of item	Illustrative Item	Assessment approach
Newest Vital Sign (NVS)	Six questions attached to a standardized nutrition facts to assess literacy and numeracy skills of respondents	7	If you usually eat 2,500 calories in a day, what percentage of your daily value of calories will you be eating if you eat one serving?	Open answer. 1 point for each correct answer
Self-efficacy perception (SE-Index)	Respondents' self-rated capability to perform recommended health behaviours	10	On a scale from very difficult to very easy (where 1 = very difficult; 4 = very easy) how easy would you say it is to use the health information available to you to make decisions about your illness?	4 points Likert Scale (5 = do not know/do not answer)
Awareness of health-related issues (AW-Index)	Respondents' self-reported consciousness of health-related issues	10	On a scale from very difficult to very easy (where 1 = very difficult; 4 = very easy) how easy would you say it is to detect health warnings about dangerous behaviour (e.g. smoking)?	4 points Likert Scale (5 = do not know/do not answer)

Source: Authors' elaboration

Last but not least, 4 items concerned the respondents' self-reported use of health services. In particular, the respondents' were asked to disclose the recurrence of their access to emergency care, hospital services, primary care, and secondary care in the 12 months preceding the interview. Besides, the survey included several additional items, which were intended to provide a brief socio-demographic profile of respondents. The participants' anonymity was granted and ethical issues were handled by explaining in advance to the respondents the aims and the scopes of the survey (Barnes, 1977).

On the whole, as reported in Table 2, the survey consisted of 38 items, including:

- 6 questions attached to the NVS screening tool;
- 10 items concerning self-efficacy;
- 10 items concerning awareness of health-related issues;
- 4 items related to the self-reported use of health services;
- and 8 items to figure out a socio-demographic profile of respondents.

Table 2. An overview of the survey

Construct	Description	Index	No. of items	Reliability
Health literacy	Ability to access, understand and act on health information and to navigate the health care service system	NVS screening tool	6	$\alpha = 0.86$
Self-Efficacy	Confidence in performing basic tasks within the health care environment	SE Index	10	$\alpha = 0.787$
Awareness	Consciousness of health-related issues and of resources available to protect and promote his own/individual health status	AW Index	10	$\alpha = 0.745$
Health services' use	Self-reported use of emergency services, hospital care, primary care and secondary care	N/A	4	N/A
Socio-demographic variables	Gender, age, education, social status, living conditions, civil status, status of employment, and financial deprivation of respondents	N/A	8	N/A

Source: Authors' elaboration

All the measures used for the purpose of this research showed an acceptable reliability, as assessed by the Cronbach's Alpha. In particular, the NVS score revealed a good internal consistency ($\alpha = 0.86$); both the indices assessing self-efficacy and awareness of health related issues exceeded the 0.70 threshold for reliability.

3.3 The Sample Characteristics

Table 3 provides a snapshot of the sample characteristics.

Table 3. The Sample Characteristics

Variable	Total	
	No.	**%**
Gender		
Male	207	47.3
Female	231	52.7
Age Groups		
18-25	36	8.2
26-39	139	31.7
40-54	115	26.3
55-64	60	13.7
65-74	62	14.2
75+	26	5.9
Education		
Pre-primary	2	0.5
Primary	64	14.6
Lower secondary	94	21.5
Upper secondary	108	24.7
Post-secondary	70	16
First stage of tertiary	44	10
Second stage of tertiary	54	12.3
Do not know	2	0.5
Employment		
Unpaid work, traineeship and/or apprenticeship	40	9.1
Full time	109	24.9
Part time	56	12.8
Unemployed	46	10.5
Student	24	5.5
Retired	76	17.4
Permanently disabled	12	2.7
Military/Community service	5	1.1
Full time homemaker	45	10.3
Inactive	7	1.6
Other	18	4.1
Civil status		
Unmarried	142	32.4
Married	198	45.2
Divorced	46	10.5
Widow	43	9.8
Do not know	9	2.1
Living conditions		
Living alone	99	22.6
Shared household	310	70.8
In a relationship, but living alone	19	4.3
Do not know	10	2.2

