

Opinion

People's Need for Health Information and Communication: How Past Experiences Could Support Future Interventions

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Abstract: People's need for information and communication concerning health has emerged from many sources, even for important aspects related to the COVID-19 pandemic. The challenges of those who want to respond to this need are mainly related to which design characteristics could better support their aim. Thus, this article first examines a selected list of examples of different approaches of interventions targeted at citizens aimed at increasing health knowledge. Successively our recent experience regarding a new tool developed to support people's health by promoting communication about citizens' approach towards pharmaceuticals is discussed. In addition, here we propose that a similar methodological approach may be useful also to highlight people's critical issues and suggestions regarding health care system, i.e., factors that could play a pivotal role in a pandemic scenario. Our experience in the local context through an integrated strategy can be useful to address key factors concerning people's approach to medicines, and approach to health care system even during a pandemic scenario. Overall these examples of past experience show how some approaches could support the understanding of suitable future, community-level, interventions to enhance information and communication about health and care.

Keywords: information and communication; pharmaceuticals; health system; intervention approaches; citizens' approach; informatics tool



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1. Introduction

People's need for information and communication concerning health has emerged for many years. The importance of actions able to support health issues has been also highlighted [1–4].

The COVID-19 pandemic situation, with related consequences on the general population's health and the management of emergencies, has even exalted the importance of interventions directed at people's health. Some relevant aspects have to be considered in a pandemic context. Among these, the presence of an overabundance of information (including false or misleading) defined by the World Health Organization as an “infodemic” [5] and the diffusion of “miracle medicines” for the prevention of SARS-CoV-2 infection have emerged during the COVID-19 pandemic in Italy [6] and in other countries worldwide [7,8], with miracle cures transcending countries boundaries bidirectionally [9]. The implications for health communication are very current. Recent studies that analyzed this phenomenon have also highlighted aspects such as the importance of future interventions to be aware of the way misinformation affected medical staff-patients relationships [10], or the importance of evidence-based health communication [9].

Interestingly, very recently, a group of regulators predicted that the improving participation by patients and healthcare professionals (including new forms of participation) will be a key factor for transformation of the healthcare in the next ten years [11]. Participation emerges as important also in a recent European Commission initiative concerning medicines supply (see for instance the “Structured Dialogue initiative”) [12].

The study of the framework and the importance of the identification of existing methods, even in connection to the context, before developing new ones have been also

reported [13,14]. Past experiences across the proposed methods provide a useful source of possible approaches. Hence, a better understanding of suitable possible approaches concerning health and related context can support the design of future interventions to enhance information and communication as well, as it is an exchange and sharing of information.

In our opinion, citizen centrality and the collaboration among citizens, healthcare professionals, scientists, regulators, and other actors interested in, play a major role in enhancing health information and communication. Moreover, using informatics applications constitute an additional arm to achieve the desired results.

In light of these considerations, here we discuss examples of different approaches providing support for interventions aimed at increasing health knowledge. In particular actions, at the community level, targeted at citizens in different contexts concerning the approach to medicines and health systems, and our experience on the same subject, are reported. Moreover, interventions before the pandemic and in response to the COVID-19 pandemic are also argued. We begin by considering the literature and discussing some examples of recent intervention approaches on health information and communication, then we propose our experience to focus on current challenges and some solutions proposed to address them.

2. Literature Examples of Recent Intervention Approaches to Health Information/Communication

Different kinds of intervention approaches to obtain meaningful information to explore factors that influence people's behaviour concerning attitudes towards medicines and health systems have been applied.

