BABEŞ-BOLYAI UNIVERSITY

THE FACULTY OF ECONOMICS AND BUSINESS ADMINISTRATION

DEPARTMENT OF MANAGEMENT

THESIS

SUMMARY

ANALYZING ENVIRONMENTAL FACTORS WHICH INFLUENCE THE RESOURCE ALLOCATION MANAGEMENT FOR DIABETES PREVENTION

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Key Words:

Management , Health Management, The Kibbutz health system, Diabetes Mellitus, , Total Quality Management, Customer Relationship Management, Proactive Management, The Chronic Care Model, Patient Centered , Case Study.

Chapter 1: Introduction

The research focuses on the aspects of allocation of health resources and management approaches: clinic personnel, availability of primary health care and availability of specialized health care, accessibility to the clinic, payment for health services, supplementary health insurance, the patient's state of health and client focused management.

The core of this research is a comparison of different management approaches and their effects in two typical Israeli types of communities – Kibbutz (communal-rural settlement) and a city. For the objective of this research two populations of patients suffering from Type 2 Diabetes were chosen.

The research population included 636 participants recruited from a study which continues to follow up on patients with Diabetes Mellitus patients (Type 2 Diabetes) at the ages of 55 – 75. Participants recruited from two Diabetes clinics in the city and 20 Kibbutz clinics in Haifa vicinity, took part in the study.

The goal of a health care system is to address the immediate challenges of improving population health and quality. Shifting trends in the healthcare environment necessitate a parallel shift in how care is organized and delivered in ways that are consistent with meeting the immediate and long-term needs of a society with increased prevalence of chronic disease and changing health needs.

The health system requires a mechanism to deal with different areas of activity such as human resources, managing knowledge and technology, managing budgets efficiently, while fulfilling the many and conflicting demands of many entities of interest such as the clients, the decision makers, the employees, and the suppliers. The health system theory of management aims at providing managers at different levels with tools to achieve all these goals (Lagergren, 1998).

In the early 1990's the Israel National Health Law was passed ensuring health services for every citizen regardless of his/her economic or social status. The legislators explicitly stated that national health insurance must be based on the principles of justice, equality and mutual assistance (Keidar & Horev, 2010; Hinitz, 2010).

The community medical system in Israel and around the world is designed to provide routine medical services to the population, by dealing with current problems in

primary clinics and health care institutes, to engage in diverse health promoting activities such as family planning, rehabilitation and prevention in a community framework.

This system in Israel seeks to bring health care services to the client's immediate surroundings and to minimize the need for hospital admissions.

Community medical systems play a major role in providing primary care services, which prevent long-term complications and lead to better health outcomes.

The research population consisted of participants from the city and from the Kibbutz.

A Kibbutz is a form of cooperative settlement typical of the state of Israel. Kibbutzim are managed according to the belief that each member contributes what he or she can and receives according to need. Among the core values are the principles of shared ownership of property, production, consumption, equality, mutuality, and self-sufficient labor (Sheaffer, 2010).

The literature review points to differences between city participants and Kibbutz ones, with regard to Health Care funding, a higher life expectancy, satisfaction and accessibility to Health care services. The partial budget shouldered by the government has been on a steady decline for several years now, whereas the private funding is on the rise (Chernichovsky, 2007, 2008: Ben Nun and Keidar, 2007, Cohen, 2011). Compared to the city, the health budget of a Kibbutz member was higher by 32% - 36% than that of the general population in Israel (Palgi & Orchan, 2007, 2009).

The research participants were all Type 2 Diabetes patients. Diabetes is a chronic disease, which belongs to a category of chronic metabolic illnesses whose cause is yet unknown, characterized by a high concentration of sugar, specifically glucose in the blood (Triplitt, 2012). Diabetes is a chronic illness whose prevalence in the world and in Israel as well, is constantly on the rise, be it in developed or lesser developed countries. Diabetes constitutes a heavy burden on the Health Care system, on the patients and their families.

The rapid developments in medicine, together with the expansion of medical services have increased the demand for quality control to evaluate the quality and level of service, and the place of quality control of services rendered has become more important.

The perception of quality necessitates a reexamination of the health system in terms of any system that supplies services to clients, just like as business organizations. Organizations that provide health services are searching for ways to provide better quality service while remaining within the framework of existing resources and still reach better results. The prevalent attitude holds that high quality medical care will be more effective in achieving health outcomes, prevent medical complications and unnecessary treatments, which will, in turn, reduce the costs (Shneider and Bowan, 1995).

Managing a health care system needs to create conditions for the system to be safe, effective, patient focused, with timely, and equitable provision of services.

The manager in the health care system should be committed to improving the quality of life of individuals and communities, striving for excellence, and constantly monitoring the system in his charge in terms of accessibility, satisfaction, quality and cost (Gail & Griffith, 2001).

The quality measure is the central value evaluation tool in the medical system, as it unites the interests of all stakeholders of the system.
In order to achieve a high level of performance quality, we may use the TQM Approach.

TQM Approach was examined in light of (a) routine day-to-day work where data are collected; (b) A central program, so the data can be observed and analyzed; (c) Health Care Services' policy strives to improve the service provided to the clients .

The TQM approach helps teams understand and acquire tools for preserving the quality of performance over a long period of time.

Another approach that helps medical staff to keep high quality value through the treatment is CRM approach.

Customer Relationship Management (CRM) – this approach places the client in the center, and as such, it meets the overall needs, though some of the needs pertaining to the same client may seem contradictory. This approach requires a special relationship with the client.

Contemporary Health Care management approaches direct attention to the patient, so that the patient is in the center, and surrounded by all service providers, thus enhancing the possibility of maximum Health Care quality .

The research questions were:

1. How does Kibbutz and City Management Approach influence the occurrence of complications in diabetes patients?

2. How does Kibbutz and City Management Approach influence the "Complication Extent"(CE) of diabetes patients?

Gap in Knowledge

The Gap in Knowledge leading to this research: in the study conducted by Prof. Halon David and Mazal Azencot a comparison between participants living in the city and those living in the Kibbutz, yielded health related differences in favor of the Kibbutz participants. These findings support research conducted by Leviatan et al., which found that these health related differences could be the reason for the higher life expectancy of Kibbutz members. These findings constituted the grounds for the current research.

