Health communication in primary health care - A case study of ICT development for health promotion

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Abstract

Background
Developing ICT supported health communication in Primary Health Care (PHC) could contribute to increased health literacy and empowerment, which are foundations for enabling people to increase control over their health, as a way to reduce increasing lifestyle related ill health. However, to increase the likelihood of success of ICT supported health communication, it is essential to conduct a detailed analysis of the setting and context for health communication prior to starting an intervention. The aim of this study was to gain a better understanding of health communication for health promotion in PHC with emphasis on the implications for a planned ICT supported interactive health channel.

Methods
A qualitative case study, with a multi-methods approach was applied. Field notes, document study and focus groups were used for data collection. Data was then analyzed using qualitative content analysis.

Results
Analysis shows that health communication is an integral part of health promotion practice in PHC in this case study. However, there was a lack of consensus among health professionals on what a health promotion approach is, causing discrepancy in approaches and practices of health communication. Two themes emerged from the data analysis: Communicating health and environment for health communication. The themes represented individual and organizational factors that affected health communication practice in PHC and thus need to be taken into consideration in the development of the planned health channel.

Conclusions
Health communication practiced in PHC is individual based, preventive and reactive in nature, as opposed to population based, promotive and proactive in line with a health promotion approach. This is the biggest challenge to the development of an interactive, health communication channel for a health promotion approach, and health promotion values and principles. By addressing these issues health communication via the ICT communication channel could be developed more deliberately to support health communication for promoting health i.e. 'health promoting communication'.

Keywords: Health Communication, Health Promotion, Case Study, Health Promoting Communication, eHealth, Primary Health Care.
Background

Primary Health Care (PHC) has been singled out as the most suitable health care setting to meet the increasing need for health promotion interventions and to curb the rising number of chronic diseases [1-3]. A majority of people depend on health care services for health information, yet PHC is poorly equipped to provide this service [4]. Developing ICT supported health communication in PHC could contribute to increased health literacy and empowerment, which are foundations for enabling people to increase control over their health and its determinants, and thereby improve their health [5-6]. To “avoid murky water and increase the likelihood of success” [7] (Pg 506) it is essential to conduct a detailed analysis of the setting and context prior to starting an intervention. The aim of this study was to gain a better understanding of health communication for health promotion in PHC in the southeast of Sweden with emphasis on the implications for a planned interactive ICT supported health channel, as the first phase of the development an interactive, ICT supported health communication channel for health promotion.

Health communication in this paper is defined as “the art and technique of informing, influencing and motivating individuals, institutional and public audiences about important health issues [8]. The communication adopts a participatory approach whose main aim is empowerment through dialogue and mutual learning. The communication process is as important as the outcome [9].

ICT supported health communication
A recent Swedish national eHealth report [10] criticized the predominant individual and pro-medicine” focused approach in health and social care, and called for a broadening of the concept of health that is holistic and proactive in its approach. One of the recommendations was to find innovative ways to design ICT systems in health care that could contribute to individual health, wellbeing and quality of life and to achieve sustainable e-services in general. Thus, there a need to rethink health promotion even in planning for ICT mediated health communication [11-12].

Health communication designed to address population health functions best when it is integrated into comprehensive health initiatives [13]. Implementation of ICT or eHealth applications is essential to meet growing demands for cost-effective, appropriate and individually tailored health care as well as to increase accessibility to health services [10], improve population health outcomes and to achieve health equity [14]. Yet the implementation of ICT supported health communication for health promotion within health care services has been slow in uptake [11, 15]. The development of health communication for promoting health has mainly taken place outside the health care services [1]. When health communication does occur within the health care services, it lacks a broad socio-ecological health promotion approach, needed to tackle lifestyle related ill health and health inequalities [11, 16]. An ecological approach to health promotion addresses socioeconomic and cultural factors that determine health as well as providing information and life skills to make appropriate health decisions. This health promoting approach includes both promoting health and disease prevention [17], while health promotion initiatives focus on isolated risk or disease prevention in accordance with epidemiological evidence. The former is what is referred to as a health promotion approach in this paper.
**Setting**

The setting for this study is a PHC center and its health promotion center 'Hälsotorg' in the southeast of Sweden. Hälsotorg emerged in several county councils in the 1990’s as a collaboration between the Swedish state-owned pharmaceutical company and PHC, to provide a more health promoting PHC [18]. Managed by Health professionals, Hälsotorg provided health information, individual health counseling on chronic diseases and life style related issues, lifestyle tests, group activities and access to a free, trustworthy Internet-based health information site. The concept and ambitions of Hälsotorg were appreciated by health personnel as well as visitors [19]. This development made PHC a natural entry point for re-orientation of health care towards more health-promoting health services as proposed by WHO [1, 20] and the Swedish National Public Health Policy [21-22].

