Power Gaps Among Stakeholders in Israel's Primary Care and the Role of Primary Care Physicians' Relative Power in Their Intention to Use Video-Consultations with Patients

Irit Chudner, MA,¹ Anat Drach-Zahavy, PhD,²
Hadass Goldblatt, PhD,² Margalit Goldfracht, MD,^{1,*}
and Khaled Karkabi, MD, PhD^{1,3}

¹The Ruth and Bruce Rappaport Faculty of Medicine,
Technion-Israel Institute of Technology, Haifa, Israel.

²Department of Nursing, Faculty of Social Welfare and Health
Sciences, University of Haifa, Haifa, Israel.

³Department of Family Medicine, Clalit Health Services, Haifa,
Israel.

*Deceased.

Abstract

Introduction: Although some correlates of primary care physicians (PCPs) telemedicine adoption have been studied, little is known about whether the intention to use video-consultations (VCs) relates to how PCPs view their power, relative to other stakeholder groups in primary care. The aim of this study was (1) to describe PCPs', patients', and policy makers' (PMs) views of their power and (2) to explore how PCPs' views of power are associated with their intention to use VC.

Methods: A convergent parallel mixed-methods design was used. Interviews were conducted with five focus groups that comprised 42 patients; five focus groups with 52 PCPs; and 24 individual interviews with PMs. A total of 508 patients, 311 PCPs, and 141 PMs completed the questionnaire, assessing intention to use VC and stakeholders' relative power. The qualitative data were analyzed using the thematic method; survey data were analyzed using quantitative methods.

Results: All stakeholder groups rated PCPs' power as significantly lower, relative to that of patients and managers. PCPs' intention to use telemedicine was found to be significantly related to perceived power gaps between them and patients ($r = -0.24$, $p < 0.001$) and between them and managers ($r = -0.45$, $p < 0.001$). Themes revealed in the analysis describing how PCPs' low power influences their intention to use VC were as follows: PCPs' low-impact telemedicine-related decisions, increased work overload, "big brother" control, and Health Maintenance Organization demands for telemedicine mandatory usage.

Conclusions: To successfully adopt VC, efforts should be made to increase PCPs' relative power, by strengthening their involvement in decision-making procedures and by increasing PCPs' control over their work environment.

Keywords: PCPs' relative power, telemedicine, primary care stakeholders, intention to use telemedicine, video-consultations

Introduction

Video-consultation (VC) is a telemedicine technology, provided by asynchronous (store-and-forward) or synchronous (real-time) digital interaction that uses both image and voice, to conduct medical consultation between the patient and caregiver.^{1,2} VC integration in routine primary health care has the potential to increase clinics' accessibility,³⁻⁵ improve clinical outcomes,⁶⁻⁹ decrease hospitalizations and emergency visits,¹⁰⁻¹² increase satisfaction with the provided services,¹³ improve patient waiting time and experience,¹⁴ and help reduce expenses and save time.¹⁵⁻¹⁷

Despite evidence in the literature regarding these benefits, VC adoption and usage rates have remained below expectations and the actual use of VC as a routine health service is poor.¹⁸⁻²⁰ Physicians' and in this case, primary care physicians' (PCPs) willingness to use telemedicine technologies is one of the main factors influencing implementation success. As physicians' willingness appears to be relatively low, it becomes a barrier to the implementation of routine VC use.²¹⁻²³ A recently published approach to telemedicine integration included 18 critical success factors.²⁴ In all of these factors, and especially during the first stages when readiness and leadership need to be created and the needs of key stakeholders must be identified, PCP attitudes and motivation to use telemedicine play a significant role. During these stages, PCPs who are usually still nonusers of the technology tend to be passive and lack proactive involvement.²⁵⁻²⁷ In addition, their perceptions about the new technology usually move from neutrality or nonresponsiveness to resistance to the use of telemedicine in everyday practice.^{24,28}

The following aspects were raised in the literature as having importance to PCPs in regard to VC implementation:

identifying and using VC with appropriate patients; strategic planning; and integration of VC into work schedules, preventing possible job overload, funding, and other organizational issues.^{28–31} These findings encouraged us to look at PCPs' ability to influence these organizational issues, their power to set an agenda in relation to these subjects, to promote their agenda in the organization so that their preferences would be reflected in VC implementation plans. Therefore, PCPs' power relatively to other VC implementation stakeholders may be a factor in their intentions to adopt VC and we find this subject worthy of further exploration.