Source: Authors' elaboration

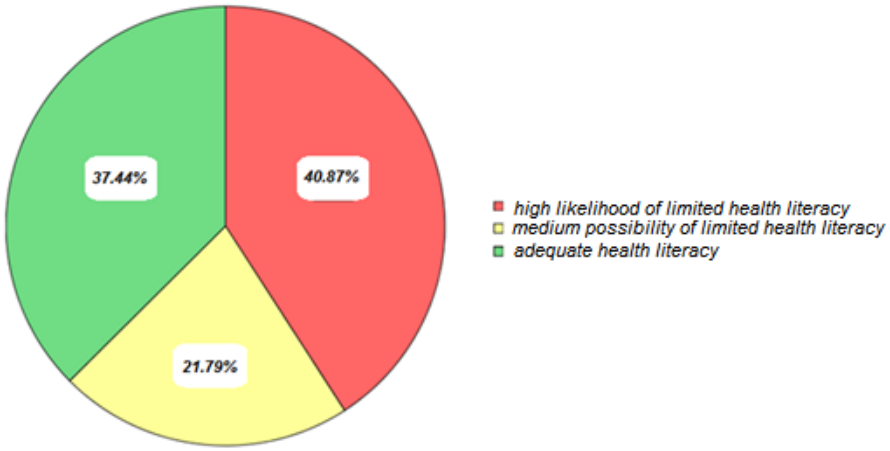
The sample was balanced in terms of gender: in fact, women (52.7%) slightly prevailed on men (47.3%). The different age groups were included in the sample. Mean age was 47 years

(σ = 16.8; ranging from 19 to 90 years). Respondents showed various education levels. Most of them reported either lower (21.5%) or upper secondary education (24.7%); about 15% of the sample showed primary or pre-primary education. One out of four respondents stated first stage or second stage tertiary education. The sample was found to be heterogeneous in regard to employment status. More than one out of three respondents claimed to have a full time (24.9%) or a part time work (12.8%). About 9% of the sample reported to be involved in an apprenticeship or to perform unpaid work. One out of ten respondents was unemployed (10.5%). More than a quarter of the sample consisted of either retired (17.4%) or full-time homemaker (10.3%). The remaining part of the sample included students (5.5%), permanently disabled (2.7%) inactive (1.6%), and people involved in military or community service (1.1%). About half of the sample (45.2%) reported to be married; 142 respondents were unmarried, while about 20% were either divorced or widow. Lastly, most of the respondents lived in a shared household (70.8%); about one out of four respondents (26.9%) lived alone.

4. Findings

The sample was fairly distributed in terms of health literacy skills, as measured by the NVS screening tool. As depicted in Figure 1 and Table 4, more than a third of the sample (about 41%) showed high likelihood of problematic health literacy, scoring between 0 and 1 in the NVS test; on the other hand, 164 respondents (37.4%) showed adequate health literacy, reporting a score which ranged between 4 and 6 in the NVS. About one out of five people (21.7%) revealed medium likelihood of marginal health literacy, with a score ranging between 2 and 3 in the NVS.

Figure 1. NVS score (n = 438)



Source: Authors' elaboration

About one out of six respondents (16.4%) reported inadequate self-efficacy (SE index ≤ 25), pointing out to be unable to perform basic tasks within the health care service system. Besides, 24.3% of the sample revealed problematic self-efficacy (25.01 ≤ SE index ≤ 33), stating to meet significant barriers in dealing with health-related issues. Alternatively, about half of the respondents (47.5%) declared sufficient self-efficacy (33.01 ≤ SE index ≤ 42) and about one out of ten people (11.8%) disclosed excellent self-efficacy (SE index ≥ 42.01).

Performances in terms of health-related awareness were quite different. Actually, about a third of the respondents (36.8%) self-reported inadequate awareness of health issues (AW

index ≤ 25), while about 30% of the sample showed problematic awareness (25.01 ≤ AW index ≤ 33) of health promotion and protection initiatives. Therefore, more than half of the sample (66.8%) was found to be unaware of timely health issues. On the other hand, only a quarter of the sample (27.2%) reported sufficient health-related awareness (33.01 ≤ AW index ≤ 42), while 6% of respondents disclosed excellent awareness (SE index ≥ 42.01). Table 5 synthesizes the self-efficacy and health awareness scores of the sample, providing an overview of the respondents' performances.