To improve accessibility and reach out to a larger population, especially the local community with health promotion, a research and development project entitled 'Virtual Hälsotorg' (VHT) was initiated to make Hälsotorg more accessible to the local community through an Internet supported interactive health channel. This channel was to be specifically adapted to the socio-cultural context of PHC and the local community. The VHT project was part of an EU funded research and development project exploring how to increase citizens' accessibility to and participation in use and development of health care services by using ICT. This paper presents the initial phase of this project, which in the STAR model is referred to as “listen” and entails interacting with the target group, familiarizing with the context, finding needs and wants as well as identifying how subjects interact with technology.
Methods

Study design

A qualitative case study [23] methodology with multiple data collection methods was applied to his study. The empirical inquiry focused on a better understanding of Hälsotorg and factors influencing health communication therein, as a contemporary phenomenon within its real-life context of PHC. Since the boundary between Hälsotorg and its context (PHC) are not clearly evident, the whole context was treated as a single case study [23]. The case and unit of analysis was the phenomenon 'health communication' in the context of PHC in general and Hälsotorg in particular. Case methodology and multi sources for data collection provided different perspectives on the phenomenon studied, thereby increasing the credibility and trustworthiness of the results [23-24]. According to Yin, use of multiple sources of evidence allows the investigator to address a broader range of issues comprehensively thereby contributing to convincing and accurate findings or conclusions [23].

The VHT project adopted a comprehensive Participatory Action Research (PAR) approach [25] and a model entitled Spiral Technology Action Research (STAR) [26] was used to guide the design process throughout the different studies representing the different phases of development of the VHT channel. Participation in this first phase consisted of participatory observations, consulting informants during the fieldwork and getting feedback on the content analysis of the data.
Case description

The case study setting is a PHC center in the south of Sweden, serving approximately 10,500 inhabitants. The PHC center houses several health service units: General Practitioner (GP) and District Nurse (DN) consultations services, Child Health Care Services (CHS), Hälsotorg, a Pharmacy as well as a Dental and a Psychiatric Clinic. The GP, DN CHS and Hälsotorg belong to the same organization and are referred to collectively as PHC in this paper unless the need to separate them arises. Hälsotorg was partly owned and managed by the PHC in this study.

Data collection

Multiple methods were used to collect the data: participatory observation, focus groups and document analysis. Purposive sampling of informants was used to identify information rich sources [24] among health care personnel in PHC and members of the local community. The identified study population was DNs, PHC managers, a pharmacy manager and pharmacists working in Hälsotorgs across the region, the regional public health strategist, and Hälsotorg visitors, including an immigrant group. The immigrant group was a strategic choice as they rarely visited Hälsotorg but was a group who needed health information, according to Hälsotorg personnel. Table 1, shows a summary of data sources and methods used for data collection.

During the field study AJM took part in the Hälsotorg activities as well as staff meetings in the PHC where the Hälsotorg coordinator worked. A manual was used to guide the data collection. Observations notes, impromptu conversations and personal reflections were recorded, simultaneously when the situation allowed or at the end of
the day. When Hälsotorg visitors allowed it, AJM actively participated in the activities such as helping visitors to carry out health controls, fill in forms and weigh themselves, which gave the opportunity to closely observe the activity and ask questions in an unobtrusive way [23,24].

Focus groups were conducted with actors involved in health promotion in PHC (Table 1). A semi-structured interview guide divided into two parts was used; the first part was set out to identify health communication as practiced at the PHC as well as factors that could promote or hamper it. The second part was set out to identify potential areas for improvement of health communication using ICT. The interview guide was modified to adapt to the different groups of informers in order to capture the varying perspectives, experiences, roles and needs. The themes covered in the interview guide were: experiences of health communication in PHC; health communication for health promotion; knowledge and experience of Hälsotorg; experience of or/and use ICT supported tools for health information and suggestions for improvements of health communications for health promotion. Hälsotorg and PHC personnel will henceforth be referred to as health personnel unless there is a need to differentiate them. A letter with information on the project and a request for participation was sent out to all the prospective participants in PHC and a Swedish language class for immigrants. The case was expanded to include personnel from the other three Hälsotorg in the region to get a broader perspective. Respondents to the letters were later contacted to decide on dates and places for focus groups.
Documents consisted of two national health policy documents and three local policy documents related to the development, visions and goals for health promotion in PHC and Hälsotorg, acknowledged in a previous Hälsotorg policy analysis [18]. The rest of the documents consisted of an evaluation report of Hälsotorg in the region, meeting protocols, monthly reports (mainly activities offered and statistics of visitors) kept by all Hälsotorg during the field study (Table 1).