KEY STAKEHOLDERS IN CONTEXT OF TELEMEDICINE IN PRIMARY CARE AND THEIR POWER

Telemedicine in the public health sector is adopted in a complex organizational structure where various stakeholders' networks may influence the implementation. Hence, stakeholders' theory^{25,32–35} can provide a useful lens to investigate VC implementation phenomena. In the current research context, when VC is implemented in primary care for PCP-patient consultations, stakeholders can be defined as "individuals and groups who can affect or be affected by VC implementation in primary care."^{32,35} Using the Interpretive Stakeholder Analysis Methodology,²⁵ we defined three key groups of stakeholders involved in this VC implementation—patients, PCPs, and policy makers (PMs). Each one of these groups has different needs, interests, and preferences; accordingly, each group wants to reflect all of its needs in the VC implementation processes through the power it has. Stakeholders' power was defined by several theoreticians as "the probability that an actor in a social relationship will be in a position to carry out his own will despite resistance, regardless of the basis on which the probability rests."^{36–40}

The perceived power of one stakeholder group with regard to other stakeholder groups can be related to participation in organizational projects.^{35,40–42} For example, the stakeholder group that perceives its power as low, relative to other stakeholder groups within the system, may resist the implementation regardless of the nature of the technology itself, because it feels powerless to present and promote its needs and preferences in the implementation negotiations with other stakeholders.

To further examine this issue in the primary care system in Israel, we asked the following research questions: (1) What is the power of PCPs, compared with that of other key stakeholder groups—patients and PMs, and (2) is the relative power of PCPs related to their intention to use telemedicine?

The study aims to examine the research questions in the context of primary care in Israel. The Israeli health system is

based on the national health law in which all citizens are entitled to receive health care services delivered by four Health Maintenance Organizations (HMOs) operating throughout the country. Primary care provides a strong infrastructure for the entire health system. More than 90% of patients have a personal family physician, 64% said they preferred their PCP to be their first health care contact person, and 49% reported turning to their PCP for every aspect of health care.^{43–45} As in other countries, in Israel, VC implementation is found in various strategic national and organizational programs. A sustainable digital infrastructure makes Israel well-prepared for VC adoption⁴⁶: most patients have internet access and interact with PCPs via e-mail and HMO applications for prescriptions, referrals, and even medical issues. All of Israel's health care interactions are supported by a comprehensive electronic medical records system. Still, all study participants were nonusers of VC, as VCs are not yet being implemented for usage on a regular basis in any of the Israeli HMOs.

Methods

Using a mixed-methods approach,⁴⁷ we compared and integrated the quantitative data with the PCPs and other stakeholders' perspectives from the qualitative data, thus expanding the understanding of the topic under study. We followed recent guidelines for mixed-methods studies^{47–49} for designing and conducting, and The Good Reporting of Mixed Methods Studies template, which identifies the aspects of appropriate transparent reporting,⁵⁰ for reporting the study. The research team was multidisciplinary, including two senior PCPs and PMs (M.G., K.K.), as well as three behavioral science researchers (H.G., A.D.Z., I.C.). The team was diverse in terms of the methodological expertise of qualitative and quantitative methods, to adhere to the standards of each component.⁵⁰

STUDY DESIGN

A convergent parallel design was used: data were collected through qualitative and quantitative methods concurrently and independently during the same time frame, in which separate qualitative and quantitative analyses were conducted, and data sets were merged in the discussion and interpretation stages.⁵⁰ Equal emphasis was given to qualitative and quantitative strands. This approach was chosen to allow more comprehensive understanding and to achieve triangulation and greater validity on stakeholders' power balances and its role in PCPs' intention to use VC. *Figure 1* presents the study design. Data integration was done at the interpretation and reporting level.⁵¹

Fig. 1. Convergent parallel study design among three stakeholder groups. Based on Creswell and Plano Clark's diagram.⁴⁷ Pts, patients; PMs, policy makers; PCPs, primary care physicians.

DATA COLLECTIONS, SAMPLES, AND PROCEDURES

Qualitative data were collected through five focus groups that comprised 52 PCPs, five focus groups with a total of 42 patients, and 24 individual semistructured interviews with PMs. Convenience sampling was used for patients and PCPs, and purposeful sampling was used for PMs. *Table 1* displays participants' characteristics. Patients' focus groups were

conducted by a research institute, specializing in data collection among patients, that contacted patients by mail and invited them to participate in interviews. PCPs were approached face-to-face and recruited to the focus groups during their continuing medical education (CME) trainings. The PM group included national-level executive managers responsible for decision-making regarding primary care in Israel. The PMs were contacted directly, or via their secretaries, and were asked to participate in interviews. Experienced mod-

erators conducted the interviews in Hebrew, which were audio-recorded and later transcribed verbatim. The quantitative data were collected through a survey, completed by 508 patients, 314 PCPs, and 141 PMs. A sample of patients, ages >20 years, were contacted via e-mail with a link to the web-based questionnaire. Paper-based questionnaires were used with PCPs and PMs. PCPs were approached

during their CME activities and PMs were recruited via a personal approach or at periodic executive managers' meetings in their HMOs. *Table 1* presents qualitative stage participants' characteristics and *Table 2* presents quantitative stage participants' characteristics.