This study seeks to examine the connection between Management Approach and its affect on the extent of Diabetes complication.

The research objectives :

1. How does Management Approach influence the diabetes complications in City and Kibbutz patients?
2. The differences between management approach in Kibbutz and city clinics with regard to the allocation of resources in the prevention of Diabetes complications, while emphasizing and shedding light on the elements which are unique in both approaches.

Structure of the thesis

The thesis is structured on eight chapters covering the topic of research from a theoretical, methodological and practical point of view. We present below the structure of the thesis.

Chapter 2: deals with the management concept as manifested in the health system context, also discussing an idea that is essential to the understanding of evaluating performance in the medical world – measuring of quality. Some models of quality improvement will also be shown later in this chapter which are useful for creating optimal quality in the medical world - Total Quality Management, Customer Relationship Management Approach and Proactive Management approach.

Chapter 3: the scene of the case study which is the topic of this study is the healthcare system in Israel. Therefore, a thorough understanding of this system is needed to assess the data collected in the study, and understand the context in which the data should be assessed. The following chapter details the existing knowledge about the Israeli health system to cater for these needs. This section focuses on the structure of the health care system, allocation of funds, accessibility and availability of the clinics engaging in treatment and management of Diabetes patients in two sectors: (1) City clinics; (2) Kibbutz clinics.

Also thia chapter will include a brief description of Kibbutz history and development, than a discussion of the health system in the Kibbutz.

Chapter 4: This chapter of the literature review makes the connection between this dissertation dependent and independent variables: it explains what the nature of the sickness of diabetes is, what the morbidity rates are, and what is the connection between management of diabetes treatment offered to patients and consequences in terms of the number of complications endured by patients.

The treatment of Diabetes is characterized, beyond treating the disease and its range of defined symptoms, by treatment seeking to prevent complications and deterioration in the state of the patient, unlike other diseases where treatment seeks to get the patient healthy again, the goal of Diabetes treatment is characterized by preserving the existing situation and preventing deterioration.

Chapter 5 entitled "*Research Design and Methodology"* . This study integrates the naturalistic qualitative research approach, in which the researcher wishes to understand the phenomena, not only to explain them by phrasing rules and generalizations, with the quantitative data analysis (Creswel, 2003, 2011, 2013, Fetters et. al. 2013).

Chapter6 entitled " *Findings"* This chapter presents the findings pertaining to managing health resources according to place of residence as a factor affecting the control of Diabetes and its complications.

Chapter 7 entitled " *Discussion* " , This chapter discusses the findings according to research questions, the innovations of the research and the research limitations as well as the ways of coping with these limitations.

Chapter 8 entitled *" Conclusions*" presents the final conclusions on theoretical and experimental research, recommendations and contributions.

In the research we try to understand which factors can help Diabetes patients cope and maintain control. Diabetes and its complexities and complications require coordination between the different Health Care providers**.**

Research Design and Methodology

The present study leans on the qualitative research approach (Denzin & Lincoln, 2000) and is backed by a survey dealing with the quantitative research approach.

The research approach selected for assessing the differences between the two research populations is that of a Case Study, by using a number of research tools.

The use of a number of research tools allows compilation of an overall description of the researched phenomenon and validation of the findings obtained from each research tool separately (Yin, 2003).

This research seeks to examine the differences in the management approach to the use of medical resources in Kibbutz and city clinics and their influence on the prevention of complications of Diabetes, while emphasizing and shedding light on the elements which are unique in both approaches.

Participants were chosen from an existing list used in study conducted by Prof. Halon and Mazal Azencot. The sample is random. All participants were resident either in the city or in a Kibbutz. In this sampling method, each individual was selected randomly, so each individual on the list had an equal chance of participating in the research.

The research population included 636 participants recruited from a study which continues to follow up on patients with Diabetes Mellitus patients (Type 2 Diabetes) at the ages of 55 – 75. Participants recruited from two Diabetes clinics in the city and 20 Kibbutz clinics in Haifa vicinity, took part in the study.

Research Tools

The tools used in this research were :

1. Questionnaires were used in order to examine the participants' use of health care services and the level of their health maintenance. Questionnaires for gathering quantitative information from 117 research participants living in Kibbutzim and in the city.

After making an appointment with the participants, they were invited to their community clinic. In the clinic they were asked to fill a questionnaire based on three previously validated questionnaires:

1. Response to treatment questionnaire (Yaari, 2002)

2. Use of health services questionnaire (Hamilis, 2002) engaging in the pattern of consuming health services;
3. Interview with a chronic patient (Levin, 1986) – questionnaire for the consumption of health services in a professional clinic.

2. In-depth interviews with stake holders who are directly connected to the clinics in the Kibbutz and in the city so as to give a clearer validity to the researched phenomenon and its findings.

In-depth interviews with 30 participants were conducted in an attempt to examine the management approaches in both types of clinics in terms of allocation or resources in treating Diabetes patients.

The interviewees were chosen based on their roles: doctors, nurses, a district Diabetes coordinator in charge of all Kibbutz and city clinics, and the human Resource Manager in the district.

3. Medical measures based on blood and urine tests from all the participants.

A list of the data retrieved from the "ofek" Health Maintenance Group clinical software program:

HbAC1 level and the appearance of complications such

- Number of hospitalizations of participants in hospital.
- Myocardial infarction.
- Laser treatment for eyes.
- Coronary Vasculiration.
- Peripheral vascular disease.
- Congestive heart failure.
- Microalbuminuria in urine test.
- Participant after open heart surgery.
- Severe wound healing.

Research Variables

Dependent Variable: The number of complications diabetes patients endures.

Independent Variables:

1. Health resources – Management approach: by the management style used to prevent complications of Diabetes.
2. Place of residence – Kibbutz vs. City.

