

Utilization of Health Services by IDF Soldiers and Civilian Population at an Israeli HMO

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Abstract

Background: Over the past decades we have witnessed an increase in expenditure on health services in the various military systems. One of the ways to curb costs is by means of outsourcing. Based on this idea the Israel Defense Forces (IDF) promoted a project allowing soldiers to receive medical care from a nearby civilian HMO (Meuhedet). The medical basket provided to the soldiers is more extensive than that to civilians, furthermore the soldiers received all the health services they needed from the HMO without copayments.

Objectives: The overall-objective of this study was to examine the consumption of medical services by conscript and standing army soldiers in comparison to that by the civilian population of similar age.

Methods: A retrospective study comparing consumption of medical services between the population of soldiers and the civilian population.

Populations and samples: The military population included 4530 IDF soldiers, who were ascribed to Meuhedet over the course of 2012. The civilian population included members of Meuhedet who do not have any disabilities.

Data analysis: Using SPSS software, we used a comparison of averages test using the independent-samples T-test with a level of significance of 5%.

Results: The military personnel tend to consume considerably more medical care than their civilian counterparts.

Conclusion: In order to maintain the outsourcing of medical services for military personnel by the HMO, either the HMO's revenue on their account must be higher or a system curbing their consumption of medical services must be put in place.

Keywords: Health services; Military population; Soldiers; Medical services; Health care

Background and Literature Review

Over the past decades, health spending has significantly increased in most of the developed countries [1]. Similarly to civilian health systems there has been an increase in expenditure on various military health systems. As an example, expenditure of health services in the United States military, have doubled over the last decade [2].

Attempts to moderate the latter included, on one hand, changing patterns and habits that have a higher prevalence among soldiers, such as obesity and tobacco and alcohol consumption, and on the other hand, curbing costs [3].

One of the traditional ways to curb costs is by outsourcing services. Various organizations use outsourcing to improve the outcomes and services they provide to their patients [4]. According to this method, the organization's directory examines all the organization's activities, and leaves only the core business activities under its own operation [5]. Using outsourcing allows better focus on the company's primary activities and the transfer of some activities, which are not part of the organization's core business, to an organization that specialized in the required activity [6]. Kakabads [7] argues that outsourcing in health care is beneficial in terms of cost-benefit, since it provides additional knowledge, infrastructures and insights that save learning time and allows focusing on the main objective, which is proving a higher quality of health care to the patients. Outsourcing in healthcare includes the transfer of all the administrative responsibility to an external organization specializing in the provision of health services and

allowing the company to expand its activity into areas that complement its basic activities. As a result, these services will have a positive impact on patient satisfaction.

From 1995 onwards, some of the countries in the European Union began integrating outsourcing in their country's military, with the objective of improving the cost benefit ratio [8]. Magenzi et al. [9] note that the IDF Medical Corps pioneered the outsourcing method. The authors refer to a process that began in the 1950s, whereby the responsibility for military hospitals was transferred to the Ministry of Health and Labor and to the fact that by then, agreements had been signed, under which military physicians were trained in public hospitals and IDF soldiers received specialist treatment and hospitalization. The researchers add that over the years, the arrangements were expanded to include contracts with the various community health plans (HMOs). Magnezi et al. [10] published a study regarding the impact of outsourcing

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health care services on IDF patients' satisfaction. This study found that the soldiers expressed higher levels of satisfaction with civilian clinics in comparison to military clinics due to their accessibility, availability and courteous service. Dankner and her colleagues [11] conducted a study with the objective of examining whether outsourcing the medical services provided to the military would improve the medical quality of primary care provided to the soldiers. The study's conclusion was that integrating civilian specialists in the military medical system was favorable both in relation to the standard of quality and in cost reduction. Magnezi et al. found that the cost of medical treatment for a soldier was significantly lower in the civilian HMO than in the military clinics [12]. Based on the results of these studies, in January 2011, the IDF launched the Aviv Project, which continued until 2013 when the HMOs terminated their contracts with the IDF (prior to 2011, the IDF provided the health services itself, through physicians serving in the conscript or reserve army). This project included non-combat soldiers usually serving in permanent bases located within or in close proximity to civilian populations, with service routines allowing them to receive medical care from a nearby civilian medical facility, both during the unit's hours of activity and after them. In the framework of the Aviv project, medical care services was provided to IDF soldiers serving at the Kirya and at Tel Hashomer (two major non-combat military bases, by the Meuhedet and Leumit HMOs, respectively).