RESEARCH TOOLS

The qualitative phase interview guides included six to seven open questions about the integration of telemedicine, in general, and VC, in particular; power dynamics influencing primary care; required resources; drivers and barriers to the adoption of VC technologies; and the respondents'

Table 1. Stakeholder's Characteristics in the Qualitative Component

CHARACTERISTIC	N (%)		
	PATIENTS, N=42	PCPs=52	PMs=24
Gender, female	28 (67)	30 (57)	10 (42)
Mean age	38.8	47.8	52.5
Level of education achieved	13.6	19.5	22.8
Profession, MD	0	52 (100)	22 (91)
HMO affiliation	C (45), Ma (38), Me (2), L (1)	C (69), Ma (23), Me (1), L (1), MTO (6)	C (40), Ma (20), Me (10), L (10), MH (17), PU (3)
Language ^a	Hebrew (100), English (68), Arabic (10), French (5), Russian (3), Spanish (3)		
Living ^a	With other people (92), alone (2)		

^aLanguage and living status pertain to patients only.

C, Clalit; HMO, Health Maintenance Organization; L, Leumit; Ma, Maccabi; Me, Meuhedet; MH, Ministry of Health; MTO, more than one HMO; PCPs, primary care physicians; PMs, policy makers; PU, professional union.

Table 2. Stakeholder's Characteristics in the Quantitative Component

CHARACTERISTIC	PATIENTS = 508	PCPs = 311	PMs = 141
Gender: female	281 (55%)	170 (55%)	54 (39%)
Mean age	40.4	55.1	50.6
Number of years of education	14.5	19.1	22.3
Profession, MD	—	311 (100%)	142 (86%)
Specialization	—		—
General		147 (48%)	
Family		105 (36%)	
Internal and others		50 (16%)	
HMO affiliation			
Clalit	255 (50%)	158 (52%)	48 (34%)
Maccabi	156 (30%)	79 (26%)	41 (29%)
Meuhedet	66 (13%)	35 (12%)	19 (14%)
Leumit	31 (6%)	32 (10%)	17 (12%)
Other		15 (4%)	16 (11%)
PCP's employment type	—		—
Employed by HMO		158 (52%)	
Self-employed		75 (23%)	
Both self-employed and by HMO		40 (13%)	
Family income status		—	—
Less than 15,000 NIS	220 (43%)		
Average 15,000 NIS	177 (35%)		
More than 15,000 NIS	111 (22%)		
Lives with a chronic disease	135 (27%)	—	—
Mean no. of patients allocated	—	1,373	—
Total interactions w/patients per workday	—	80.1	—
FTF interactions		39.5	
Via HMO app or ALTOR or other		18.3	
E-mails		11.5	
Phone calls		9.1	
Interactions w/other PCPs per workday	—	0.5	—
Interactions w/other specialists per workday	—	0.7	—
Country of medical school attended	—		
Eastern Europe, former Soviet Union		121 (39%)	
Israel		112 (36%)	
Western Europe, North America		44 (14%)	
Asia, Africa, Australia, South America		34 (11%)	
Social media, at least one profile	440 (87%)	111 (39%)	77 (61%)

continued →

sociodemographic information. The interview's semistructured nature enabled an in-depth investigation of subjects according to the development of the particular interview conversation, and the unique perspective of each participant.

The quantitative survey included a relative power rating tool, intention to use telemedicine items, relevant sociodemographics for each stakeholder group, and more items that are beyond the scope of this study. The relative power tool was adopted from a previous study³⁵ and explored relative power by asking participants to rate their power relative to other stakeholder groups in primary care. The intention to use VC variable was used in the PCP survey and included three items, which were also adopted from relevant prior research.⁵² Although validated by prior research, the variable was examined to ensure content validity and reliability within the targeted context for PCPs during pilot, because validity may not be persistent across different technology-user groups.⁵³ The intention to use variable had Cronbach's α value of 0.95, indicating a good reliability level.⁵⁴ Wording choices were solicited, and minor modifications were made in the survey following pilot. The full version of the survey can be found in the *Appendix*.