Research Hypotheses

1. There will be a connection between the Management Approach and occurrence of complications. Due to better management practices in the Kibbutz the patients there will suffer fewer occurrences of complications than the city patients.

2. There will be a connection between Management Approach according to the place of residence and health states without high level Diabetes complications – the patients' health state will be more balanced among Kibbutz patients

Ethical Considerations

The proposal for this research was submitted to the local Helsinki Ethics Committee at the Carmel Medical Center for approval. The Helsinki process lasted about 8 months. Participants for this research were recruited from a study that is under follow up . They were asked to participate in the research and sign an informed consent form.

Ten participants refused to participate in the present research; they had some affinity to Medicine and Nursing and claimed they did not visit the clinic; they treated themselves, so they did not want to be part of this research which examines the extent to which clinics are used by patients.

The researcher meticulously observed anonymity of participants according to the rules of medical ethics. Throughout the research participants' identity was kept confidential through an identification code. The data were statistically processed only through codes without the participants' names or national ID numbers.

Findings

This chapter presents the findings pertaining to managing health resources according to place of residence as a factor affecting the balancing of Diabetes and its complications**.**

Table 1: Demographic Characteristics of Participants (N=636)

Parameter		Kibbutz N=133	City N=503	P – value t-test Pearson chi-square
		Mean $\pm$ *Std* *Median*	*Mean* $\pm$ *Std* *Median*	
Age		68.7 $\pm$ 5.6 68.0	68.38 $\pm$ 5.39 67.0	0.733
Gender	Male	59 (44.3)	170 (33.8)	0.224
	Female	74 (55.7)	333 (66.2)	
Country of Birth	Israel	71 (53.3)	170 (33.8)	0.037
	Other	62 (46.6)	333 (66.2)	
The degree of your religiosity	Religious	130 (97.7)	318 (63.2)	0.000
	Secular	3 (2.25)	185 (36.8)	
Years of Learning	<=12 years	40 (30.9)	276(54.8)	0.024
	>12	93(69.1)	227(45.6)	
No. of Children	<=3	82(61.7)	443 (88.2)	0.001
	>3	51(38.3)	59 (11.8)	
Marital Status	Married	109 (82)	412(82.4)	0.852
	Other	24 (18)	91 (17.6)	

Quantitative Findings

Regarding Question No. 1: *How does Kibbutz and City Management Approach influence the occurrence of complications in diabetes patients?*

The research Hypothesis: *there will be a connection between the Management Approach and occurrence of complications.*

In the Kibbutz the patients will have fewer occurrences of complications than the city patients.

Management Approach –define as the management approach for the prevention of diabetes affects decision making, the structure and layout of the clinic as well as the tools and techniques used to achieve the goals.

Table 2: Distance from clinic

Distance from clinic	**City N (%)**	**Kibbutz N (%)**	**Total N (%)**
<=10min	50 (73.5)	45 (91.8)	90 (81.2)
>10min	18 (26.5)	4 (8.2)	27 (18.8)
Total	68 (100)	49 (100)	117 (100)

$\chi^2(1)=6.252$ p-value=0.012

It was found that the distance to the clinic is shorter for Kibbutz participants;

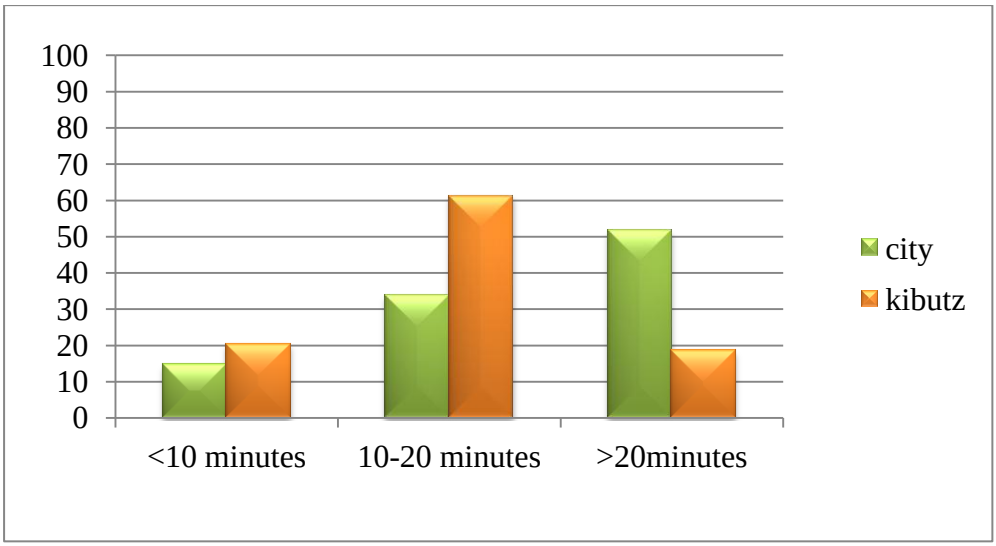
Table 3: Clinic-initiated checkups

Clinic-initiated checkups	**City N (%)**	**Kibbutz N (%)**	**Total N (%)**
No	20 (29.4)	1 (2.0)	21 (17.9)
Yes	48 (70.6)	48 (90.8)	27 (82.1)
Total	68 (100)	49 (100)	117 (100)

$\chi^2(1)=14.487$ p-value=0.000

- ✓ The Kibbutz clinic initiates more regular Diabetes follow-up activities than the city clinics;

Figure 1: Availability of primary health services



$\chi^2(2)=13.560$ p-value=0.001

- ✓ It was found that the availability of primary Health Care services is better in the Kibbutz than in the city.