Interventions, community level, tailored to the context, and carried out by using cross-sectional designs, show that such an intervention can be effective to explore people's approach to pharmaceuticals, and factors that influenced it, at the local level in Italy and abroad [15,16] and in a wider context [17]. These studies regard approaches applying online surveys towards vaccination among healthcare workers in hospitals and ambulatory care (Italian local context); online questionnaire among the working-age population about the prevalence of self-medication with over-the-counter medicines (metropolitan areas of Thailand); micro-data from Health Interview Survey concerning the prevalence of self-medication among older adults across Europe (European Health Interview Survey 2006–2009). Another approach, based on a multifaceted local campaign and controlled trial, shows that it may influence medicine prescribing behaviour [18]. It combines an information campaign targeted at citizens with a newsletter targeted at health professionals to impact antibiotic prescribing (Italian local context). Empirical investigations, by cross-sectional studies, have been also conducted to evaluate the impact of the COVID-19 pandemic on different aspects of people's health such as doctor-patient relationship aspects [19,20]. These studies explore the doctor-patient relationship during the pandemic through online surveys among medical professionals and the adult population (China context). A similar approach has been applied to evaluate the general population's knowledge about other current issues, such as monkeypox infection by online questionnaire and convenience sampling (among the Saudi population) [21]. Moreover, cohort and serial cross-sectional studies, and models applied to estimate the effects of COVID-19 on the excess mortality revealed also indirect impacts of the pandemic, such as those caused by modifications in people's behaviour and health system reorganization on not-SARS-CoV-2-related morbidity and mortality [22,23]. Studies based on electronic health records to analyze 1-year mortality of excess COVID-19-related deaths, and on data aggregate to monitor the indirect impact of the COVID-19 pandemic on hospital activity (UK context). Table 1 summarizes the characteristics of the approaches above reported.

Table 1. Literature examples of approaches to health information/communication.

Approach	Design Components	Advantages	Shortcomings
multicenter cross-sectional study [15] (1)	<ul style="list-style-type: none"> online questionnaire targeted at healthcare workers aimed to investigate vaccine coverage and attitudes toward vaccination Italian local context 	<ul style="list-style-type: none"> adequate number of interviewed working in different settings with different working statuses 	<ul style="list-style-type: none"> unequal distribution by role and setting self-reported data
online cross-sectional study [16] (1)	<ul style="list-style-type: none"> online questionnaire targeted at the working-age population aimed to investigate the prevalence of self-medication metropolitan areas of Thailand 	<ul style="list-style-type: none"> ad hoc created the questionnaire 	<ul style="list-style-type: none"> causality assessment for the reported adverse drug reactions not run recall bias could affect data accuracy not including household remedies
cross-sectional study [17] (1)	<ul style="list-style-type: none"> micro-data from Health Interview Survey aged 65 and over aimed to investigate the prevalence of self-medication European context 	<ul style="list-style-type: none"> large sample size standardized survey 	<ul style="list-style-type: none"> some limitations related to methodological options data collection by interviews
community-level controlled non-randomised trial [18] (1)	<ul style="list-style-type: none"> information campaign, questionnaire targeted at citizens and health professionals aimed to influence antibiotic prescribing Italian local context 	<ul style="list-style-type: none"> presence of a control group 	<ul style="list-style-type: none"> non-randomised design
online cross-sectional retrospective study [19] (2)	<ul style="list-style-type: none"> online questionnaire targeted at population, aged 18 and over aimed to better understand the doctor-patient relationship during the COVID-19 pandemic China context 	<ul style="list-style-type: none"> number of interviewed 	<ul style="list-style-type: none"> convenience sampling strategy and online survey method may lead to selection bias reporting pre-pandemic attitude may not be as accurate as real-time attitude due to memory bias not collecting further demographic information

Table 1. Cont.