DATA ANALYSIS

Qualitative data analysis was performed inductively,⁵⁵ using a thematic analysis method. The researchers read the interview transcripts repeatedly, listened to the recordings, documented their first impressions, and prepared an

Table 2. Stakeholder's Characteristics in the Quantitative Component *continued*

CHARACTERISTIC	PATIENTS = 508	PCPs = 311	PMs = 141
Experience with Skype/other video app			
Never used	79 (16%)	130 (44%)	18 (14%)
Used once or twice	218 (43%)	99 (33%)	42 (32%)
Regularly for overseas calls	109 (21%)	43 (14%)	45 (34%)
Regularly for local calls	102 (20%)	26 (1%)	27 (20%)

ALTOR, Clalit Health Maintenance Organization name for patient-physician correspondence system; FTF, face to face; HMO, Health Maintenance Organization; NIS, New Israeli Shekel; PCP, primary care physician.

initial analysis, noting keywords and phrases that potentially represented relevant themes. Themes that emerged from the initial analysis were examined for each participant's narrative, seeking connections, similarities, and differences, deleting redundant themes and categorizing themes and subthemes. Interactive coding trees were built separately for the three stakeholder groups. The quantitative data were analyzed using SPSS software: three repeated-measures tests (one for each stakeholder group) with a comparison of the main effects, using Bonferroni adjustment, were performed to identify holistic power gaps. Stepwise regression was used to predict PCPs' intention to use telemedicine according to their perceived power and their sociodemographic characteristics.

Results

RESEARCH QUESTION 1: HOW IS PCPs' POWER RATED, RELATIVELY TO THAT OF OTHER KEY STAKEHOLDER GROUPS—PATIENTS AND PMs?

The qualitative research. Four main themes and seven subthemes emerged from the qualitative data gathered in relation to the PCPs: (1) PCPs' power relatively to managers; (2) PCPs' power relatively to the patients; (3) PCP status; and (4) PCPs' ability to change the system. PCPs in all focus groups stated that, compared with the managers in HMOs, they are "powerless and lack control over basic elements" related to their "immediate working environment," such as schedules and patients' workflow, autonomy on tasks, and time allocation decisions made during the workday. Data revealed that "the manager's pressure to perform many bureaucratic duties" contributed to PCPs' low sense of power. PCPs also mentioned shifts in the power balance, relative to the patients, because the "patients have undergone 'some kind of change; today they have a completely different, stronger position.'" Data from patients' focus groups showed that patients also recognize the powerless position of their PCPs, relative to HMO managers: "The doctors have studied for many years, they

understand, they have professional considerations...the people who tell them what to do are the ones who have been promoted to managerial positions—and they are not doctors ..." In the personal interviews, few PMs, mainly those who were originally family practitioners, mentioned PCPs' powerless position. A theme that was unique to PM data was "the need for PCPs to develop strong leadership, take a more proactive attitude, define

their own needs, and push to be involved in decision-making processes" as ways to increase their own power and "have a say" within the system. *Table 3* presents the themes, subthemes, and citations of all stakeholders in relation to PCPs' relative power.

The quantitative research. *Table 4* presents the scores of patients, PCPs, and PMs rating their own and other stakeholder groups' relative power. Not only PCPs but also patients and PMs, rated PCPs' power as the lowest of all stakeholder groups. PCPs viewed managers and PMs, followed by the patients, as having more power than PCPs. Patients viewed PMs' power relative to that of PCPs as the highest, followed by their own power. PMs viewed patients' power relative to PCPs as the highest, followed by their own power. Self-employed PCPs rated their power ($M=3.08$, standard deviation [SD]=1.11) higher than that of PCPs who are employed by an HMO ($M=2.50$, $SD=1.07$), $t(255)=4.15$, $p<0.001$. A negative correlation was found between power rating and age, meaning that younger PCPs rated their power higher ($r=0.16$, $p<0.01$).

COMPARISON AND INTEGRATION

Findings from both PCPs' and patients' data sets present a similar picture, indicating PCPs' low power relative to the two other groups of key stakeholders examined in the study. In the PMs' quantitative data set, they rated PCPs as the lowest-strength group, which is consistent with PCPs' and patients' ratings. In contrast, in the in-depth interviews, PMs somewhat avoided relating to PCPs' power within the health care system, but chose to relate to PCPs' status, PCPs' involvement in decision-making, and the need for PCPs' leadership development.

RESEARCH QUESTION 2: IS THE RELATIVE POWER OF PCPS RELATED TO THEIR INTENTION TO USE VC?