The payment method for the services provided by the HMOs was similar to that used to pay Israeli HMOs for care provided to their civilian insurees - prospective capitation scheme. A fixed periodic amount is paid for every soldier during the period in which he or she is eligible to receive treatment from the HMO. The payment is comprehensive and covers all the services the soldier is entitled to receive from the HMO, in accordance with the terms of the contract, regardless of the cost of each individual treatment. Namely, a soldier could use numerous medical services, including tests, physician visits and medicines, without this affecting the cost of treatment for the IDF. This payment method allows maintaining a budgetary framework but requires the HMOs to continue ensuring informed medical activity and curb unnecessary consumption, as they do in treating the civilian population.

Clause 55 of the National Health Insurance Law states that "Every soldier shall be entitled to receive medical services from the IDF Medical Corps or from any other party acting on behalf thereof." The scope of the health services IDF soldiers are entitled to is not stated in this clause. The silence of the legislator left the discretion regarding the scope of the health services basket provided to IDF soldiers, to the Medical Corps and its head, the Chief Medical Officer, who by virtue of this law, is in charge of the army's medical services [13].

In practice, the medical basket provided to the soldiers is more extensive than that to civilians due to professional - medical considerations regarding special issues stemming from military service. The extensive basket agreed on between Meuhedet and the IDF included numerous medicines that were not included in the basic basket for civilians and 42 orthopedic accessories, for which, under the Health Insurance Law, civilians pay a high copayments reaching hundreds of shekels.

As a result, and as part of the process, the soldiers received all the health services they needed from the HMO without copayments including: family medicine, specialists, emergency medical services, hospitalizations, medicines, laboratory tests, imaging scans, physiotherapy and medical equipment.

The medical services were provided at the HMO branches near to the soldier's home or place of duty, based on the soldier's choice and the HMO clinic's business hours [14]. In addition, the soldiers were awarded exemption of payment of the medical services fee as opposed to civilians, who pay a copayment for a large proportion of the services they use. Note that the inability to charge copayments from soldiers prevents the service provider from using this tool to curb the consumption of health services. The studies we reviewed dealt with the advisability of outsourcing when the comparison is between the provision of medical services from military facilities and military physicians, as opposed to the provision of services to soldiers by civilian facilities and civilian physicians. These studies focus on differences in costs to the military system and on soldiers' satisfaction with outsourcing. The present study deals with outsourcing from a different angle and relates to the issue of differences in costs between soldiers and civilians in the same age group and discusses variables which can explain this phenomenon. We added this paragraph at the end of the background and the literature review section.

Study Objectives

The main objective of this study was to examine the utilization of medical services provided by the HMO by active army soldiers in comparison to the utilization of the civilian population of similar age insured by the HMO.

The specific objectives were:

1. Comparison of consumption of medical services between male and female 18-21 year old soldiers and their civilian counterparts
2. Comparison of consumption of medical services between male and female 22-24 year old army soldiers and their civilian population counterparts.
3. Comparison of consumption of medical services among soldiers in different age groups, 18-21 year old active duty soldiers and 22-24 year old professional soldiers.

Methodology

Study methods

A cross-sectional study comparing consumption of medical services between soldiers included in the Aviv Project and the civilian population in 2012, all of them being served by Meuhedet. The medical services included in the study were: family physicians, specialists (gynecology separately), visits to hospitals emergency departments, days of hospitalization, DRG, out-clinics, X rays, physiotherapy, CT, MRI, prescriptions and the number of physician visits ending with and without a prescription, laboratory tests and the number of sick days given to the soldiers.

Study population

The military population included 3,403 IDF soldiers (ages 18-21) and 1,127 soldiers at the beginning of their service in the professional army (ages 22-24), who were ascribed to Meuhedet over the course of 2012. The soldiers served at the IDF headquarters at Tel Aviv (the Kirya) but lived all over the country.

The civilian population included 18-24 year old Meuhedet insurees, who do not have disabilities, congenital malformations and mental illnesses and who reside in households. The final sample of Meuhedet civilian insurers included 5,209 insurers from the Dan and Petah Tikva

region, excluding as Arabs and ultra-orthodox Jews. The choice of the Dan and Petah Tikva region was made in order to keep the supply of services and their accessibility constant over the two groups.

Only soldiers and civilians with over 300 days of registration (soldiers serving over 300 days) were included, however the consumption data is inflated to a full year (365 days).

Data analysis

Using SPSS software, we used mean comparison and Independent samples T-Test with 5% confidence level.