**Data analysis**

Qualitative content analysis [24] following an inductive - deductive process was applied. The data was read repeatedly to achieve immersion and obtain a sense of whole. Data from field study, focus groups and document analysis were thereafter analyzed, coded and categorized separately. Emerging categories were constantly compared to topics in the interview guide in order to fulfill the study aim. Categories were then compared and integrated into themes (Table 2) based on the aim of the study to form a rich description of the case [23]

**Ethical considerations**

The informants were informed on the nature of the study, in accordance with the Swedish Ethical Review Act (SFS 2008:192). Informed consent was obtained from participants. Permission to a conduct field study was granted by the PHC manager, and by patients and Hälsotorg visitors. One of the main aims of PAR is to create equality between the researcher and research subjects [24] as well as making explicit the researchers assumptions, values and motives [23]. To achieve this kind of transparency, AJM informed all the participants from the onset of the project; talking
to the personnel, taking part in workplace meetings but also holding debriefing sessions with the other research members to ensure that personal values and motives did not affect the outcome of the study. Debriefing sessions provided useful arena to discuss difficulties caused by due to AJM’s dual role of a researcher and health worker when actively taking part in the activities in Hälsotorg. However, since the participatory element of enquiry was limited to participatory observation, few problems were encountered as the researcher was sensitive to the participants’ wishes [24]. For instance, AJM would always seek their permission prior to engaging in any activity. The study was approved by the regional ethical committee for Lund/Malmö region, (based at Lund University) diary number 2009/120.

Results

The overall analysis shows that health communication is an integral part of health promotion practice in Hälsotorg and PHC but there was a dearth of consensus among health professionals on what a health promotion approach is, causing discordance in approaches and practices of health communication. Two main themes emerged from the analysed data: Communicating health and Environment for health communication (Table 2). The results are presented in these themes with their categories and sub-categories. Quotations are included to illustrate how the interpretation is grounded in the data.

Communicating health

Communicating health was identified as a major function for PHC by all informants. This theme captures how health was communicated, understood and practiced. Health
personnel identified a number of *strategies* and *tools* used for health communication as well as *types* of health communication carried out in PHC.

**Strategies for health communication**

This category mirrored two different approaches used by health personnel to accomplish objectives for health communication; *empowerment* and *behaviour change strategies*. Empowerment was indicated in the policy documents, and acknowledged by health personnel, as the ultimate goal for health communication in PHC. Field studies and focus groups indicated however that the empowerment strategy was more evident in Hälsotorg and in CHS compared to the rest of the PHC units.

In the *empowerment strategy*, health personnel assumed the role of a dialogue partner and facilitator for the learning of patients and visitors and decisions based on their understanding of the information they received. This approach was commonly referred to as ‘*meeting the clients where they are in order to guide them to where they want to get to in terms of better health*’ by the DNs. In most Hälsotorg this empowerment strategy mostly focused on building capacity and providing tools for visitors to make informed decisions or creating solutions to health problems or lifestyle changes through a dialogue, while in CHS, it focused on facilitating empowerment of parents and creating a supportive environment for families. As one Hälsotorg visitor expressed:

“Here (in Hälsotorg) I can discuss different things at the same time, I was referred here by my Doctor because of my high cholesterol but then, I ended up discussing my sleep patterns…that is more disturbing to me really…than high cholesterol (laughter). You can’t do that at the PHC” (Hälsotorg visitor 1).

Or as one informant expressed;
”…That’s how we work all the time, promoting health and preventing ill health in the home…now we focus a lot on unhealthy drinking and we routinely ask both mothers and fathers about their drinking habit…not just mothers. It is important that children are safe and parents who need help, feel they can get it”(FG 1)

In contrast to the empowerment strategy, the behaviour change strategy focused on disease and risk prevention. Health personnel were more or less authoritative and ‘instructed’ the patient/visitor, assuming the role of expert, who ultimately informed the patient/visitor, what was best for them. One of the (health) personnel explained the health communication process as follows:

"We normally go through their (patients’) eating habits and daily exercises together…if any… and then I show them what they are doing wrong. Then I “teach them” the right diet and tell them that they have to exercise at least half an hour per day. Some do not follow our advice but that’s their own responsibility” (FG 2)

Comparison of data from interviews and field studies showed that the different strategies could be traced to health personnel’s understanding of the health promotion concept and the exhibited discrepancy between their intentions to promote health and the existing praxis for health communication in their respective units

**Tools for health communication**

This category included tools as channels, tools as methods, and tools as competencies. Tools as channels for health communication included telephones, printed and electronic materials, and Internet-based resources. These were used for health communication with patients/clients/visitors separately or in combination, depending on the nature or purpose of the activity and the desired outcome.

According to informants and observations, telephone, printed and electronic materials were common channels for health personnel’s communication with patients and visitors. Health personnel used Internet mostly to search for health information for the
purpose of updating their knowledge or to retrieve health information materials for their clients/visitors. Patients and visitors used telephones mostly for health communication with health personnel, while Internet was used to seek knowledge in an area of interest or concern-mainly chronic diseases and self care.