Table 4. NVS scores (n = 438)

NVS Score	Frequency	%	Valid %	Cumulative %
High likelihood of Limited Health Literacy	179	40,9	40,9	40,9
Possibility of Limited Health Literacy	95	21,7	21,7	62,6
Adequate Health Literacy	164	37,4	37,4	100,0
Total	438	100,0	100,0	

Source: Authors' elaboration

Table 5. SE index (n = 432) and AW index (n = 397) scores

SE index	Frequency	Percent	Valid Percent	Cumulative Percent
Inadequate SE	71	16.2	16.4	16.4
Problematic SE	105	24	24.3	40.7
Sufficient SE	205	46.8	47.5	88.2
Excellent SE	51	11.6	11.8	100,0
Missing	6	1.4		
Total	438	100,0	100,0	

AW index	Frequency	Percent	Valid Percent	Cumulative Percent
Inadequate AW	146	33.3	36.8	36.8
Problematic AW	119	27.3	30	66.8
Sufficient AW	108	24.7	27.2	94
Excellent AW	24	5.5	6	100
Missing	41	9.4		
Total	438	100,0	100,0	

Source: Authors' elaboration

As anticipated in the previous section, Pearson Product-Moment Correlations were used in order to delve into the relationships between the NVS score, the SE index, and the AW index. Table 6 provides a snapshot of the correlations between these variables, suggesting a tentative answer to the first and second research questions which inspired this study. The NVS score was found to be positively and significantly (0.01 level, 2 tailed) related to the SE index ($r = 0.361$). In fact, people reporting inadequate health literacy (NVS score ranging between 0 and 1) were likely to show problematic self-efficacy in performing everyday tasks within the health care service system, with an average SE index = 29.48 ($\sigma = 7.76$). Quite the opposite, people who disclosed adequate health literacy (NVS score ranging between 4 and 6) had higher self-efficacy perception, with the average SE index at sufficient level ($\mu = 38.88$; $\sigma = 7.54$).

Similar findings were retrieved dealing with the relationship between health literacy and awareness of health-related issues, which turned out to be positively and significantly (0.01 level, 2 tailed) related (r = 0.279). On the one hand, the respondents who revealed inadequate health literacy (NVS score ranging between 0 and 1) had an average AW index = 25.88 (σ = 8.89), which suggested a poor awareness of timely issues related to health protection and promotion; on the other hand, those living with adequate health literacy (NVS score ranging between 4 and 6) reported higher awareness of health related issues (μ = 32.18; σ = 9.11) as compared with their low health literate counterparts. Interestingly, Table 6 figures out a positive and significant (0.01 level, 2-tailed) correlation between self-efficacy perception and awareness (r = 0.670), indicating that the higher the self-assessed ability to navigate the health care service system, the stronger the consciousness of health-related issues and vice versa.

Table 6. Pearson Product-Moment Correlations between NVS score, SE index and AW index

	NVS score	SE index	AW index
NVS score	1		
SE index	.361*	1	
AW index	.279*	.670*	1

** Correlation is significant at the 0.01 level (2-tailed).*

Source: Authors' elaboration

Spearman's rank correlations allowed to obtain intriguing insights on the relationship between respondents' self-efficacy perception, awareness of health-related issues, self-assessed health status and health services' use. Table 7 outlines the correlations between these variables. First of all, both self-efficacy (ρ = 0.198) and awareness of health-related issues (ρ = 0.254) were found to be positively and significantly (0.01 level, 2-tailed) associated with self-assessed health status. In fact, those who disclosed greater self-efficacy in navigating the health care service system were more likely to report better health conditions as compared with their counterparts; the same was true for those who revealed stronger awareness of current health topics. Moreover, self-efficacy (ρ = -0.167) and awareness (ρ = -0.212) showed a weak, but significant (0.01 level, 2-tailed) negative correlation with the presence of chronic conditions. In other words, people who revealed greater proficiency in dealing with health affairs were less likely to show chronic conditions. Finally, yet importantly, significant (0.01 level, 2-tailed) negative correlations were found between limitations in daily life and both SE index (ρ = -0.288) and AW index (ρ = -0.274).