Content analysis of the interviews indicates that the topic of health care resource management available to the two populations arises in several categories:

A. Management style of treatment
B. Initiated and planned check-ups
C. Information regarding medications and training
D. The medical staff's responsibility after clinic hours
E. Personnel management in Kibbutz and city clinics
F. Managing shuttle services for patients to the clinics
G. Appropriate training and special health-promoting projects

1. There is a significant difference in the clinic's manpower available to the patients. The level of this availability affects:

- ✓ Follow-up on patients. Patients are invited for an appointment in the clinic, for regular and systematic follow-up. In the Kibbutz, the patients are at the center, and all of the medical support team are at their disposal. The clinic, with the help of all of the support team, cares for the patients' wellbeing and needs.

- ✓ Patient compliance - when patients' Diabetes becomes uncontrolled, they should arrive at the clinic daily for blood tests and instruction. The amount of manpower affects the ability to provide personal training, and the ability to encourage poorly responsive or uncontrolled patients for treatment. This is the reason why the staff at the city clinic tends to invite fewer low compliance patients and patients with uncontrolled Diabetes. According to the staff at the city clinic, they do not have enough manpower to support these patients, which is why they usually tend to transfer patients who become uncontrolled to the specialized Diabetes clinic.

2. There is a significant difference in the responsibility for the patient that is placed on the clinic after business hours. In the Kibbutz, the patient can call the team even when the clinic is closed if needed, compared with patients in the city, who require emergency services and hospitals.

3. There is a significant difference in the transportation options to specialized clinics. In the city, everything to do with health-related transportation is the responsibility of the patient, compared to the Kibbutz, where the clinic makes sure to find ways to drive the patient from place to place.

From the findings, it appears that there are significant differences in the allocation of health resources available in Kibbutz and city clinics. More resources are allocated in the Kibbutz both in terms of accessibility and availability and in terms of personnel and meeting the patients' needs after clinic hours.

Differences were found in the monitoring system used for Diabetes patients between the Kibbutz and the city. Follow-up in the Kibbutz is initiated and scheduled by the staff; the staff has a close and continuous contact with the patients throughout the day; the patients are instructed about the medication they are taking. Patients in the Kibbutz feel that all of their needs are taken care of by the clinic.

In the city, the doctors wished to go from a reactive approach to a proactive one, so they can treat the unbalanced patients and preserve the situation of the balanced ones. In the city, relationships with the patients do not exist after clinic hours, and if patients need medical care they have to go to an emergency room in a hospital.

The interviews showed that the Kibbutz clinic has more personnel available to the patient compared to the personnel in the city. In the city, it is the patients' responsibility to care for the administrative aspects of their health services, compared with patients in the Kibbutz who receive assistance from the clinic's staff whenever the need arises.

In the Kibbutz clinic the work structure is crosswise led by the cooperation between all the team members. The division of the work enables each nurse to be professional in the area she is in charge of. This will enable focusing on the patient, his needs and desires. If there is any change in the patient's health status, the nurse will be able to identify it based on the patient's report and her own examination.

The kibbutz clinic team members speak the language of quality. The team cares for the high-level and quality of the treatment. The goals set by the Ministry of Health for the treatment of diabetes are valid for any clinic in Israel, and serve as a goal which the clinic has to achieve. These goals exist in the Kibbutz clinic as well but are not the main goal, which is the optimal quality care for the patients.

The relationship between the doctor and the teams in the city clinics is formal. Each member of the team knows his job. The doctor sees the patients and is in charge of treatment, helped by the nursing team. The nurses operate by assignments-goals and not by patients. Only the doctor in the town clinics sees the patient holistically, and this takes up a lot of his time during visiting hours.

Regarding Question No. 2: *How does Kibbutz and City Management Approach influence the "Complication Extent"(CE) of diabetes patients?*

Research Hypothesis: *There will be a connection between Management Approach according to the place of residence and health states without high level Diabetes complications – the patients' health state will be more balanced among Kibbutz patients.*

Table 4: HBA1C measure of blood glucose balance

		City N=68	Kibbutz N=49
HBA1C	Mean ± Sd median	7.36 ± *1.376* 7.05	6.92 ± *1.287* 6.7

Table 4 reveals that the HBA1C measure among Kibbutz patient testifies to a better balance of Diabetes than among city patients (P-Value 0.048)

Significant differences were found in favor of Kibbutz participants with regard to a control of Diabetes and Diabetes complications. Kibbutz patients are better controlled in terms of their Diabetes.

Table 5: Number of complication

		City **N=503**	**Kibbutz** **N=133**
Complication	Mean ± Sd median	1.315 ± 1.236 1	1.015 ± 1.236 1

Mann-Whitney, P-value=0.032

Table 5 reveals that the number of complications that occurred in the city participants with higher statistical significance than those in the kibbutz.

Table 6: ANOVA – Correlation between number of specialists and HbA1C index

			Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
HbA1C * Number of doctors seen not including gynecologist	**Between Groups**	(Combined)	9.794	1	9.794	5.573	.020
	Within Groups		202.112	115	1.757		
	Total		211.905	116			

Table 6 reveals a high correlation between using a number of specialists and a high HbA1C index (P-Value-0.020)

Table 6 demonstrates the connection between the consumption of additional services and complications.

In addition, City patients had more frequent blood glucose and blood pressure measurements, reported more visits to a dietitian and were more obese than Kibbutz participants.

Table 7: level of "Complication Extent" of participants

Complication extent	**City** **N** **(%)**	**Kibbutz** **N** **(%)**	**Total** **N** **(%)**
No	166 (33.0)	58 (43.6)	224 (35.2)
Yes	337 (67.0)	75 (56.4)	412 (64.8)
Total	503 (100)	133 (100)	636 (100)

χ^2 (1) =5. 187P- Value=0.023

Table 7 reveals that the level of "Complication Extent" among City participants is more with statistic significant.

Table 8 describes the mortality among participants from 2012 to August 2014

Table 8: Number of death of participants in the research

	City **N** **(%)**	**Kibbutz** **N** **(%)**	**Total** **N** **(%)**
No	467 (92.8)	130 (97.7)	597 (93.9)
Yes	36 (7.2)	3 (2.3)	39 (6.1)
Total	503 (100)	133 (100)	636 (100)

χ^2 (1) =4. 139P value=0.036

Table 8 reveals that more of the participants living in the city died. (P- 0.036)

Management approaches that affect prevention of the level of complications regarding Diabetes were examined in an in-depth content analysis of the interviews.