*Tools as methods* included questionnaires, brochures, and electronic or printed health tests. Almost all individual counselling sessions were initiated using a printed or electronic health questionnaire followed by a dialogue. Health personnel were positive towards these tools, as they gave structure to health communication activities. However, according to health personnel and visitors these methods could potentially encourage an expert-laymen approach, reducing health communication to filling of questionnaires instead of having a dialogue between partners. Health personnel acknowledged the shortcomings of the questionnaires as an effective tool for promoting health as follows:

“...yaa (hesitating) ...we don’t produce them (questionnaires) ourselves...they are standardized and most people have more than one health concern, there is a risk that you focus too much on the questionnaire instead of listening to the patient“(FG 2)

*Tools as competencies* for health communication encompassed knowledge and abilities, and pedagogical skills for health communication. Knowledge and abilities refer to skills necessary for health personnel to impart health related knowledge that influences individual health choices and self care. Pedagogical skills refer to health personnel’s ability to apply those skills appropriately and in a way that fosters empowerment in their clients/patients. DNs, in particular, expressed a desire for internal courses to improve their pedagogical skills and capacity to act as health promotion agents. As expressed in one of the focus groups:
“...of course we can be better at communicating when it comes to health promotion and disease prevention...but it is not always easy. For instance, when you get a patient with hypertension who is a bit fat, you can talk about diet...but to apply it generally in the day to day activities is hard...that needs a different kind of structure, skills and knowledge...pedagogical skills that unfortunately are not there in us...” (FG 1)

**Types of health communication**

Three types of health communication were identified from the data: *interpersonal*, *group* and *ICT mediated* health communication. *Interpersonal communication* was the most common type of communication used in PHC and at Hälsotorg as the majority of activities/services targeted individuals. Motivational Interview (MI) was the recommended method for individual health counselling in county council policy document and also acknowledged and used by the DN’s. According to health personnel, it is important to identify patient’s source of motivation as opposed to health personnel’s. As exemplified in the following example by health personnel:

“...it is hard for people to change their habits...but we try to help them identify things that would make them want to change, for example if a visitor is diabetic and overweight...to us it is natural to say diabetes is the problem, but maybe the person wants to lose weight because they want to look beautiful...(all informants nod in agreement)...then beauty is that person’s motivation but in the end the results (of losing weight) would be good for their diabetes too” (FG5).

*Group communication* was mostly applied at Hälsotorgs during group activities such as physical training sessions and lectures. Findings show that group activities were appreciated by both Hälsotorg personnel and visitors. Hälsotorg personnel saw these sessions as opportunities for health communication with a larger number of people. For visitors, these sessions were more than just an opportunity to exercise; they presented an opportunity for socialisation. As expressed by a Hälsotorg visitor:

“Hälsotorg has saved my life...I come every Tuesday and walk with this group...it is nice...I made some friends...and the DN can see when somebody is having
difficulties...I have a bad heart and I would never dare go on long walks like this if I didn’t know there was somebody to help me if I collapse...she sometimes tells me and the whole group to reduce our pace...because she “sees” when I am struggling...”
(Hälsotorg visitor 6)

*ICT mediated health communication*, especially the Internet, was regarded as an important media for health communication by all informants. Younger Hälsotorg visitors and immigrant informants were positive to Internet as a source of health information; they reported using Internet for health information needs more extensively than health personnel and older Hälsotorg visitors. Immigrant informants used both Internet and digital television, as these channels offered health information in their native languages. A common phenomenon noted during the field studies was the number of Hälsotorg visitors coming in with health information acquired from the Internet, wanting to discuss with the personnel. A DN expressed criticism of the Internet as a source for health information as follows:

“...patients come with all kinds of information, sometimes wrong information and it’s hard to counter that kind of misinformation...the new health channel would be good because we will be able to give them access to health information that we know is correct...” (FG 3).

**Environment for health communication**

The environment for health communication was seen as both facilitator and barrier to health promoting communication efforts in PHC. Two important factors affecting the environment of health communication were identified: *Strategic positioning* and *Collaborating for health communication*. Positioning of Hälsotorg within a PHC center affected health communication at both the general PHC units and the *Hälsotorg*, and also the collaboration between the different actors.
Strategic positioning

According to the analysed policy documents Hälsotorg were strategically placed both organisationally and physically within the PHC context to provide local citizens with health promotion and disease prevention services and to help them navigate the health care system, using health information and health communication strategies. Provision of these services was aimed at increasing health literacy and capacity for self care among the population, which was supposed to reduce pressure on the PHC medical services. Organisational and physical positioning were identified as important factors shaping health communication practice in PHC.

Organisational positioning referred to the placement of Hälsotorg within the PHC administrative organisation. According to the National Pharmacy Action plan, placing Hälsotorg within the PHC and the pharmacy organizations was a strategy to profile health promotion and disease prevention services in order to involve local citizens in a health dialogue, help people manage their health problems and stay healthy. The Pharmacy, which already had counseling services and a large flow of mainly healthy customers, could play an important role in promoting health at population level in collaboration with PHC. The county council plans also highlighted the importance of adopting a health promotion approach and the creation of a supportive environment for health within the health care services. Hälsotorg was pinpointed as an important setting for realization of these esteemed goals in the first plan (2007-2009) but was not mentioned in the second plan (2008-2010).
PHC was associated with being sick in most people's minds, according to DNs. ‘Healthy people’ rarely visited PHC, a statement that was echoed by-immigrant informants and Hälsotorg visitors. They only contacted or visited PHC when they were ill, prior to their knowledge of Hälsotorg’s existence. The most frequent visitor was a middle-aged woman or an elderly male pensioner with multi-health problems. Some of the health personnel perceived the clientele as being the ‘wrong type’ for health promotion interventions. They expressed a wish to relocate Hälsotorg in order to attract a ‘younger, healthier clientele’ as follows:

”…It is perhaps about the kind of people who walk through our walls (referring to the PHC building)... am I being mean? It is the wrong target group. I feel like.....maybe we ought to go to schools, class 7, 8 …9, those are the ones we should be aiming at” (FG 2).

