Healthy Living: does “the messenger” make a difference?

Evidence from an experiment of co-production with teenagers in Tuscany

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**Introduction**

Health is per definition a co-produced value: the role and responsibility of people in reaching a good health outcomes and, more in general, good health conditions are crucial (Batalden et al. 2016). In addition, services are always co-produced also (Vargo and Lusch 2008, Osborne, Radnor, and Nasi 2012, Gronroos 2011). Thus, considering that the healthcare system substantially provides services, this should be true also for the public healthcare sector. In this sense, the importance of the role of the single person (the citizen, the patient, the caregiver) in the healthcare service’s value production seems self-evident. As a consequence, to be effective the co-creation process in healthcare needs to be people-driven, or almost people-oriented, at each level of the service provider organization and healthcare system. However, the ‘client-orientation’ in the healthcare sector presents several problematic aspects, as Joiner and Lush highlighted (Joiner and Lusch 2016): despite the healthcare systems’ goal is to meet the health needs of individuals and the strategic efforts of several healthcare system concern with patient-centeredness or patient-engagement, generally healthcare is not yet ‘client-oriented’ or, better, people-oriented. It is strongly focused on the service provision, rather than on the value produced to the patients, the caregivers, the communities and the wider population.

According to the service-dominant (SD) theory, participation and contribution of the ‘client’ through relationships and interactions is the sole way to really create or deliver the value of a service. Another crucial point in this theory is represented by the integration of resources (i.e. knowledge and skills) by a network of participants to the co-production process (Vargo and Lusch 2008). Transposing this approach to the healthcare sector, the healthcare organizations should consider both individuals and
healthcare workers as potential source of knowledge, innovation and value creation. To this end, the healthcare organizations should work in making the healthcare workers aware and empowered in their role of creating value with respect to the interaction with the healthcare services’ users (Sorrentino et al. 2015). In this sense, the organization’s ability to facilitate the integration of the resources coming from different stakeholders, together with the mutual trust and the change of the organisational culture, has been recognised as important positive determinant factors of the process of co-creation of value (Gill, White, and Cameron 2011). In this perspective, the process of value creation is a co-production process, enabled by internal and external stakeholders’ collaboration and participation to a value-creation system (Normann 2001a, Sorrentino et al. 2015). It is intrinsically a win-win process, based on several different and sometimes conflicting motivations of each stakeholders’ group to co-produce the service and create value (Ostrom 1996).

Under this logic with a particular focus to the public sector, the partnership between public servants and citizens is a crucial aspect in the co-production process for the sharing of assets, resources and contributions and achieving better outcomes and more efficiency (Osborne et al. 2015, Loeffler et al. 2013), but it is not sufficient. However, the public servant, in this case the healthcare workers, have been also considered as ‘input’ of the co-production process (Batalden et al. 2016), or enablers and facilitators (Nuti et al., forthcoming) for people engagement in the process of value creation. According to Osborne and colleagues, the important questions are which should be the role and responsibilities of the public servants in the co-production process, and thus how to manage the co-production in public services for improving public services delivery and trying to draw benefits and value from such processes (Osborne, Radnor, and Nasi 2012).
The co-production of public services seems to be embedded into educational services, because of the overlapping of service production and consumption and the face-to-face contact and interaction between providers and users (Osborne, Radnor, and Nasi 2012). Nevertheless, in a more complex and comprehensive vision of the user’s role in the co-production processes, the ‘prosumers’ and/or ‘consummators’ actually play an active and conscious role in the same process of co-production (Normann 2001a, Toffler 1980). Also according to the SD logic, educational interventions should include the real participation of the ‘users’ and unlock their tacit knowledge for improving and innovating the service delivery (Osborne, Radnor, and Nasi 2012, von Hippel 2005).

In this sense, an effective educational intervention should be based on a ‘reverse teaching method’, basically users-driven, that puts the participants at the centre of the learning process (Knowles 1989). This is fundamental for improving the retaining and internalization of the educational initiative’s contents, and thus for enhancing the process of behavioural change. In fact, an effective educational process provide knowledge and produces stimuli that actually change individual behaviours and result into a process of personal development (Bateson 1977). According to Bateson (Bateson 1977), the participants to an educational initiative learn when they take part into a real, and possibly challenging, experience and go through a collaborative process of ‘learning by doing’.