The following categories emerged with regard to unbalanced Diabetes patients in the city and the Kibbutz:

1. Acting upon the indicators of the medical and nursing staff in primary clinics;
2. Patient-centered approach;
3. Continuity of care between the patient's hospitalization and the community clinic;
4. A multidisciplinary team;
5. Compliance with treatment
6. Patients and medical staff's awareness of the development of complications
7. Diabetes management funding

In the Kibbutz clinic there is more training and care for the patient compared to the city clinic.

In the Kibbutz clinic, the client focused approach is used, whereas in the city, the approach is based on tasks determined via computer software.

The Kibbutz clinic takes the approach of prioritizing patients whose disease becomes uncontrolled; the team takes an approach focused on the patient, who is then invited back for repeated check-ups until blood Glucose level are controlled, while providing appropriate supportive care.

In the city, due to lack of manpower, unbalanced patients are transferred to specialized Diabetes clinics for further treatment.

In instances where an uncontrolled patient is admitted to the hospital, the doctor emphasizes the aspects of the importance of continuity of care between the time the patient is admitted until he or she receives further treatment in the community's health care facility, in order to make sure that the patient will continue receiving the right treatment.

Significant differences were found in between the Kibbutz and city clinics regarding patients with foot sores. Kibbutz patients receive preferential treatment until the sores heal.

This healing process requires a change in lifestyle, and family organization is required. There are also costs of care: dressings, medications, special footwear, and absence from work.
For patients living in the city, this kind of complication could cost them their life, when there is no one to change their dressings every day and make sure that the they take the proper treatment. Family support is very important in addition to the support that the patient will receive from the clinic.

The budget issue is rather significant in the allocation of health resources for treatment of Diabetes and prevention of complications. The Kibbutzim patient does not pay for health related services in comparison with the city where the patient has to pay.

Discussion

Discussion of Research Findings regarding the First Research Question: Differences in the Management Approach in the city and the Kibbutz

Management Approach ensures quality of care that provided to patients in clinics ,encompasses aspects of service such as availability, accessibility, continued care, safety and consideration.

One of the most prominent resources which influence the Diabetes patient's health on a day-to-day basis is primary health care, and the most important factor is its availability to the patient. This availability is expressed in a number of parameters such as the clinic's admittance hours, the number of personnel, the clinic's working methods and the staff's commitment and relationship with the clients.

1. Availability of Primary Health Care

The time spent in the waiting room before the appointment with the doctor and before medical tests is one of the most important measures of availability of primary health care, and therefore, of the quality of the health care system.

In this research, it was found that the level of availability of primary health care in the Kibbutz clinic is higher than in the city. It was found that 51.5% of the city participants reported waiting more than 20 minutes to see the doctor, compared to 18.4% of the Kibbutz participants. The research findings correspond to findings presented in the literature, emphasizing the time clients have to wait to meet with their family doctor.

Research conducted in Israel compared to the OECD states found that the proportion of patients who reported enough time with the family doctor is lower compared to 14 states: 84.1% and 87.1% respectively. Israel was ranked in the 5th lowest place (OECD, 2013).

In contrast to the full Kibbutz clinic support even in hours when the clinic is closed, the research findings regarding the availability of primary health care in the city correspond to the findings of previous studies, testifying to a low level of availability in the city, especially to the elderly patients (Shmueli and Englecin-Nissan, 2010; Carmel et al., 2007).

Long waiting for primary health care may lead, in some cases, to negative results and deterioration in the clients' health. From the economic perspective, long waiting times are disadvantageous as they increase the chance of complications and even hospitalizations, and so, they increase the system's expenditures. Additionally, they increase private expenditure as clients who want to shorten the waiting period find access through the private channel.

1.1 Number of Personnel in the Clinic

The number of professional staff members and their role in the clinic which provides primary health services to diabetes patients is a significant parameter in the quality of treatment provided to the patients.

According to the declaration of the American diabetes Association, "*people with Diabetes should receive medical care from a physician-coordinated team. Such teams may include, but are not limited to, physicians, nurse practitioners, physician's assistants, nurses, dietitians, pharmacists, and mental health professionals with expertise and a special interest in Diabetes*" (American Diabetes Association, 2014**)**.

These findings correspond to the findings of a survey conducted by Goldemberg (2010), who found that in the Kibbutz, there is a high number of formal personnel involved in the health services, i.e. doctors, nurses, medical committees, supervisors, committees for the elderly, secretarial staff, director of the care for the handicapped section, old age homes, and caregivers according to need (Goldemberg, 2010).

A possible explanation of these findings may be found in the fact that the Kibbutz funds additional personnel with a variety of roles due to its unique egalitarian views and belief in help, cooperation and mutual help.

2. Accessibility

Access to health care is a product of supply factors, such as the location, availability, cost and appropriateness of services, as well as demand factors, such as the burden of disease and knowledge, attitudes and skills and self-care practices (Gulliford &,2002).

Accessibility in this research was examined in terms of:

1. Budgets, Social Security Coverage and Supplementary Insurance;
2. Distance from the clinic.

2.1 Health Care Budget

In Israel, the partial budget shouldered by the government is on a steady decrease for several years now, from 68.6% in 1996 to 60.1% in 2010, whereas the private funding is on the rise, from 4.1% in 1997 to 5.1% in 2010. The decline in public funding can be attributed to the cutbacks in the government's support (Chernichovsky, 2007, 2008: Ben Nun and Keidar, 2007, Cohen, 2011).

The effect of the decrease in public support was immediately apparent especially in the effect it had upon the accessibility to health services and on the inability to protect the private income from the high costs of private care.

In correspondence to the findings reported in the literature, the current research findings testify that 33.8% of the city participants require additional medical services which they cannot afford compared to 22.4% of the Kibbutz participants.