The qualitative research. Four main themes emerged from the PCPs' qualitative data describing how PCPs' low sense of

Table 3. Stakeholders' Quotations Contributing to Themes on Role of Primary Care Physicians' Relative Power				
		STAKEHOLDERS' QUOTATIONS		
NO.	THEME	PCPs	PATIENTS	PMs
1	The power relatively to HMO managers	Control over working schedules	"The very fact that all clinics are run by clerks and not by medical personnel is part of this thinking that the world is economic rather than medical and managers have more power than doctors." "The doctors have studied for many years, they understand, they have professional considerations and someone who tells them what to do is someone who has been promoted to be a manager and he is not a doctor at all." "Patients understand that there is a directive HMOs order to allocate less than 10 minutes for an average visit to a patient, and the doctor can not, even if he wants, spend more time (with patients)."	"There are constraints of time, of resources and the HMO or other institution where you as a doctor have = somewhere to maneuver but freedom of action is smaller and unlikely." "Family doctors are at the bottom of the food chain of HMO professional groups, even nurses have more freedom of action during the day." "Family doctors are not the state's policemen. When someone says, doctor, I did not feel well and I was at home for two days, the doctor gives sick leaves. The very fact that doctor is supposed to prepare a sick leave in only a minute or half a minute is absolute nonsense!" Doctor have no time during their work day and they are forced to give sick leaves without seeing the patient, so those bureaucracy missions make them a so-called rubber stamp." "Family doctors do the most important part of the work, more lives are saved in Israel because the work of family doctors and the system doesn't count them."
2		Autonomy on time allocation decisions		
3		Administrative issues		
				continued →

Table 3. Stakeholders' Quotations Contributing to Themes on Role of Primary Care Physicians' Relative Power <i>continued</i>				
STAKEHOLDERS' QUOTATIONS				
NO.	THEME	PCPs	PATIENTS	PMs
4		Quality measurement "Managers measuring us for everything, they want quality measurements all the time." "Please stop this control—I need freedom to make my own decisions about what is 'good medicine means' in my everyday work." "We say: the time has come to really focus on quality rather than quantity in measurement, and managers do not hear us." "With a very directive measurement from above, a clinic manager today is not really a manager who implements metrics."		
5		Involvement in decision-making "They (managers) do not ask us what we think, they impose on us from outside the decisions of all sorts of people who are not within the system (not physicians)." "They (managers), there, sitting in their air-conditioned offices and deciding everything for us in the field."		
6		Autonomy on referrals and investigations	"Doctors should have the freedom to exercise their professional judgment about tests and referrals." We know that HMO guides doctors to "skimp" and save on approval of medical examinations, treatments and medications that are considered expensive despite of doctor's professional judgment. At this point we feel betrayed by the HMOs and we feel that the doctor usually stands by our sides but "with their hands tied." "There are financial costs for tests that really cost a lot of money and to give them up the doctor will not tell you sometimes that they exist, because he has managers who demand it from him and you really need to demand it and ask"	

continued →

Table 3. Stakeholders' Quotations Contributing to Themes on Role of Primary Care Physicians' Relative Power *continued*

NO.	THEME	STAKEHOLDERS' QUOTATIONS		
		PCPs	PATIENTS	PMs
7	The power relative to the patients	Patients' strong position	"The patients have undergone some kind of change, today they are at totally different, stronger position." "The patient today comes to you from a different position at all than it used to be, the doctor is no longer the exclusive authority as it was in the past." "Once a doctor would sit in front of a patient and he had a lot more strength than he does today. Today the patient knows he is an individual, he is in the center and the treatment revolves around him."	
		Patients' knowledge	"Because of the technology the patients come with more knowledge and knowledge is power." "The problem is that today the patient comes to me and he already knows what he has, he diagnosed himself in advance."	
		Demanding consuming needs	"We have to be 'service-givers', they pay our salaries, they threaten to leave the HMO, they have more power, they have a position." "Our strength is eroding relative to patients, who are becoming demanding customers." "As long as patients come with unrealistic expectations, people will see it as a service that hurts, patients translate it as being servants of the system."	
		HMO's concern not to lose patients	"Today we also pay more attention to the clients, because the management is also 'sitting on our head' that we will not lose the customers, the patients—again this story with the question if they are customers or patients." "HMO afraid that that they (patients) will not leave to another HMO, so we have to accept that 'customer' is always right." "The discourse of our managers is the discourse of patients as 'customers', and they will bring us back to the wrong powerless place, because this is the value of our autonomy as doctors to see them as patients."	

continued →

Table 3. Stakeholders' Quotations Contributing to Themes on Role of Primary Care Physicians' Relative Power *continued*