On the contrary, looking at the use of educational interventions in healthcare, which are usually aimed at changing behaviours (for example in the health promotion and prevention fields), the traditional methods of education based on frontal lessons in educational environments do not include co-production mechanisms and often fail in producing behavioural changes. With particular regard to target population of young
people, the public campaigns of health promotion are usually based on downstream interventions and/or on one-way communication that appoints adults and experts as advice delivers. Furthermore, it is worth pointing out that, in the healthcare sector, the relationship between the provider and the user of healthcare services is characterized by an information asymmetry: health professionals are the almost unique knowledge-owner and patients have to trust them (Mishra, Heide, and Cort 1998, Blomqvist 1991).

However, the increasing availability of health-related information on the Internet and related technologies is producing a generation of more expert and self-confident patients who want to be much more involved by the healthcare system (Richards et al. 2013). This can contribute in changing the relationship and interaction between the healthcare services’ providers and users, on the base of a shared knowledge and on the acknowledgement of the different expertise: the health professionals in regard to the medicine; the patients in regard to their own health conditions, previous experience, preferences and needs (Richards et al. 2013, Richards, Snow, and Schroter 2016). In this sense, a novel view on the mutual roles in co-producing health and wellbeing by patients or people in general, and healthcare organizations is a cornerstone in the knowledge creation and sharing and, as a consequence, in the educational processes. In particular, the educational interventions aimed at promoting health should be based on the recognition not only of the centrality of people and of the consideration their experience and knowledge, but also of the value that they can add to the knowledge production and interiorization, as well as after the phases of production and consumption thanks to the improvements of the daily behaviours.

This article utilizes a case study to describe how the ‘promise of co-production’ in the public sector (Normann 2001b) can be kept in the delivery of public health promotion services to the specific population of adolescents, by examining the
dynamics of co-production and its relationships to the value-creation in a real experience and how the public service organisations might enable and support these value co-production mechanisms. Considering that daily individual habits related to lifestyle in early life stages can determine health and quality of life in adulthood and that the prevention of chronic diseases is especially important during adolescence, the questions that guided this research work were: What if the adolescents become firstly partners, then main actors of these interventions? Can an action of lifestyle promotion based on a co-production process be effective in improving health-related behaviours of adolescents? In this paper, we present the results of working together with a group of students, involved in a large-scale participatory survey, and assigning to them the responsibility of informing their peers about healthy lifestyles.

**Materials and Methods**

This article reports the results of an empirical experience of co-production of a health promotion initiative targeted to adolescents in Tuscany Region (Italy): beFood. An exploratory case study design was adopted, using qualitative and quantitative data gathered during the experience from expert adults (the providers) and teenagers (the co-producers) who took part to the project.

The analysis of a single case study can be useful as a critical test for existing theories (Yin 2013) and to increase knowledge of a phenomenon (Eisenhardt 1989), allowing an in-depth and fine-grained analysis when the studied phenomenon is relatively new and the system in which the phenomenon is examined is complex and in evolution (as the healthcare system is) (Golden-Biddle and Locke 2007). Case studies also help to identify clear research questions on how and why a phenomenon occurs and provide a clear rationale for discussion (Dubé and Paré 2003).
Information was collected with on-field observations of the co-production dynamics occurred during the experience and using a web-based survey to the 49 Tuscan students, involved in the beFood project. More in details, at the end of the experience, the participants teenagers were asked to answer to a questionnaire aimed at investigating their perception and experience in relation to: their role in the co-production processes; the tasks they were assigned; the direct benefits and outcomes of the process, including the appraised knowledge and the change in behaviors; eventually indirect outcomes for their closer networks, in particular the peers and network; and their evaluation of the beFood project, also as health promotion intervention for their peers. These topics were investigated using reporting questions, except for the evaluation of the project that was asked using rating questions. The questionnaire also included non-mandatory open-ended questions on the beFood experience.

**The Case study: beFood**

The beFood project was an innovative public intervention of healthy life style promotion targeted to and conducted with teenagers.