The research findings reveal that despite the decrease in public funding of health Care services, in the Kibbutz, additional resources are invested from Kibbutz funds, out of consideration of the health of the members.

2.2 Accessibility to the Clinic – Distance

Access to the clinic is expressed in the distance between the patient's home and the clinic and the way of getting to the clinic. In the current research it was found that the distance to the clinic is shorter for Kibbutz participants than for city participants. The high accessibility from each Kibbutz home, about a five minutes' walk, provides Kibbutz members with the possibility of getting to the clinic on a daily basis in case they need medical advice or treatment.

Although Kibbutzim are located in Geographical areas where there is less public transportation, the research findings reveal that accessibility to clinics outside the Kibbutz is also high, because patients have regularly scheduled shuttles going to the nearby city where the specialized clinic is located, and that this shuttle serves all of the Kibbutz's members. In contrast, in the city, all of the responsibility for the transportation of the patients lies with the patients themselves, while in some cases the state will fund a taxi for the transportation. This is not applicable for Diabetes patients who have to visit a professional clinic for a routine check-up.

Connection between Management Approach and occurrence of complications in diabetes patients

In this research, it was found that Kibbutz patients are more balanced in terms of their Diabetes compared to patients from the city.

This finding can account for the differences between the populations regarding Diabetes complications. An additional explanation of the difference is failure to meet goals for glycemic control in primary care settings may be due in part to lack of information critical to guide intensification of therapy (Manski-Nankervis et. al., 2014).

In this research it was found that the unbalanced patients are referred to a specialized clinic, due to lack of personnel and time to empower the patient by providing the proper information pertaining to his or her treatment, the patient, therefore, ends up with no support and help in critical treatment junctions.

The findings correspond to the findings of studies conducted by Tannebaum et al. (1974); Leviatan and Cohen (1985); Carmel et. al. (1995, 1996); Leviatan (1999) who claimed that the population of the Kibbutzim demonstrated (1) High level of physical health; (2) Exceptional levels of wellbeing; (3) Longevity and solid testimony to successful aging.

Wilkinson (1999), leading the school of the inequality model and its impact on the level of health in the community suggests that egalitarian societies tend to be healthier because they are socially bonded, and as status gaps in society increase, the quality of social relationships deteriorates.

This possibly accounts for the fact that the health of Kibbutz members, who live in an egalitarian society, is better than that of city patients.

Discussion of Research Findings Regarding the Second Research Question: The connection between management approach in the place of residence (Kibbutz vs. City) and the prevention of Diabetes complications.

The research hypothesis was that there would be a connection between the place of residence, management of health resources and health state without Diabetes

complications – the patients' health state will be more balanced among Kibbutz patients.

Management Approach in the Primary Health Care Clinic

The management approach in the Kibbutz clinic maintains all prevention, follow-up and treatment ought to be the responsibility of the clinic, unlike the approach in city clinics.

This approach is appropriate with the statement of institute of medicine that primary care is "the provision of integrated accessible health care services by clinicians who are accountable for addressing a large majority of personal health care needs, developing a sustained partnership with patients and practicing within the context of family and community" (Donaldson et. al.,1996).

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In contrast, the research found that more participants who live in the city use the services of specialized clinics, social workers, physiotherapy, occupational therapy, nutritionists and cardiologists than Kibbutz participants. This finding reveals that chronic patients in the city do not find solutions to their complaints and complications with the family doctor, and so they seek help in specialized clinics, which may offer more help.

Initiated and planned check-ups by the clinic's staff for Diabetes follow-up

Primary Health Care leaves little room for follow-up. Most of the doctor's time is devoted to patient care rather than to preventing diseases (Grunfeld et. al, 2013**,** Yarnall et. al., 2003). One of the most important factors in controlling blood glucose level is continuous follow up on the patient's state. (Wagner ,2000)

In the Kibbutz clinic, follow-up is initiated and planned by the nurse in charge of chronic diseases. In this follow-up, the patient undergoes medical tests whose aim is to identify signs that might point to complications such as a new foot sore.

In contrast to the Kibbutz clinic where follow-up is planned and orderly, the work in the city clinic is done according to balance and performance indices, which on which all community health services in Israel rely (Manor et. al., 2012).

The research findings show that unlike in the Kibbutz clinic, in the city clinic, patients are called in once a year for their Diabetes follow-up. However, in the city clinic there is no one set nurse for follow-up procedures, and the patient may meet a different nurse each time. The patients that are uncontrol in the city referred to a central Diabetes clinic for treatment and further follow-up.

Availability to Patients after Clinic Hours

High standard primary health should include the ability to offer an extended range of services, including local and rapid access to specialist advice; focus on population health management as a way of addressing inequalities in health.(American Diabetes Association, 2014).

In this research, significant differences were found between the city and the Kibbutz regarding availability to patients after clinic hours. The kibbutz clinic staff continuous contact also exists between the clinic and the patients, and the patients feel comfortable contacting the staff with any questions or concerns after business hours, whenever the need arises.

In contrast when the clinics are closed, in case city patients are in need of health care services, they have the option of going to an emergency room in a hospital, which is not always near their places of residence.

Connection between Management Approach and Preventive Care in the Clinic

Early diagnosis and optimal medical care constitute the key elements of effective prevention. **Management approach is one of the keys to maintaining the patients' proper health state**. the differences between Kibbutz and city approaches may account for the research findings pertaining to the control of patients in the Kibbutz and in the city.

Many primary care teams and organizations are increasingly providing **anticipatory**, **rather than reactive approaches**, using disease registries, risk stratification, and other population health assessments to manage patients at high risk of admission for long-term conditions (Thorlby, 2012).

Patient-centered care is defined as an approach to "*providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensures that*

patient values guide all clinical decisions" (Glasgow et. al., 2008; Committee on Quality of Health Care in America,2001), .

Furthermore, Epping-Jordan et. al. (2004) maintain that patients with complex needs and long-term conditions benefit from continuity of care with their health professional or team because it allows for a better understanding of the patient's preferences, and hence more appropriate and shared care (Miksch et. al, 2010), recommended that the patient needs to be considered holistically in light of his or her individual circumstances.