NO.	THEME	STAKEHOLDERS' QUOTATIONS		
		PCPs	PATIENTS	PMs
8	PCP status	"We do not participate in committees, do not invite us for a very simple reason: our (PCPs') status is not sufficiently high and it is well known." "Our place in terms of image and status is not the right place in the eyes of the system, they say: A family doctor is the core element in the health care system but not treated as one." "The family doctor status is also low in the eyes of the managers as well as in the eyes of the patients and by the way in the eyes of the other specialties (doctors)."		"Status of family medicine is not high." "Many people within the health care system look from top to bottom on family doctors." "As far as few policy makers are concerned, family doctors can be nurse practitioners in the best case or clerks in a bad case."
9	PCPs' ability to change the system	"The Future of Family Medicine is not in our hands, I do not feel that any family doctor can influence the future of family medicine." "I doubt how much we (family medicine instructors) can change all these things because we ourselves do not have a lot of power." "I do not believe anything is going to change." "Why do we not raise our heads? Why do we not make a revolution? Why we are not taking ourselves seriously and sitting in places where we have to sit? Because we do not believe we have the power to change."		
10	PCPs' leadership			"They have to be involved in organizational processes. They have to push themselves. They also have to initiate and suggest things that the organizations and HMOs will adopt or lead or develop, as for today they do very little of it." "But they do not have the tools and power to change to situation. If family doctors will produce practical involvement and leadership. Increase their leadership and not just complain about it (PCPs powerless position)." "Family Physicians have to develop leadership to self-efficacy, to make changes, and it will increase the positioning of their role and their image and power." "I think that if family doctors will lead, initiate new things, and will not drag themselves after things as it happens today, their power will rise."

RATED GROUP	PCPs ^a N= 311	PATIENTS ^b N= 508	PMs ^c N= 142
PCPs	2.81 (1.51)	2.86 (1.26)	2.64 ^c (1.17)
PTs	3.58 (1.04)	3.66 (0.89)	4.13 (4.38)
PMs	4.68 (0.58)	4.52 (0.64)	3.71 (0.81)

^a $F(2, 301)=285.18, p<0.001$. Bonferroni: PCPs-PTs: $p<0.001$; PCPs-PMs: $p<0.001$; PTs-PMs: $P<0.001$.
^b $F(2, 506)=339.98, p<0.001$. Bonferroni: PCPs-PTs: $p<0.001$; PCPs-PMs: $P<0.001$; PTs-PMs: $p<0.001$.
^c $F(2, 135)=39.29, p<0.001$. Bonferroni: PCPs-PTs: $p<0.001$; PCP-PMs: $p<0.001$; PTs-PMs: non significant ($p=0.80$).
PCPs, primary care physicians; PTs, patients; PMs, policy makers.

NO.	QUOTATION	PCP QUOTATIONS
1	We can't impact decisions	"Whatever we say and raise in meeting (strategic meeting about VC implementation), it will not happen, because we do not decide."
		"I am in an organization that has an interest in assimilating technologies that will please the patient, no matter what is important for doctors."
		"We do not impact the decisions today—those who decide—they are not clinical practitioners, from the system, who know the system, who work in a crowded urban clinic ..."
		"They should try to make decisions about digitization in the primary care, or in the hospital, where there are family doctors, nurses, who are really in front of the patients on a daily basis, and this process does not happen today at all."
2	"Big brother"	"With VC telemedicine technologies you're talking and it records you, period, and that goes into the systems for managers, it's the big brother."
		"With this technology (VC) at any given time the manager can know about every doctor exactly everything he does including his pee breaks, really, this, that's how he compares us to everyone/to each other."
		"Because it's computerized, in addition to knowing exactly what my quality measures are and what I am supposed to improve, now it will give them more options to follow after me."
3	Mandatory usage demands	"As long as I determine what will be in Al-Tor (app to communicate with PCP in Clalit Health services) and what will not be in Al-Tor, what will be in the prescriptions and what will not be in the prescriptions, what will be in the record and what will not be—it's ok, but here they use a mandatory term—use this!"
		"For example, if a function of video calls with patients from my computer will be introduced in my HMO, I question my ability to push it back, to reject calls, I doubt it, and I hold myself with confidence and everything, but I can not fend off the technology that is already in my office and the managers are pressing me to use it."
		"They decide to use a new technology and 'let's go—start using it!', but I am the one who is responsible for everything and need to decide whether and when to use the technology."
4	Work overload	"The problem with all these things (telemedicine technologies) is that eventually it puts more responsibility on the doctor, you see? That is, we may remind the doctor that the patient has not taken medication in recent months, but then that is something else that the doctor needs to monitor, and no one cares about our work overload."
		"What happens is that there are all kinds of young guys with a really brilliant head, that every time make us a new patent to communicate with a patient from a distance, what a beauty, that is really wow, what a beauty. It's very charming but it leads to work overload that I need to manage by myself, only me alone to find solutions, no one else in the system."
		"The whole thing about Messenger is that it's very disturbing, let's say you're in the middle of a visit and you lose the connection, you have to answer both the phone and Messenger, and see a patient in front of you, someone in the management thinks about that? No..."

PCP, primary care physician; VC, video-consultation.