However, not all health personnel held the same view. Some regarded the placement of Hälsotorg within PHC context as perfect as exhibited by another health personnel informant

“…we cannot only target the healthy, we have an obligation to help those who already experience ill health…like those with diabetes, they really consume a lot of resources and the best place to “capture” them is in PHC where they come for regular controls. If we can help them prevent further health deterioration like kidney failure, then it is worth the effort” (FG2)

In ambition to reach out to a larger and “different” audience with health communication, Hälsotorg personnel conducted ‘Hälsotorg on wheels week’ where they set up camps in the town centre and offered their services to the general public, a move that was much appreciated by both the personnel and the public, according to the records kept by the Hälsotorg personnel.
The DNs’ opinion about the positioning of Hälsotorg was not shared by informants in FG 3, who regarded Hälsotorg’s positioning as the best location as Hälsotorg could intercept people with minor health problems with services geared towards primary and tertiary disease prevention. DNs in the focus groups (FG1 and 2), indicated that the organization management promoted the image of PHC as a setting for ‘sick care’ through policies on the physical environment of the clinics and gave an example whereby no posters or information leaflets with health information were allowed in the waiting rooms in the GP clinic while it was allowed in the CHS and at Hälsotorg which caused frustration among the personnel, as one of them expressed:

“Sometimes, I feel like we can be more proactive…put up information pamphlets and posters on HEALTH! …” (FG2)

Another participant suggested that the PHC management thwarted their efforts to use health communication proactively, expressing disappointment as follows:

“..we don’t have notice boards here, I tried to put up some notices on health promotion activities but was summoned and told that I cannot do that…by the management!...I don’t understand how they reason” (FG 5)

Physical positioning refers to the placement of Hälsotorg in the entrance hall of a PHC and/or a Pharmacy or a hospital. Field study observations revealed that Hälsotorg’s physical position made it easy for people to stop by and discuss health concerns, obtain help to navigate the health system e.g. to find the appropriate health clinic at which to seek help. On arrival at the Hälsotorg, curious passersby and referral patients from PHC were introduced to a variety of free services offered. These included universal health information, individual health counseling and access to trustworthy Internet-based health information sites for health promotion. For visitors
with a high risk for lifestyle-related diseases like diabetes and cardiovascular diseases, *disease prevention services* such as hypertension control, lifestyle tests and group physical activities were offered. The most popular group activity was aerobics for people with physical disabilities.

A disadvantage of the openness of *Hälsotorg*, was the surrounding noise and lack of privacy during consultations and individual counseling. This was observed during field studies and later acknowledged by the informants. The noise often led to irritation and disgruntlement, thereby affecting the quality and outcome of the sessions. *Hälsotorg* personnel expressed that the planned *Hälsotorg* channel would partly solve this problem:

“This virtual *Hälsotorg* channel can be good for us; it presents a totally new way of planning individual counseling…we can offer a quieter, individual based counseling in the comfort of their homes…”(FG 3).

Adding that the privacy presented by the VHT would enable them to increase the range of services offered to their clients as follows:

“…We can even put up programs (in VHT) where clients can work at their own pace and convenience, without stress or worrying about being disturbed” (FG 3)

**Collaborating for health communication**

Collaboration within and outside the health care services such as NGO’s, churches, local communities and municipalities was highlighted as very important for promoting health and providing a supportive environment for health (County Council plan 2007-2009). *Hälsotorg* was specifically pointed out as a significant converging arena for the different actors to collaborate in creating a supportive environment to achieve health services’ health promotion goals, a setting for communicating health with both patients and local citizens (ibid).
Locating Hälsotorg within the organisational and physical boundaries of health care services resulted in successful collaboration between different professionals and health care organisations for many years, according to the informants and document analysis. Informants acknowledged that making use of the available resources within the different sections of the PHC organization would benefit patients/visitors especially, in health services where lack of resources and time constraints was the norm. However, different structural and organisational factors served as facilitators or obstacles to collaboration efforts. Three categories; interests, resources and trust were identified as factors affecting collaboration efforts and thereby health communication for health promotion purposes.