Interviews with stake holders in the city clinic showed that the clinic can only provide basic treatment based on the existing manpower state, which is not enough for meeting the needs of patients. In the city, it is the patients' responsibility to care for to the administrative aspects of their health services, compared to Kibbutz patients who are helped by the clinic personnel with each problem they encounter. The Kibbutz clinics have increased their personnel so as to allow for follow-up and preventive care.

Patient care teams in primary care have the potential to improve the quality of care for patients with chronic illness (Wagner**,** 2000**).**

Recent research has concluded that strong primary care is associated with lower rates of avoidable admissions to hospital and fewer potential years of life lost for most of the conditions that were studied; yet requires higher levels of health spending to achieve such benefits, with likely savings accruing in the longer term (Kringos and others, 2013).

One of the approaches that is congruent with strong primary care is CRM (Customer Relationship Management). Effective CRM practices in a clinic may mean providing services related information to a patient very quickly. Responding to the patient's appointment and an admission requests promptly, dealing with patient queries and complaints expeditiously exercising all kinds of flexibilities in serving patients (Saroj and Arun, 2011).

Similarly, this research found that Kibbutz clinics work by a focused approach with the patient in the center, surrounded by all relevant personnel who seek to help in the prevention and treatments stages as well as in maintaining a balanced situation.

It was also found that the clinic staff also guides the patients and cares for them more than the staff in city clinics. Kibbutz patients receive greater support in coping with the chronic disease from which they suffer.

In this research, complications were examined and it was found that the number of hospitalizations of participants and the number of patients who required laser eye surgery to correct eye Retinopathy is higher among participants living in the city than those living in the Kibbutz. From these findings, we realize that the Kibbutz clinic cares for the patients by providing tighter care, follow-up and monitoring, thus they are able to prevent diabetes complications**.**

Economic Burden and Complications

The role of primary care is to improve the quality of care for patients with chronic diseases, reduce complications, improve patient oriented outcomes, and lower costs.

From the literature review it appears that more city patients cannot afford to pay for the treatments they need. This fact means that the patient's situation might get worse and they are more likely to develop complications. Kibbutz patients receive full funding of their medications and any medical treatment they might need.

Conclusions and personal contributions

Conclusions and recommendations

This research has further implications for similar situations overseas since according to the research findings, differences in health do not derive from age, gender or physiological measures, but rather from differences in management of the disease and its prevention (primary/secondary factors).

To ensure proper coverage on the level of treatment, the institutions must first engage in medical follow-up on patients defined as "**at risk of morbidity**", so as to prevent the onset of the disease and its progression and complications. Health Care providers must offer guidance and recommendations for maintaining a healthy lifestyle. Each time a chronic patient visits a medical institution, the staff ought to initiate a meeting about proper nutrition' avoiding smoking and increasing physical activity Advanced

technologies such as an electronic medical chart can help in follow-up as it provides continuous information, which allows for improved treatment and follow-up.

Using Electronic patient files leads to transparency of all the patient's indices, so that it is possible to guarantee high quality treatment. Before tests, goals have to be set and published in the clinic.

Resources must be invested in enhancing the connections between the HMO's relationships with the clients via extensive campaigns explaining the patients' rights and the way in which the system works.

Public investment in primary Health Care Services might minimize the need for unnecessary hospitalizations and the worsening of the patients' condition. This can be done by increasing the number of doctors in the community, so that a family doctor could have a conversation with a patient and serve as the main figure directing the patient in the maze of the Health Care system.

Increasing the number of primary care physicians in the community will enable better care and providing preventive counseling and training .

A system drawing upon specialized doctors is less effective that a system emphasizing primary care, where the emphasis is on the significance of a continuum, coordination and preventative medicine.

Empowering clinics in the field, by providing financial incentives to clinic in the examination of numerous variables including customer satisfaction, results of visits of the regional management team, and determining the extent of meeting quality criteria which were mutually decided upon by the clinic management and regional management in the annual work program.

Theoretical and practical contributions

The theoretical research is based on a comprehensive bibliographical study including articles in reputable international journals and books, focusing on three major topics – management, health management, and diabetes management, in relation to resource allocation for clinics for the prevention of diabetes complications.

The theoretical research has included the topics that can explain the salient concepts affecting resource allocation in the clinics.

The contribution to theoretical study:

- Logical presentation of the subject, with a full picture of the topic investigated, relationships between concepts and their context for the experimental study.
- Presenting the various approaches to quality theories.
- Presenting the approaches relating to providing service for patients.
- Presenting the different approaches to the management and prevention of diabetes.
- Presenting the research methodology that examined the management approach in resource allocation – the questionnaires focused on the use of all those participating in health services, the interviews were conducted with specialist role holders in the area of diabetes management in clinics, and criteria to determine diabetes complications.
- The results of the study determined that use has been made of the CRM approach in segmenting the diabetic population. The main contribution of the teams was in their relating to the patients according to the CRM method, for non-balanced patients in terms of diabetes and adjusting treatment regimes according to their needs.
- The study confirmed the theoretical models as presented in literature. These models support the management approach allocating considerable resources to prevention of disease. The models are patient-centered, providing high-quality preventive care enabling external control according to accepted criteria.

Diabetes is a chronic disease whose prevalence in the different countries of the world, including Israel, has been on the rise and has become an epidemic in 2006. Diabetes constitutes a heavy burden on the Health Care system, on the patients and their families. It is, therefore, important for treatment of the chronic disease to be on the

level of prevention of disease progression and complications at all stages of the disease and at all ages.

Education for prevention ought to begin in childhood, in order to prevent morbid obesity. From adolescence on, prevention should be both on the local and national levels. All this is possible with proper planning of allocation of funds. It is quite well known that public funding in Israel is decreasing while private funding increases. When the public health system invests more in prevention, it will pay in the long run, in terms of fewer hospitalizations and fewer complications leading to less dependence on health care providers. Currently, the primary Health Care system in the city invests more resources in treating the patients with the disease and complications of the disease than in preventing disease.