Table 6. Stepwise Regression Predicting Intention to Use Telemedicine by Perceived Power and Sociodemographic Background

STEP		β	τ	p	R^2
1	Employment type	0.324	4.780	0.000	0.11
2	Employment type	0.322	4.870	0.000	
	Age	-0.222	-3.363	0.001	0.15
3	Employment type	0.302	4.585	0.000	
	Age	-0.176	-2.578	0.011	
	Graduation country	-0.156	-2.266	0.025	0.18
4	Employment type	0.207	3.143	0.002	
	Age	-0.015	-1.758	0.080	
	Graduation country	-0.132	-2.005	0.046	0.26
	Perceived power	0.315	4.676	0.000	

power influences their intention to use VC: (1) We cannot impact decision-making; (2) “Big brother”; (3) Mandatory usage demands; and (4) Work overload. PCPs’ quotations, supporting these themes, are presented in *Table 5*.

The quantitative analysis. A stepwise regression for the prediction of PCPs’ intention to use VC was conducted (*Table 6*). The following sociodemographic variables were entered in Step 1: PCP age, specialty, graduation country, employment type, number of patients, use of social media, and use of internet shops, Skype, or other video application usage. In Step 2, the perceived PCPs’ power was entered. The model explained the overall 26.0% of the variance in the predicted variable [$F(4, 192) = 16.90, p < 0.001$]. The regression showed perceived power to be the best predictor of the PCPs’ intention to use VC ($\beta = 0.32, p < 0.001$), followed by employment type ($\beta = 0.21, p < 0.01$), with self-employed practitioners having higher intentions to use telemedicine. Graduation country also proved to be a significant predictor ($\beta = -0.13, p < 0.05$), with practitioners who graduated medical school in Israel having a higher intention level to use telemedicine compared with those who graduated in Eastern Europe and the former Soviet Union. In addition, a t test analysis also showed a positive correlation between previous usage of video call applications (such as Skype) and the intention to use VC ($r = 0.18, p < 0.01$).

COMPARISON OF INTEGRATION

The qualitative findings of the second research question are congruent with the quantitative finding, presenting a significant connection between PCPs’ low sense of relative power

and intention to use VC. PCPs’ previous experiences of telemedicine implementation in HMOs, which were characterized by mandatory usage demand, and lack of ability to influence decisions and implementation plans influenced their motivation to use VC. They expressed concerns about additional work overload, and the fact that the VC issue will give HMO-employed PMs and managers yet another convenient tool with which to control them.

Discussion

This study presents a broad picture of the relative power of PCPs, drawing a line between the power felt by PCPs and their intention to use VC. PCPs’ relative power is mapped and validated from several angles and points of view, as expressed by the three critical stakeholders—the PCPs themselves, the patients, and the PMs. The study presents an unequivocal picture of PCPs’ low power relative to the managers and the patients. This picture supports findings in the literature about shifts in primary care balance of power, resulting from reforms, the generally turbulent primary care environment, and the long-term trend of gradual power shifting from the medical profession to the management.^{35,56–64} To the best of our knowledge, the study shows for the first time an empirical link between the relative power of PCPs and their intention to use VC: PCPs’ low perception of their relative power reduces their intention to use VC. Our explanation for this phenomenon is that as a result of PCPs’ relatively low power experiences, they doubt their own ability to impact telemedicine implementation decision-making and express their needs and interests in the negotiations around VC implementation plans.

Apparently, the link between PCPs’ perceptions about their own power and their intention to use telemedicine is not only unique to the VC integration case but also relevant to other types of telemedicine implementations. PCPs’ diurnal work has become more intense, closely monitored, and routinized, while their power continues to diminish.⁵⁵ Thus, telemedicine implementation becomes a focal point in which power gaps are expressed in the different stakeholders.

To successfully adopt VC and, in particular, to ensure that primary care remains a strong sustainable platform for telemedicine implementation, in general, efforts should be made to increase PCPs’ relative power. This can be achieved not only by involving PCPs in the implementation processes but also by building a system in which PCPs lead these processes. This is an important factor, as an effective significant medical leadership seems to be crucial for e-health effectiveness.⁶⁵ PCP leadership can make a significant contribution to implementation success factors,²⁴ both in the stages of more strategic nature, such as mapping the needs of all stakeholders,

and in stages of more operational nature, such as the establishment of good procurement processes, construction of workflows, PCP-patient communication through VC trainings, and more.

The study has several limitations. The first limitation is the fact that the study was conducted within the framework of the Israeli primary care model, including about 50% of PCPs who are HMO employed and the others work in semiprivate clinics on a contract with one of the four HMOs. That could limit the generalizability of the study, although in general, the Israeli health system, based on the national health law, which insures health services for all, resembles health systems in other countries. The second limitation refers to the patient population. Since the survey was conducted via web-panel, elderly patients who do not have a computer did not have an opportunity to respond to the survey; therefore, they are not represented in this study.

Conclusions

We found a negative impact of low PCPs' relative power on their intention to participate in telemedicine implementation. Hence, effective and timely VC implementation requires careful attention to PCP power and ways to increase it.