Approach	Design Components	Advantages	Shortcomings
online cross-sectional retrospective study [20] (2)	<ul style="list-style-type: none"> online questionnaire targeted at medical professionals aimed to explore the doctor-patient relationship during the COVID-19 pandemic China context 	<ul style="list-style-type: none"> enough power and sample size 	<ul style="list-style-type: none"> retrospective type study could not provide reliable predictors for future situations questionnaire development need
population-based cohort study [23] (2)	<ul style="list-style-type: none"> electronic health records from different data sources aimed to estimate 1-year mortality of excess COVID-19-related deaths England context 	<ul style="list-style-type: none"> ad hoc developed model and tool 	<ul style="list-style-type: none"> models require further data for their development

(1) not in response to the COVID-19 pandemic. (2) in response to the COVID-19 pandemic.

In these studies, sampling strategies were mainly snowball sampling, convenience sampling, and online questionnaire survey. Other approaches reported are by phone for local context investigation, micro-data interviews, electronic health records, and online focus groups [24]. The importance of in-depth interviews and combining a qualitative interview with a quantitative interview has been indicated as well [19].

These studies are an important source of methods and initiatives showing strengths and limitations even discussed by those who have applied them. Often, due to the variability of the framework proposed, as for the different sampling techniques applied, the comparison of different interventions appears considerably difficult. However, despite the complexity, some aspects concerning citizens emerge across studies and initiatives. The gap in knowledge, the importance of listening to citizens to develop communication strategies, the importance of studies involving healthcare workers, the need for more information, and involvement in decision-making concerning health are the main key factors arisen. In addition, the importance of actions to identify factors that may affect health system performance also for a specific subsystem has been highlighted [25].

Significant investments in health information technology (HIT) have been made in past years, and recent studies have shown that, although the intended effects and changes have not yet been yielded [26], however a mass of efforts in the USA, Europe, and in the UK have been devoted to this objective [27]. Interestingly, some experiences have shown how the COVID-19 pandemic has been an opportunity to develop existing HIT and acknowledge barriers that restricted the use of HIT [27]. Once again, some important aspects emerge across experiences, such as the necessity of significant and sustained efforts, the importance of health data science research, and of generating real-world data. Moreover, the importance of aspects such as HIT system that needs to adapt to local contexts, and the potential benefits of an optimal balance between bottom-up and top-down implementation, emerge as well. Some solutions have proposed a citizen-centric approach and protocols giving the ability to citizens to control and share their health data utilizing their mobile devices by a mobile application [28]. They propose the advantages to provide citizens with the ability to manage their health data across different countries and health providers, and real-world scenarios next steps. A current systematic review and meta-analysis, among health professionals in Ethiopia, have reported the importance of efforts on raising awareness, motivational programs, and information communication technology encouraging knowledge sharing in health care [29].

We do not doubt the great potential of information technology (IT) in health and care. Indeed, we believe more efforts are necessary for the use of IT, in particular, to enhance a form of communication and participation better if the advantage of direct contact with those helping to manage it favours the key message transfer avoiding distortions. IT can be useful to support communication, improve the performance of the health system, and support decision-making factors that are also strongly interconnected.

3. Our Recent Experience with Health Information/Communication

Taken together, these above-reported aspects can be an inspiration for new experiences. Here we discuss our experience starting from a study recently published based on a tool ad hoc designed to evaluate people's attitudes towards the use of pharmaceuticals in a sample population [30]. In addition, here we propose a new tool applying a similar methodological approach that may be useful also to highlight people's critical issues and suggestions regarding health care system, i.e., factors that could play a pivotal role in a pandemic scenario.

Overall our strategy, aimed at stimulating information and communication about health among different actors, such as sanitary staff/health professionals, scientists, other interested actors, and citizens also encouraging their participation, could represent a novel integrated strategy useful to inspire new ones. In particular, it seems to us a suitable approach to look at citizens/territory, to reflect the peculiarity of the context, also in relation to the period and applicable over time. The step of interaction (for instance with a researcher) is important to give citizens the opportunity to think about their own behaviour and the importance of evidence-based health communication, also giving the opportunity to express suggestions and needs. A combination of strengths strategy, also reported in detail in the following aspects of our experience, naturally generates feedback useful to improve the tool itself.