The study can contribute to the establishment of a regional policy for the decision makers, the doctors and other personnel working and coming in contact with the patients.

On the national level, in order to succeed in prevention, preventive enterprises on a national level are essential, and the provision of the required resources to implement them.

As for the clinic, it is important to plan preventive measures for the patients, taking into consideration the work load involved so as not to obstruct the daily smooth running of the clinic engaged in fulfilling the needs of the general population.

The doctor needs to analyze the work method and the daily schedule to make them more productive and enable the integration of preventive measures.

Every visit of the patient at the clinic should be used for prevention. It is also efficient to relate the visits to the reason for the patient's visit, and use components of a preventive nature, such as counselling to refrain for smoking for a coughing patient.

On the daily routine, a suitable work environment should be established, and among others, lengthening the meeting doctor-patient. Additionally, appointments have to be allocated to chronic patients with acute problems who cannot wait long to see the doctors, so that they can get to the doctor within a day or two. The chronic patient needs a supportive relationship, where he or she feels the staff members care. Such an

approach may help the staff identify symptoms which may testify to a worsened situation and prevent complications.

With regard to management of resource allocation, the conclusion emerging from the research findings is that the work of the professionals in the clinic has to extend beyond the work of the individual doctor, to multidisciplinary teamwork. Nurses, nutritionists, pharmacists, social workers and psychologists can all alleviate the primary doctor's work. Team work is essential for the successful management of the health system.

In a world of limited resources, the decision to add personnel has to come at the expense of economizing. This will find expression in fewer referrals to hospitalization, to the emergency room or to specialized clinics. It is important to remember that additional staff does not mean a change in the role of the primary doctor, whose expertise has to be more extensive that it is today. The doctor's responsibility might remain the general treatment of the chronic patient.

The study points to the considerable relative contribution of the nurse in managing the patient's care in chronic disease via planned and initiated follow-up on Diabetes patients. In this follow-up some parameters are examined which allow for early on identification of complications.

Team effort is essential and should include also less professional personnel, recruiting the whole clinic team for the joint effort. This will increase the clinic's chances of fulfilling the goals it has set for itself.

In relation to the quality criteria chosen, the work program will include: quantitative goals, the measures undertaken to achieve that goal, milestones, integrating organizational measures to provide comparative information, self-management and adjusting the effort for improved quality in the clinic's work and managerial routines as part of the process of establishing an annual work program, follow-up on the partial implementation of the program and providing financial incentives to those who fulfill the program's goals.

The current population is more highly educated, more assertive and accessible to information. Health service providers are no longer the sole source of medical data and a result, their relations with the patients have changed. By joint decision-making

and responsibility for the patient’s health, increasing the patient’s involvement may lead to better use of resources and improving the quality of care.

A serious problem has to do with the quality and level of medical services provided in the evening and at night. Medical service at night is provided by doctors who are not familiar with the patients and work in private companies, and hence the quality of the service they provide is not so good .

The recommendation is to operate medical centers that will operate 24 hours a day and provide solutions for seriously ill patients. The advantage here is that the doctors and nurses in such centers may have access to the patients' electronic medical files, and they will be especially trained to work with such patients.

Furthermore, primary community doctors can be integrated into emergency rooms in the hospitals. Such integration will support:

- The improvement of the relationship between primary medicine and hospitals;
- Enhancement of the primary doctor's professionalism, which could result in fewer referrals to hospitals and keeping the patients in their communities.

Research limitations

Limitations Related to the Research Participants

Participants who agreed to fill in the questionnaires in the 2006 research group were those who could have greater health awareness, and hence – more cooperative.

In the process of recruiting participants for this research, 10% of the participants, who came from the field of medicine and nursing, and refused to participate in the research for the reason that "the cobbler's shoes are never fixed", they stated they failed to adhere to follow-up, and once they read the questionnaire, they realized they could not contribute to the research, they were disqualified as participants.

Recruiting participants for the current research took longer than expected, and so the final size of the sample was dictated by the limitations of time, but in direct relation to the size of the sample in the main research.

Limitation Related to the Research Tools

The structure of the questionnaire – to validate the questionnaire for the purpose of this research, a pilot was conducted with 30 participants. Then the questionnaire was revised based on the pilot study.

In addition to the interviews, use was made of questionnaires. Quantitative analysis of the questionnaire data was conducted statistically, and the results were analyzed based on these statistics, and does not depend on the researcher's attitudes and perceptions. The questionnaire allows the respondents to answer the questions anonymously, and thus it enables the respondents to express their opinions without needing to provide evasive or manipulative responses.

The present research is based on self-reported data regarding all the research variables. There are those who claim that research based on self-report has limitations, as its validity is not perfect, and it might be biased, or based on social desirability. Therefore use was made of some research tools that examined the relationship between use of health resources and health.

Limitation Related to the Researcher

The form of investigation depends on skills of the researcher, the interviewer, the analyzer, and his or her personality which influences the final results. This may create a limitation if the researcher does not capture the main points which influence the process, but by the researcher's close acquaintance with the research field she was able to focus on the uniqueness of this research, its particular context and narrative.

In the research where the researcher is active within the research process, there may be influence on identification with some aspect of the process, which might, in turn, influence data analysis. In this respect, the researcher acted to find the golden path between involvement, integration and empathy on the one hand, and distance and critical thinking on the other. These considerations were taken seriously during the research and the report of its findings so as to present an authentic picture which reflects the reality as it is.

In the qualitative analysis of the interviews, the researcher made sure to adhere to the interviewees' statements to the letter, after reading the written materials several times and dividing the data into categories and into main themes (Shkedi, 2006).

Further Research

This research examined the management of Health Care resources as a factor that influences the health of Diabetes patients

Additional intervention research could examine an intervention in patients with poorly controlled diabetes in order to examine results before and after the intervention, how the program influences their state of health in comparison to the influence of the clinic's management approach.

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