The project was financed by the Tuscany Region and implemented between December 2016 and May 2017 within the mandatory work-related learning pathway for high-school students ‘Alternanza Scuola-Lavoro’, under the supervision and scientific responsibility of a research group of Sant’Anna School, a public Italian university.

According with the Department of the Health Promotion of the Tuscany Region and its local bodies, 10 high schools were selected for the beFood project, one from each of the 10 provinces of Tuscany. 49 students aged 16-17 years were recruited into the project, on a voluntary basis: from each scholastic institution, 5 students participated, with the exception of one school from which 4 students were involved into the project.
At the same time, a multi-disciplinary committee of experts was established, with the aim to support the researchers in designing the project. The committee included: two developmental phycologists, also expert in group dynamics; two experts on physical activity from a national association of sport promotion; an expert on food marketing and communication; an expert on public policies and actions for health promotion; three experts of new media and methods for the public participation and communication. The experts supported the Sant’Anna School researchers: in defining the three phases of the project; in selecting method and approaches to adopt for improving the teenagers’ participation to the co-production process; in framing contents and messages to be shared with the students and channels to communicate with them; in establishing the nature of the task assigned to them.

The specific task was to disseminate as much as possible the knowledge learned during the beFood experience to their peers. In order to have a measurable task, the 49 students were asked to administer a webAPP-based survey to other 16-17 years old teenagers, and, in order to give them a common goal, they were asked to reach a selected number of adolescents for their province, by working in teams. Competitive and collaborative dynamics were activated within the teenagers’ groups, as an incentive for the adolescents’ participation to the project. However, the 49 teenagers had also to reach a common unique target: they were co-responsible with the researchers in producing the research results, by reaching with their work a representative sample for the whole Region (Sherif 1956).

As anticipated, the beFood project was implemented as a mandatory ‘Alternanza Scuola-Lavoro’ pathway, aimed at improving skills and competences that the adolescents can use in their future job. This was important in the process of responsibility of the teenagers and in assigning to them a specific and acknowledged
role. This also implied the need of involving them in crucial activities and assignments for the success of the project.

Finally, a preliminary coordinated image of the project was defined by the committee, in order to make the project appealing to the teenagers and improving the communication-related aspects of beFood. Gadgets were designed and social media profiles (i.e. Facebook, Instagram) were created.

After the planning phase, the 49 students were actually involved into the project that presented three phases: a training week; a field-work phase in which the teenagers were called to disseminate the beFood contents and administer the survey; a phase of results dissemination.

During the first phase of the project, the 49 beFood teenagers were involved into a process of education, activation and engagement that included various activities in which they had a primary role. They were divided into two smaller groups of 25 and 24 teenagers, in order to improve the work in team and enhance the participation of all the students. In regard to the core topics of the beFood project (healthy lifestyle), they were not only repetitively exposed to ‘healthy messages’, but could also have the opportunity to discuss the topics with the experts and the other participant students. They took part into an education and activation pathway in which they not only saw an increase of their food knowledge, but also co-produced the healthy messages by actively discussing and reframing the topics with experts and peers, and also experiencing what they heard. For example, the discussion about the ‘60 minutes a day’ policy (US Dep. of Health 2008) was followed by a one hour walk around the city. A step-counter was used for analysing the walk in terms of steps. The learning by doing activities regarded also the food marketing and communication topics. The 49 students could analyse the web sites and the packaging of some famous food brands, including the food labels, and propose new
ways for ‘making health prevention’ based on the marketing methodology the learnt and, of course, on the preferences of the target population. For example, they suggested to not use with teenagers the Italian words for ‘health’ and ‘healthy’, because they are not appealing and suggest negative reactions and refuse. Otherwise, the English version was considered cooler, together with words around the concept of ‘wellbeing’. In the first phase of the project, the teenagers had also the opportunity to work on the research field with the Sant’Anna School researchers: they tested both the readability of the questionnaire for the survey and the functionality and usability of the webAPP used to administer the survey. In particular, they improved the language used into the questions, added or eliminated some options to the multiple-choices answers where they believed appropriate, and collaborated in defining a final feedback for the respondents. Based on the answers given, the feedback was aimed at providing a fun profile and at giving suggestions on how to improve or maintain a healthy life style, also stressing the importance to give (or ask for) support of peers and relatives. The 49 teenagers and the researchers co-defined these feedback, favouring cooler, positive and encouraging messages. Thus, on the one hand, the beFood project used tools, languages and channels co-produced with the 49 teenagers and, on the other hand, encouraging the teenagers’ participation in learning-by-doing activities regarding every topic of the project: from nutrition to physical activity, to food-related communication and marketing, to research. The roles of both teenagers and researchers were sometime blurred and always shared. Moreover, the various activities were aimed at building on the teenagers’ skills and knowledge, with the aim to improve them and, thus, the teenagers’ self-confidence.