This experience in the local context designed on oral interviews and dedicated informatics applications can be useful to address key factors concerning people's approach to medicines, and approach to health care system. Thus, the tool represents an integrated strategy to understand the context and enhance communication. In particular, the aspects that mainly it addresses are: (i) citizen-centred approach, (ii) voluntary anonymous interview to favourite communication of true views, (iii) informatics tool supporting interviews able to analyse data highlighting problems and needs. Thus, the informatics tool addresses the benefit of giving evidence of new information and of the importance of communication among citizens, health providers, and interested actors. Moreover, interviews also give citizens the opportunity to reflect on their own behaviour so an interview by itself is a method to improve communication.

Some important critical indicators, concerning people's approach to medicines deriving from this strategy are the self-administration of medicine, the self-interruption of treatment, the reading of the information leaflet, and people's suggestions/listening requests. Finally, here we propose a new informatics tool applying a similar methodological strategy concerning people's approach to health care system. In our opinion, such a tool might contribute to improving communication, and also support performance and efficiency in health system sub-components, in a local context (Figure 1).

We think it could be suitable, for instance, but not only, to face critical situations, such as the one that occurred with the COVID-19 pandemic. This software platform, installed in a dedicated laptop, could allow to collect and store information through anonymous interviews with adult citizens according to possible problems or suggestions concerning their approach to the health system. Some initial tests (during the COVID-19 pandemic, not inside healthcare facilities) are encouraging in terms of usability of questions path and of the set of options supporting data analysis, in particular, the easy-to-use and multi-choices option, and analysis options also able to relate answers. Importantly, the software platform is designed to collect data anonymously in aggregate form and no information concerning citizens' health conditions is considered. In order to evaluate the people's needs concerning

their approach to health system sub-component, such as an area or territory, the platform aggregates the answers directly during the sequence of questions. The possible approach is by informing citizens about the initiative and by proposing an anonymous face-to-face interview (voluntary) in interview spaces, in areas open to the public, and at the same time allowing a face-to-face dialogue. We consider the step of interaction with a person, for instance, a researcher, who encourages message transfer and also allows a kind of self-evaluation as important. The aggregate results could enhance communication also indirectly and provide a source of important information to decision-makers to improve patient satisfaction, services, and efficiency. At the same time, through citizens' engagement, it encouraged the citizens' empowerment, and the involvement of different territories, activities, and actors. Thus, overall this tool can support improving health and care. Our tool could have limitations concerning the software platform data collection anonymously and no information on citizens' health conditions considered, hence it does not support the related analysis. However, our main intent to preserve the participants' unrecognizability is also connected with the importance of a condition favorable to true view communication. Moreover, the face-to-face interview is time-consuming and it requires efforts in terms of dedicated staff. We assume that information and interview points could be organized in different places of territory under study to reach a valuable impact, but an important aspect to evaluate during the presentation of the tool could be the response related to the place where the tool will be proposed. In this context, it will be important to promote actions in a local context, for instance, by a plan to better inform about the tool citizens, policymakers, and other stakeholders.