Collaboration between organisations/professions depended on shared common interest in terms of either the same target group and/or similar organisational demands. PHC organization in this study was made up of specialized units, CHS, GP and DN consultation units. Each unit was allocated resources to work with specific or prioritised target groups. Hälsotorg personnel expressed a feeling of marginalisation, which they attributed to the fact that they targeted ‘healthy clients’ as opposed to sick/ill patients targeted by the other PHC units. During the field study it was noted that Hälsotorg personnel unsuccessfully tried to enlist the help of DNs with special competencies such as diabetes or incontinence, to give a public lecture at Hälsotorg. Promoting health was conceived as ‘non-urgent’ and was not prioritised, which explained the difficulty of establishing collaboration with Hälsotorg.
Organisational demands of “need-based” prioritization resulted in prioritisation of curative and risk-disease prevention in most PHC units. External organisational demands such as national directives and policies were also cited by health personnel as factors affecting interests and, thereby collaboration. An example was prioritisation of child and geriatric health in the policy years 2008-2010, leading to the PHC unit collaborating around these two target groups. In an effort to bridge the gap between Hälsotorg and the other PHC units, all the hypertension controls were relocated to Hälsotorg. This was a decision that was not popular among Hälsotorg personnel as it was seen as ‘medicalisation, of their services, as expressed in the following quote:

"...it undermines the whole purpose of my work...I don’t mind them coming but I have to document in their medical journal...I have to talk about their medical history, diseases...that becomes the focus!...Hälsotorg becomes the extended arm of their medical clinic...." (FG5).

Availability of resources was identified as pre-requisite for communicating health to the public. However, resources were scarce in PHC according to the health personnel. Thus lack of, or poor collaboration between different professions and organisations was attributed by the DNs to the scarce resources. Two types of resources were identified: Time and economy. Lack of time was attributed to a high workload and little time allocated to each patient, often ageing, and multi-morbid patients. However, some DNs suggested that unwillingness to think ‘outside the box’ and negative attitudes towards collaboration more than workload contributed to poor collaboration. Lack of economic resources was also cited by health personnel as a hindrance towards engaging in activities outside the prioritised areas. Health personnel pointed out that they operated on a tight budget, with constant cutbacks which forced them to focus on ‘their’ areas of responsibility.
Trust was identified as an important collaboration factor in and for health communication, between health personnel and visitors, and between health personnel in different PHC units. Hälsotorg visitors related that they came to Hälsotorg and took part in the activities because they had confidence in the professionals who worked there. The information they received was perceived as trustworthy, correct and evidence based as it came from a health care authority. DNs in other PHC units also expressed that it was easier to collaborate with Hälsotorg when it was managed by ‘one of them’, meaning a DN

“...We try to refer our patients to Hälsotorg…they are not used to it but we explain that it is one of our own that will help them and the only difference is there are no medical records. Once they hear it is a District Nurse, they go willingly….” (DN 8)

The planned VHT was also seen as a converging arena for collaboration where the different units could work together as it would not be located within any given PHC unit but rather within a virtual space where each unit would be able to profile their services and communicate health to their respective target groups.

Discussion

Results discussion

The aim of this study was to gain a better understanding of health communication for health promotion and factors affecting such communication in a PHC setting, as a first phase for developing an interactive health channel the ‘Virtual Hälsotorg’. According to Kreps [27], understanding the context is central to planning of health communication interventions, especially within the health care services, where a
myriad of individual, organizational and societal factors influence health related decisions and practice. Results show that the PHC in this study faces challenges of catering for a heterogenic clientele of different ages and health status, as well as serving both individuals and the community as a group. Furthermore, the PHC units were assigned different target groups and adopted different strategies for health communication but were at the same time expected to act as one single organization and work towards the same goal of preventing diseases and promoting health for individuals and the community, according to the policy documents. Our analyses show that this goal is rarely achieved, thus highlighting a discrepancy between what is stated in policy documents and expressed intentions by health personnel, and the health communication in practice at the PHC.

Another important finding was that although health promotion activities were common phenomena within the PHC, health promotion as an approach was given low priority, which confirms the findings of earlier studies [1-3, 21] that show that health promotion in PHC is poorly prioritized in a time when it is needed the most to meet the challenge of increased lifestyle-related ill health. Individual and organizational factors shaping the health communication in practice in the PHC studied were identified and are discussed in below

According to Irvine [28], health professionals in primary care settings, including nurses, lack adequate knowledge to integrate health promotion in their daily work in an effective and deliberate manner. Lack of adequate knowledge was also identified in the PHC in this study, where health promotion was understood as preventing
diseases or risk of diseases by most of the informants, despite the policy documents clearly stating that PHC and Hälsotorg should work with primary, secondary and tertiary disease prevention. Similarly, health promotion was understood as *activities to promote health* as opposed to *an approach to health promotion*. Thus there is a need for health personnel to build their capacity for working with a 'health promotion approach', even when working with secondary and tertiary prevention. This should be prioritized in developing interactive ICT supported health communication channels. Knowledge of health promotion approach is crucial for nursing professionals in their daily work in order to deal with chronic illness, disease prevention, and to address the determinants of health. This is also knowledge that is vital for the challenging task of combining both individual and population perspectives to health promotion [29]. On the other hand, health personnel in PHC possess competencies of working with a range of strategies, tools and types of health communication; competencies that could contribute to better ICT based health communication channels such as the planned VHT. One such area is the experience and skill of working with individual counseling which health personnel (particularly DNs in this study possess. This knowledge and experience can be used to inform the design of interactive services of the channel such as 'tailoring' of health information to better suit the intended end users. Such a design strategy is believed to be one of the most effective strategies for health promotion and lifestyle-changing interventions [33-35].