In the second phase, the 49 students had a period of four months for contacting their peers, in order to disseminate the beFood message and administer the webAPP survey. They were free to select how to enter in contact with other adolescents and
which channels to use in giving access to the webAPP survey. They chose a ‘multiple’ approach, using social networks and, mainly, visiting their sport association, gym and other similar places as well as other schools, to enrol the respondents. In this phase, the researchers had a role of supporters, advisers and/or facilitators, only in case of need, while the 49 students were the main actors. They had to face their peers and find the most effective strategy for talking them about ‘health’. Their resilience was ‘tested’ also by the work with the adults (i.e. school principals, parents), in order to solve bureaucratic problems and reach a higher number of peers during the students’ assemblies or the school lessons. In this stage of the project, the self-activation of the teenagers was very important in the process of co-delivery of the public intervention of health promotion and, most important, for the co-production of the teenagers’ health literacy and, more in general, health.

The results were used to inform policy-makers in the third phase of the beFood project with a dedicated report (Nuti et al. 2017) and during a public event, hold at the end of May 2017, in which the 49 teenagers presented the evidence produced with the project and its implications. In this phase, the teenagers worked together with the researchers for identifying the most significant findings, synthetizing them into a presentation and making them attractive. The teenagers accounted for their work and showed its results and implications.

Results

Overall, the process of co-production proved to be fruitful in two respects: a large number of responses (5,029, of which 4,749 16-17 years old adolescents) was gathered in the peer-to-peer approach of the survey administration and, more importantly, the authors could observe how the work-together and the self-activation
produced fertile terrain for the evolution of the target group into a trained class of instructors.

The number of respondents to the webAPP survey demonstrated that at least 500 teenagers was reached by each participant student and, as a consequence, by the beFood message: all the 4,749 teenagers received their synthetic profile and the personal feedback on how to have a healthy life style.

The very large audience touched by a group of only 49 students was the results of the different co-production dynamics described above, and, in particular, of the process of education, activation and engagement followed by a process of self-activation during an on-field experience. In the first phase, the public servants (i.e. researchers, professionals) implemented several mechanisms aimed, on the one hand, at putting the adolescents’ skills, knowledge, idea and expectations at the centre of the beFood project and, on the other hand, at partnering with students by distributing the responsibilities and the roles, and by sharing the idea that they were crucial to the success of the project and potentially important for the wellbeing of their closer networks of people. The teenagers were confident and able to activate and grow up their networks for disseminating the beFood message. While we expected that the digital and social media channels could facilitate the dissemination of the beFood contents and the webAPP survey, it emerged that the face-to-face communication was much more effective even if more challenging. The peer-to-peer process enabled directly by the 49 students resulted in a significant and large activation of their peers, at least in terms of participation to the beFood survey and exposition to its healthy message.

These findings emerged also from the web-based questionnaire that all the 49 students completed at the end of their experience with beFood. They reported an important improvement of their knowledge about the topics related to both how to adopt
and maintain a healthy lifestyle (80% of the students) and the research field (more than the 77%). Also about the skills and competences on which the project built, they reported a very high improvement of their abilities in the team-working (60%) and voluntarily declared in the open-ended questions an improvement of their self-confidence and public speaking abilities.

With regard to the role and responsibility that was assigned to them, despite they were very challenging, almost the 70% of the 49 students reported a positive evaluation of their task and the 40% of them reported to have had a great influence on their peers, in relation not only to the participation to the beFood survey, but also to the ‘changing power’ of their healthy message.