Table 7. Spearman's Rank Correlations between SE index, AW index, health status and health services' use

	Self-assessed health status	Long-term conditions	Limitations in daily life	Access to emergency care	Use of primary care	Access to hospital care	Use of specialist services
SE Index	.198**	-.167**	-.288**	-.309**	-.060	-.241**	.032
AW Index	.254**	-.212**	-.274**	-.309**	-.096	-.248**	-.117*

***Correlation is significant at the 0.01 level (2-tailed)*
** Correlation is significant at the 0.05 level (2-tailed)*

Source: Authors' elaboration

What is even more interesting is that self-efficacy (ρ = -0.309) and awareness (ρ = -0.309) showed significant (0.01 level, 2-tailed) and negative correlations with the access to emergency care. In fact, the respondents who revealed better self-efficacy perceptions and greater consciousness of health protection and health promotion initiatives reported lower access to emergency care. The same was true for the access to hospital services, which was negatively and significantly (0.01 level, 2-tailed) related with both SE index (ρ = -0.241) and AW index (ρ = -0.248). Alternatively, self-efficacy was not found to be associated with access to primary care and with use of specialist services. Also, awareness of health-related issues did not show relationships with use of primary care, while it was weakly, but significantly (0.05 level, 2-tailed) related with use of specialist services (ρ = -0.117), with those disclosing greater awareness reporting less access to specialist care.

Lastly, Table 8 illustrates the Spearman's Rank correlations between health literacy skills, self-efficacy perception, health-related awareness, and socio-demographic variables. Gender was not found to be associated with self-efficacy perception. However, it showed a weak significant (0.01 level, 2-tailed) and positive relationship with awareness of current health topics (ρ = 0.148), suggesting that women, on the average, disclosed a greater consciousness of health protection and health promotion initiatives. Gender was positively and significantly (0.05 level, 2-tailed) related with the NVS score (ρ = 0.103), pointing out that – on the average – women performed better in terms of health literacy skills.

Interestingly, age did not reveal associations with self-efficacy and awareness. Nonetheless, a weak, but significant (0.01 level, 2-tailed) relationship between age and NVS score was found. Actually, elderly were more likely to show inadequate health literacy (NVS score ranging between 0 and 1) as compared with their younger counterparts. These considerations could be replicated for civil status, which showed a significant (0.01 level, 2-tailed) relationship with the NVS score (ρ = -0.192), even though it was not associated with SE index and AW index. In particular, unmarried respondents reported better health literacy skills as compared with married ones. Living conditions were unrelated with both health literacy skills, self-efficacy perception, and awareness of health issues.

Table 6. Spearman's Rank Correlations between NVS score, SE index, AW index, and socio-demographic variables

	Gender	Age	Education	Social Status	Civil Status	Living Conditions	Status of Employment	Financial Deprivation
NVS score	.103*	-.186**	.450**	.245**	-.192**	.007	-.340**	-.475**
SE Index	.094	-.086	.261**	.235**	-.045	-.024	-.112*	-.375**
AW Index	.148**	-.042	.198**	.142**	-.020	-.081	-.088	-.399**

***Correlation is significant at the 0.01 level (2-tailed)*

** Correlation is significant at the 0.05 level (2-tailed)*

Source: Authors' elaboration

The respondents' status of employment was not found to be related with awareness of health issues, but it disclosed a significant (0.05 level, 2-tailed) and negative relationship with self-efficacy perception (ρ = -0.112). Going more into details, either full-time or part-time workers were likely to report greater self-efficacy as compared with people who were either unemployed or did not participate in the workforce. As well, the status of employment was significantly (0.01 level, 2-tailed) and negatively associated with the NVS score (ρ = -0.340),

pointing out that employed respondents performed better in terms of functional health literacy skills as compared with unemployed ones.