This study also shows that other organizational factors such as lack of resources and prioritization were just as important factors in contributing to the poor adaptation of a health promotion approach in PHC. Similar results were displayed in Johansson et al study [22], where health personnel had both the will and skills but lacked the chance
to show them due to perceived lack of opportunity or of support from the organization to display their skills. Organisational structures play an important role in creating a supportive environment for health promotion. Health promotion in the PHC studied was regarded as a non-urgent and as such was not prioritized, which confirms findings from earlier studies showing that health promotion in PHC is sidetracked from the rest of PHC activities [1, 3, 31-33]. Health promotion was mainly allocated to CHS and Hälsotorg, while other units were commissioned with curative and disease prevention tasks. This demarcation affected content of, and approaches to health communication, as well as collaboration between the different PHC units and other partners.

Allocating Hälsotorg within the PHC context resulted in a symbiosis whereby Hälsotorg contributed to more health promotion services in PHC but the PHC narrow and “reactive” preventive approach were forced upon Hälsotorg despite protests from Hälsotorg personnel. Given that VHT channel’s main aim is to promote health by providing accessible empowering health communication to individuals and creating a supportive environment for the whole community. Development of an ICT supported health channel like VHT, could benefit from this existing ‘mutual relationship’ between Hälsotorg and the rest of PHC, and further strengthen the PHC’s health promotion ambitions as stated in the policy documents.

Several health personnel in this study blamed the poor adaptation of health promotion approach to the lack of support from the PHC. This seems to be contradictory, as observations and meetings with the PHC leadership revealed a will among PHC leaders to create infrastructures to improve health communication for the purpose of promoting health. These different perceptions could be interpreted as the result of a lack of dialogue between PHC leadership and DNs. Thus, it would seem that there
was a need of a dialogue in the development process of VHT to involve all the actors from PHC managers to nurses in order to create trust and ensure sustainability and ownership [34,35]. According to previous studies [15, 36-37], trust can be a defining factor for health information seekers' use or rejection of the content of health information on the Internet. Trust in content and trust in professions were also cited as two most important factors for choosing health communication resources by community members in this study. Pilemalm et al. [35] suggest that involving end users in the design process increases trust among them and thereby enhances the probability of their using the system. Involving different users, health personnel and community members- both patients and non-patients, in development of interactive ICT supported health communication channels would thus seem to be a good design strategy.

Communicating health is given as an important function of PHC and Hälsotorg. However, results show that there was a lack of synthesis in approaches, strategies and tools to achieve the common goal of promoting health and preventing diseases at individual and community levels. Furthermore, empowerment was stated as the ultimate goal of health communication initiatives in PHC, but results show that behavior change was the most common approach. This is in line with earlier studies that showed that health communication for the purpose of promoting health within health care services lacks a broad socio-ecological health promotion approach [11] which is necessary to tackle the determinants of health and the growing chronic diseases at both individual and population levels [6, 11, 38]. Thus there is a need to involve all the health personnel in a dialogue prior to starting the development process of an ICT supported health communication channel such as VTH in order to identify a
common health promoting approach and strategies. As studies show, involving health personnel throughout the design process may contribute to personnel’s capacity building as well as reaching a consensus on a common health promotion approach [39,40].

The analysis revealed that patients and visitors to PHC were conducting their own Internet searches and expecting the personnel to answer their additional queries about information they had found in this way. Thus, to meet future health communication challenges, health personnel need to improve their capacity for using Internet-based information [41,42]. Results also revealed a lack of health information in other languages besides Swedish. Immigrants who do not understand Swedish are an increasing group who generally experience poorer health than native Swedes [43]. An accessible Internet-based health communication could be a strong motivation for immigrants to seek health information frequently and manage their own health. One of the major challenges to introducing a new technology is the need to increase the capacity of health personnel to use ICT resources effectively while being attentive to the potential for communication inequalities and digital divide [44]. Equity and inclusion of the needs of non-Swedish speakers will need to be considered by enabling participation of this group in the design process and in continuing design in the use of health promoting services.

Although this study provides valuable insights to factors that need to be taken into consideration prior to development of ICT supported health channel, there is a need for further research to better understand the needs for health communication among non-Swedish speakers as well as to further explore the relationship between the
different organisational and social factors affecting health communication in a larger scale.

**Methods discussion**

The combination of Case methodology and PAR facilitated a holistic view of health communication as practiced at Hälsotorg and PHC and provided possibilities to understand organisational and individual factors as well as the relationships between these factors. Use of triangulation of methods and involving other researchers and informants in the data analysis process provided a rich description of the case and context. This provides readers with information to make own their judgments on the study’s applicability in similar contexts, thereby increasing the study’s transferability according to Guba and Lincoln [45].