About the participation to the beFood project, almost the 87% of the 49 students felt to be protagonist in disseminating the beFood contents, being integral to the success of the project and helpful to its social purposes. Almost the 80% of the beFood student rated high or very high the responsibility that they had within the project. More than the 80.5% of the students felt proud of the participation to the beFood experience.

An important aspect emerged by the questionnaire to the 49 students and by the on-field observations was the trust: the 82.5% of the students reported that the adults gave them trust and, in the open-ended questions, they stressed that this aspect was fundamental in the second phase of the project. The enabling and facilitating role of researchers and experts, as well as the sense of ‘I can handle it’ that they gave them was more important and decisive in the target achievement rather than the operative support.

This experience demonstrated that, if adequately supported, message recipients can become effective messengers and testimonial of health-related information. It worth pointing out that the role of the professional or, more in general, of the public servant changed completely in the beFood approach. If usually the health promotion initiatives
are hold and controlled by the service providers, also in case of co-production processes, in this case the intrinsic process of co-production of any service delivery was accompanied, if not replaced, by an explicit co-production process in which the people involvement was embedded into the health promotion production and delivery and, the traditional recipients were really active and aware of their role of main actors of the co-production process, co-delivers of the service and first directors of the following actions of value production.

In fact, what emerged by the questionnaire to the 49 students was a changing-behaviour effect of the beFood co-production process and a related halo-effect. More than the 50% of the 49 students noted an improvement of their life style. This result refers to those students that reported a worse life style behaviours answering to the beFood survey. The 40% of the students declared to pay much more attention to the life style behaviours of other people in their closer networks than before the beFood experience. In the 24% of the cases, they reported to have voluntarily started giving advices and suggestions on how to improve the life style to other people, mainly their peers and relatives.

The co-production process implemented within the beFood project produced a halo effect that overcame the direct goals of the health promotion action itself and produced a wider value. The education, activation and engagement process guided by the professionals supported the sharing and internalization of knowledge and the co-delivery of the promotion service, in the one hand; in the other hand, the individual-centred process of co-production and the individual-driven process of co-delivery produced a health behavioural change. The participants to the process internalized both the healthy messages and the role shared with the public servants, thus beginning advocates and testimonials of the healthy behaviours and autonomously emphasizing
the impact of the health promotion project by spreading the healthy messages and, directly, with their behaviours. In this way, the co-production and the delivery processes of beFood resulted in the achievement of broader social purposes also.

**Discussion**

The case study presented in this article shows that an action of lifestyle promotion based on a co-production process can be effective in improving health-related behaviours of adolescents, when the adolescents become firstly partners, then main actors of these interventions.

An effective strategy of health promotion and prevention should be based on a direct involvement, activation and empowerment of individuals, in a co-production process which sees people as main actors and partners, not as targets. In addition, the case study described in this paper demonstrate that a well-designed co-production process in which knowledge and responsibilities are shared can result into an effective partnership between individuals and public servants that produced direct benefits for the co-producers and, furthermore, achieved additional wider social purposes.

According to this approach, the healthcare organizations can enable and support these value co-production mechanisms, by recognizing the importance of the knowledge and role of both public servants/health professional and users/people (previously recipients) into the value co-production processes. Healthcare professionals should support people in actively undertaking learning processes that may lead to the adoption of healthy behaviours and to their sponsorship among peers and closer networks of people.

The public sector in general, and the public healthcare sector in particular, can improve its effectiveness in reaching social goals, through a re-organization that includes the change and evolution of the public servants/health professional role and of
their interactions with the public, thus innovating the service production and delivery mechanisms. In fact, if it’s true that the value produced by public organizations lies in the achievement of social purposes (Moore 2000), value created by co-production is always considered collective (Alford 2014). However, Alford considers it a mixture of public and private (Alford 2014), Ostrom and colleagues only public (Ostrom et al. 1978), while for Nuti and colleagues (Nuti et al., forthcoming) the public value is achievable only by using co-production processes that are able to create firstly at creating the personal value and at enabling people in producing a public, collective and social value. Grounding on this last perspective, the findings presented in this paper illustrate which co-production dynamics can be added into the public services production and delivery, how they are related to the value production for the participants and the community/society, how to manage them and how the public service organisations might enable these value co-production processes reshaping the role of the public servants and giving them different responsibilities.

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