It is interesting to note that education, social status and financial deprivation were the most important correlates of both health literacy skills, self-efficacy and awareness of health promotion and health protection topics. Indeed, education showed a significant (0.01 level, 2-tailed) and relatively strong correlation with the NVS score ($\rho = 0.450$), pointing out that those who reported higher education achievements were more likely to obtain better performances in terms of health literacy skills. In addition, education was significantly (0.01 level, 2-tailed) and positively related with both SE index ($\rho = 0.261$) and AW index ($\rho = 0.198$). Also, social status revealed significant (0.01 level, 2-tailed) and positive relationships with the health literacy skills of respondents ($\rho = 0.245$), their self-efficacy perception ($\rho = 0.235$), and their awareness of health issues ($\rho = 0.142$), suggesting that the higher the respondents' self-assessed social, the better their ability to navigate the health care service system and to handle health information. Among others, financial deprivation showed the strongest correlations with the indices arranged for the purpose of this study. In fact, it was negatively and significantly related with the NVS score ($\rho = - 0.475$), with people suffering from financial deprivation being more likely to report limited health literacy (NVS score ranging between 0 and 1). In addition, those who reported greater problems of financial deprivation disclosed lower self-efficacy in dealing with the health care service system and poorer awareness of timely health topics. Actually, both SE index ($\rho = 0.375$) and WE index ($\rho = - 0.399$) showed negative and significant (0.01 level, 2-tailed) correlations with financial deprivation.

5. Discussion

The limitations of this research should be taken into account to contextualize the findings depicted above. Since a convenience approach was taken, the sample was not representative of the population of Italian patients. Therefore, the results of this study could not be generalized. Besides, the correlation analysis did not allow to obtain in-depth evidence about the relationship between health literacy skills, self-efficacy perception, and awareness of health issues. Lastly, it was not possible to claim a causal relationship between health literacy skills, self-efficacy, awareness, and socio-demographic variables.

In spite of these limitations, the findings allowed to provide a tentative answer to the research questions. The correlation analysis suggested that health literacy, self-efficacy, and awareness of health-related issues were associated by a weak positive, but statistically significant relationship. This finding is consistent with the studies which claim that better health literacy skills pave the way for greater confidence in navigating the health care service system (Osborn, et al., 2010; Donovan-Kicken, et al., 2012; Bohanny, et al., 2013). However, it is worth noting that several scholars have challenged the association between health literacy and self-efficacy, pointing out that different confounding factors may influence the relationship between these variables (DeWalt, et al., 2007; Colbert, et al., 2013). Similarly, health literacy has been linked with greater awareness and patients' desire for involvement in health-related decision making (Gazmararian, et al., 2003; Seo, et al., 2016). Also in this case, scholars are not consistent in depicting the consequences of health literacy on individual awareness of health related issues, even though they emphasize that low health literate patients may be less willing to partner with the health care providers and to look for health information (Aboumatar, et al., 2013).

Therefore, it could be claimed that low health literate people are at risk of perceiving poorer self-efficacy in interacting with the health care service system. Moreover, they are

likely to show lower awareness of health promotion and health protection initiatives available in their context of life. In turn, poor self-efficacy and low awareness may produce unwillingness to be engaged in the provision of care and patient disengagement (Fuertes, et al., 2007; Palumbo, 2017). From this point of view, it could be claimed that inadequate health literacy performs as a barrier to quality improvement of health care services through patient engagement. Indeed, inadequate health literacy may engender value co-destruction in the health care environment, involving the establishment of biased relationships between the patients and the providers of care (Robertson, et al., 2014; Palumbo, 2015).

Both self-efficacy and awareness were found to be significantly related with the use of health services. Actually, those who reported lower self-efficacy perception and awareness showed greater use of hospital and emergency services. These results echoed the considerations of the scientific literature, which pointed out that the inadequate individual ability to navigate the health care service system paves the way for higher risks of hospitalization and access to emergency care (Baker, et al., 2002; Schumacher, et al., 2013; Bauer, et al., 2016; Leung, et al., 2016). Hence, it could be argued that people revealing low self-efficacy and awareness of health-related issues show a limited ability to navigate the health care service system and to properly access health services, with drawbacks on both the quality of care and the sustainability of the health care service system. It is interesting to note that self-efficacy and awareness were related with individual self-assessed health status, presence of chronic conditions and limitations in daily life. In fact, the lower the self-efficacy perception and the consciousness of health prevention and promotion initiatives, the lower the respondents' health status (Sørensen, et al., 2015). Sticking to these findings, the enhancement of individual health literacy may lead to increased self-efficacy and awareness, to more appropriate access to care and – ultimately – to better health outcomes (Batterham, et al., 2016).