Prolonged participatory observation of three months increases the study’s credibility [45] and enabled the researcher to study not only what was present but also what was ‘missing’ [24,25] as in the case of lack of communication between Hälsotorg and other PHC units. As well as the absence of pharmacy personnel at Hälsotorg, despite their existence as partners on paper, this was important as the study seeks to identify future needs and partners for developing an ICT supported health communication channel. Participatory observations also gave a detailed documentation of the methodology and transparency of decisions, which increases the dependability of this study [45].

By familiarizing with the target groups, the researcher also gained ‘access’ to the field as well as an opportunity to recruit participants for the continued research and
development project (the VHT). According to Smith et al. [27], the success of a PAR research project, like the VHT, depends upon the establishment of an environment for trust between the researcher and the subjects of the study. Furthermore, this phase resonated well with the ‘listen’ phase of the STAR model [26] which entails interacting with the target groups, familiarizing with the context, identifying how target groups interact with technology and carrying out a needs assessment.

Two main limitations of the study should be mentioned. First, the study is a pilot study and is based on one Hälsotorg and one PHC and as such, is based on a small number of informants. This may have had an impact on the results, as the experiences of the other Hälsotorg have not been explored fully. Confining the field study to only one Hälsotorg may have narrowed the results as a previous study [18] showed that Hälsotorg offer different services and some had existed longer than others. However, expanding the case to include workers from the other Hälsotorg, was an effort made in order to compensate for the above mentioned limitations. Secondly, exclusion of physicians and other health professionals in PHC, like dieticians and physiotherapists, was another shortcoming. Including physicians was considered, but was not feasible at the time as the majority of the physicians working at the PHC at the time of the study, were hired on a temporary assignment basis.

**Conclusions**

This study identified challenges facing the development of health communication for health promotion in PHC and confirms that a detailed analysis of context prior to an intervention is important to avoid unpleasant surprises well into the project. Furthermore, this study revealed that a multi-method approach unearths more details
that are difficult to identify using a single method, for instance, the discrepancy between what is stated and what is practiced.

The most significant challenge to developing an ICT supported health communication channel for health promotion identified in this study is profiling a health promotion approach in PHC. To achieve VHT’s health promotion intentions, the channel will have to be based on health promotion values and principles; focused more on the population and not only on people at risk, directed at health determinants, combining different strategies, aiming at effective participation of all stakeholders on equal terms, and on professionals taking an enabling role instead of an expert role when communicating with patients/PHC visitors, and, finally taking equity issues into consideration. By addressing these factors and aspects in the design and development of e-health services, health communication via an ICT supported channel could be health communication for promoting health, i.e. “health promoting communication”.

The existence of a physical Hälsotorg, personnel’s skills in and experiences of health communication and willingness of the PHC managers are factors that provide opportunities for the establishment of ICT supported health promoting communication in PHC in this case study.

**Competing interests**

The authors declare no competing interests.

**Authors' contributions**

AJM, EO and BH contributed to the conceptualization and design of the study. AJM undertook data collection, analysis, and drafting of the manuscript. AJM, EO, SE and
BH contributed to interpretation of the results and critical revision of the manuscript.

All authors read and approved the final manuscript.

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References


Tables

**Table 1 - Summary of data sources and methods used for data collection**

<table>
<thead>
<tr>
<th>Data sources</th>
<th>Materials and Techniques used</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Field study</strong></td>
<td>Participatory observations, field notes and impromtu interviews under a period of 3 months; 2 days a week.</td>
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</tbody>
</table>
| **Focus groups** | Total 22 persons in 5 groups of 4-9 persons/group under 1-1 ½ hrs.  
**Group 1 and 2:** District Nurses (DN) from different units in PHC  
**Group 3:** Hälsotorg personnel from the other three Hälsotorgs in the region, PHC managers, regional public health strategist, managers for; the Pharmacy in, psychiatric and dental clinics  
**Group 4:** Immigrants in at a Swedish language instructions class  
**Group 5:** Hälsotorg Personnel in the site of the case study |
| **Documents** | National Public Health Policy 2007/08:110  
1 Hälsotorg evaluation report 2008  
3 Hälsotorg network Meeting protocols 2009  
4 Monthly reports covering the period of field study from the four Hälsotorgs in the region 2009  
Pamphlets, infomercial on Hälsotorg activities and general information to the public on healthy eating, physical activities, seasonal health problem like winter influenza |
<table>
<thead>
<tr>
<th>Subcategories</th>
<th>Categories</th>
<th>Themes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Empowerment Behavior change</td>
<td>Strategies for communicating health</td>
<td></td>
</tr>
<tr>
<td>Interpersonal Group ICT mediated</td>
<td>Types of health communication</td>
<td>Communicating Health</td>
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<tr>
<td>Channels Methods Competencies</td>
<td>Tools for health communication</td>
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<tr>
<td>Physical Organization</td>
<td>Strategic Positioning</td>
<td>Environment for health communication</td>
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<tr>
<td>Interests Resources Trust</td>
<td>Collaboration</td>
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