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Ethical Approval

The study was approved by the Institutional Review Boards (IRB) of the University of Haifa and the Technion. All participants in personal and group interviews signed an informed consent form of participation.

Disclosure Statement

No competing financial interests exist.

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Address correspondence to:

Irit Chudner, MA

The Ruth and Bruce Rappaport Faculty of Medicine

Technion-Israel Institute of Technology

6, Hashahaf St.

Haifa 35013

Israel

E-mail: irit@coactive.co.il

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(Appendix follows →)

Appendix

Note: The interview guides were created in Hebrew and translated to English for the purposes of the article.

Primary Care Physicians' Interview Guide

OPENING FOR FOCUS GROUP

Thank you for agreeing to participate in this focus group, which we are conducting as part of a study on the future of family medicine in Israel. The study is funded by the National Institute for Health Policy Research. The aim of the study is to produce a policy document for the Ministry of Health, in which direction family medicine should develop in the coming years in the digital era we are living. Therefore, your opinion is vital in shaping the practice of family medicine in the coming years. The interview will take about an hour and a half.

Anything that is said in the group will be confidential and will be used only for research purposes. With your consent and as part of the accepted work methods in qualitative research, we will record the group interview, which will be a transcript later.

From this moment on and throughout the study, we undertake to maintain confidentiality and avoid revealing your personal details that may identify and personally link you to what was said during the interview. Your name will not be included in the recording and transcript of the interview. The data will be analyzed according to different subjects and not by interviewees, to protect the confidentiality of the participants in the focus group. Therefore, it will not be possible to identify you from the findings of the study.

In the focus group interview, we will ask you various questions about your experience as a family doctor. There are no correct and incorrect answers. The way you see things is the significant part here.

If we ask questions that you do not want to answer or topics you would prefer not to address, we will respect your wishes.

PCPs' Questions

- How do you see the integration of digital technologies in your daily work (e.g., communicating with patients via e-mail, video calls with patients via Skype instead of visiting, diagnostic applications, and medication reminders on the phone)?
- What are the advantages and/or drawbacks of telemedicine technology?
- How do you see the integration of video-consultations (VCs) in your day-to-day work?

- Imagine you have the option of meeting your patients either via a video call (from your computer or smart-phone) or in the clinic.
- In which consultation will you prefer using VC?
- What is important to you when choosing VC over in clinic consultations?

Primary Care Physician's Personal Details

Number of interviewees _____ Date _____

Personal information gender: (1) man, (2) woman

Age _____ years of education _____

Specialization _____

Sick fund affiliation _____ (1) Clalit, (2) Maccabi, (3) Meuhedet, (4) Leumit

Policy Makers' Individual Interview Guide

OPENING FOR INDIVIDUAL INTERVIEW

Thank you for agreeing to participate in this interview, which we are conducting as part of a study on the future of family medicine in Israel. I would like to interview you about your perceptions, as a policymaker, regarding the future of family medicine in Israel. Your participation in the study may contribute significantly to understanding this issue. The interview will take an hour and a half.

Anything you share in the interview will be confidential and will be used only for research purposes. With your consent, I will record the interview, which will be circulated later.

From this moment on and throughout the study, I undertake to maintain confidentiality and not disclose your details that can identify and personally link you to what was said during the interview. Your name will not be included in the recording and transcript of the interview. The data will be analyzed according to different subjects and not by interviewees, to protect the confidentiality of the participants in the focus group. Therefore, it will not be possible to identify you from the findings of the study.

In the interview I will ask you various questions through which I would like to learn from you about no correct and incorrect answers. The way you see things is the significant part here.

If I ask questions that you do not want to answer or topics you would prefer not to relate to—I will respect you. You can stop participating in an interview at any stage you wish. I will respect your request and have no negative consequences for you.

Policy Makers' Questions Interview Guide

- How do you think digital technology can shape the face of family medicine?
- How do you see the integration of telemedicine in daily work of primary care physicians (PCPs) (e.g., communicating with patients via e-mail, video call with patients via Skype instead of visiting, diagnostic applications, medication reminders on the phone)?
- What are the advantages and/or drawbacks of telemedicine technology? Which factors are important when considering to incorporate telemedicine technologies in primary care (in your organization)?

- Which factors are important to you when considering the option of incorporating VCs?
- When will you prefer PCPs and patients to use VCs in your organization?

Policy Makers' Personal Details

Number of interviewees _____ Date _____

Personal information gender: (1) man, (2) woman

Age _____ years of education _____

Profession _____

Organization _____ (1) Clalit, (2) Maccabi,
(3) Meuhedet, (4) Leumit, (5) MH, (6) other _____

Role/Job _____