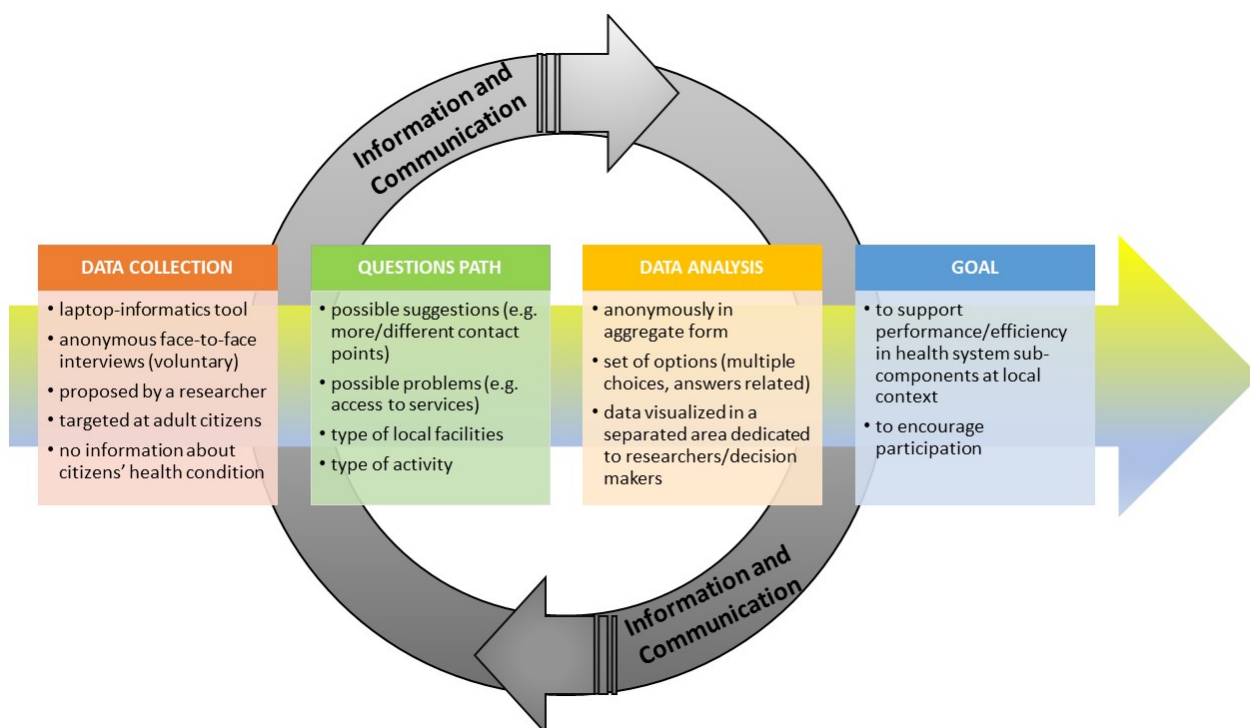


Figure 1. New informatics tool proposed.

4. Conclusions

Health information and communication are gaining more and more attention from institutional and research actors. The COVID-19 pandemic, with its strong impact on the general population's health and its exceptional support measures for the management of emergencies, further has highlighted the importance of adequate information and communication strategies directed at the community.

In our opinion, analysing and better understanding past experience in the field are elements of fundamental importance for recognizing what is most suitable for designing

future interventions to enhance health information and communication targeted at citizens. We have, then, briefly summarized some examples of approaches already used for the purpose at national and international levels and our recent experience. In particular, we focused on actions targeted at the general population community level and concerning the approach of citizens to medicines and health systems.

Some important key aspects emerged across the various initiatives. Among others, for instance, the gap in knowledge of citizens and their need for more information and involvement in decision-making concerning health. The importance of initiatives tailored to the local context and of balance between bottom-up and top-down interventions are other examples of key factors that have emerged as well. Health information technology seems in need of further efforts. Interestingly, however, some experiences have shown how the COVID-19 pandemic has been an opportunity to develop and enforce HIT. Finally, we have also described how we have tried to address these aspects through a combination of strengths strategy that could represent a novel integrated strategy useful to inspire new ones. Our experience by actions in a local context involving collaboration among actors and also adequate informatics application can be important to address key factors concerning citizens' approach to medicines and approach to health care system, enhancing communication and participation. In fact, in our opinion, such a methodology, by a strategy that naturally generates feedback useful to improve the tool itself, may bring out not only needs even common to other contexts but also the requests of the territories with their peculiarities, disfavours the isolation and favours their involvement. We believe that such studies, by providing real data and experience of tools enhancing communication, could be a very useful way to support potential future actions and contextually contribute to improving health and care at the community level.

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