Women were more likely to be aware of timely health topics as compared with men, thus supporting the findings of the scientific literature which pointed out gender differences in the approach to health services (Stewart, et al., 2004). Nevertheless, gender was not found to be related with health literacy skills and self-efficacy perception. Older patients were consistent in reporting lower health literacy as compared with their younger counterparts; however, age was not associated with self-efficacy and awareness. From this standpoint, it could be maintained that elderly people meet greater difficulties in navigating the health care service system and in participating in health services' design and delivery, mainly due to the decline in cognitive functions (Baker, et al., 2000). People who were employed and unmarried reported better health literacy skills, even though they did not usually show stronger awareness. These results are in line with the arguments of the scholars who claimed a significant relationship between employment status and health literacy (von Wagner, et al., 2009), while they challenged the studies which found greater risks of limited health literacy among unmarried people (Murray, et al., 2009).

Education levels, self-reported social status, and financial deprivation disclosed the more relevant correlations with self-efficacy and awareness of health-related issues. Going more into details, people reporting higher education achievements performed better in the NVS score and were more likely to report adequate self-efficacy and awareness (Kumar, et al., 2017). Besides, the lower the self-assessed social status of respondents, the poorer their self-efficacy in navigating the health care service system and their ability to handle health-related information (Berens, et al., 2016). Last but not least, people suffering from financial deprivation showed problematic health literacy, low self-efficacy perception and overall inadequate awareness of health-related issues (Palumbo, et al., 2016_a). From this point of view, tailored initiatives aimed at promoting health literacy skills, individual self-efficacy in navigating the health care service system and consciousness of health protection and health

promotion interventions should be targeted to the disadvantaged population (Barry, et al., 2013).

6. Conclusions

The implications of this paper are twofold. On the one hand, it emphasizes the relationship between health literacy, self-efficacy perception and awareness of health-related issues. Adequate health literacy paves the way for greater consciousness of health resources available in the community and, consequently, produces greater willingness to be engaged in the provision of care and better quality of care. Indeed, health literacy, self-efficacy and awareness seem to be related to the appropriate access to care. In particular, people reporting to be unable to deal with health-related issues show greater risks of hospitalization and are more likely to use emergency services. On the other hand, this study provides both scholars and practitioners with interesting insights about the main correlates of health literacy. Disadvantaged people are at special risk of limited health literacy; as well, those reporting lower educational attainments are consistent in showing poorer ability to navigate the health care service system. Targeted interventions to promote health literacy in these groups of the population are especially needed, in an attempt to enhance the functioning of the health care system and improve the quality of health services. This is possible by enabling the patients to perform as value co-creators and health services co-producers; if health literacy is missing, patients are likely to perceive low self-efficacy and inadequate awareness of health issues, turning out to be unwilling to be involved in the provision of care.

The limitations which affected this research shed light on the conceptual and empirical developments which are required to push forward the scientific knowledge about the consequences of limited health literacy. Self-efficacy and awareness should be dealt with as mediating variables between health literacy and health services' use. In fact, health literacy is able to deeply influence the individual ability to navigate the health care service system and to establish comfortable relationships with the providers of care. In turn, these abilities allow patients to perform as value co-creators in the health care setting, producing patient involvement and resulting in health services' quality improvement.

The role of self-efficacy and awareness in preventing inappropriate access to care deserve more attention. An in-depth analysis intended to figure out the causal relationship between self-efficacy, awareness, and health services' use would be beneficial. Finally yet importantly, greater attention should be paid to the socio-demographic determinants of inadequate health literacy, in an attempt to inspire the health policies of the future. Among others, disadvantaged people show significant risks of limited health literacy. Hence, tailored interventions should be targeted to them, in order to enhance their ability to effectively deal with health-related issues.

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