Results

Table 1 presents the results of the comparison between the

consumption of male and female active duty IDF soldiers to that of their male and female civilian contemporaries (18-21) respectively. In general, whenever there is a significant difference in consumption – the military personnel tend to consume considerably more services than their civilian counterparts. We note that in order to make sure that no bias is caused by focusing on non-enlisted (to the IDF) civilian population aged 18-21, we also conducted a comparison between the active-duty military personnel and 22-24 year old veterans. The results are similar to those shown in Table 1 and are not presented (Table 1).

Male civilians visit their primary care physicians on average 3.84 times a year and 53% of the visits end without a prescription (a possible indication of the low necessity of the visit). Male soldiers visit 9.27 times, 2.4 times as often as the civilians, with 43% of the

	civilian population n=1078	soldiers n=1465	p-value	civilian population n=1301	soldiers n=1938	p-value
Number	AVG , (SD)	AVG , (SD)		AVG ,(SD)	AVG , (SD)	
<u>Visits to physicians</u>						
Primary care physicians	3.84 (4.09)	9.27 (8.38)	0	4.98 (4.61)	12.6 (9.73)	0
Primary care physicians- ending without a prescription	2.04 (2.41)	3.99 (4.41)	0	2.19 (2.42)	4.51 (4.88)	0
Secondary care physicians	2.15 (3.02)	4.27 (5.11)	0	2.43 (4.29)	4.36 (4.77)	0
Gynecologists				1.45 (2.40)	2.20 (2.59)	0
Secondary care physicians ending without a prescription	1.23 (2.14)	2.2 (3.05)	0	1.30 (3.14)	2.06 (2.75)	0
Gynecologists - ending without a prescription				0.39 (1.21)	0.40 (0.95)	0.83
Number of visits to outpatient clinics	0.18 (0.93)	0.23 (0.87)	0.16	0.17 (1.19)	0.16 (0.71)	0.7
<u>Hospitalization</u>						
Contact call center	0.16 (0.56)	1.10 (2.91)	0	0.29 (0.98)	1.15 (2.47)	0
Emergency department	0.20 (0.51)	0.26 (0.63)	0.01	0.19 (0.52)	0.27 (0.66)	0
Number of hospitalization	0.17 (2.13)	0.16 (1.20)	0.79	0.11 (0.89)	0.09 (0.67)	0.58
PTCA	0 (0)	0.00 (0.02)	0.39	0 (0)	0.00 (0.02)	0.41
Cholecystectomy	0 (000)	0 (000)	#N/A	0 (0)	0.00 (0.02)	0.41
Adenoids	0.00 (0.03)	0 (0)	0.24	0 (000)	0 (000)	#N/A
Hernia	0.00 (0.03)	0 (0)	0.24	0 (000)	0 (000)	#N/A
Appendectomy	0.00 (0.04)	0.00 (0.03)	0.69	0.00 (0.02)	0.00 (0.08)	0.1
<u>Other ambulatory services</u>						
Ambulatory operations	0.40 (4.54)	0.17 (1.03)	0.05	0.35 (3.46)	0.16 (1.26)	0.03
X - ray Internal Institutes	0.19 (0.56)	0.37 (0.80)	0	0.15 (0.48)	0.30 (0.74)	0
CT- Internal Institutes	0 (0)	0.00 (0.04)	0.23	0 (0)	0.00 (0.06)	0.05
Physiotherapy treatments Internal Institutes	0.44 (2.33)	0.65 (3.38)	0.08	0.21 (1.38)	0.55 (2.43)	0
X - ray External institutes	0.04 (0.34)	0.07 (0.35)	0.1	0.03 (0.27)	0.05 (0.41)	0.13
CT External institutes	0.03 (0.20)	0.02 (0.16)	0.5	0.02 (0.14)	0.02 (0.17)	0.21
MRI External institutes	0.02 (0.20)	0.03 (0.25)	0.16	0.01 (0.18)	0.02 (0.23)	0.15
CT PET External institutes	0 (000)	0 (000)	#N/A	0.00 (0.05)	0.00 (0.02)	0.47
Physiotherapy treatments External Institutes	0.02 (0.48)	0.19 (1.54)	0	0.04 (0.79)	0.20 (1.49)	0
Lab labels	0.67 (1.23)	1.21 (1.69)	0	1.37 (1.74)	2.24 (2.26)	0
<u>Medicines</u>						
MOXPEN FORTE 500MG 10CAP	0.04 (0.22)	0.16 (0.47)	0	0.09 (0.32)	0.25 (0.58)	0
YASMIN 21TAB	0 (000)	0 (000)	#N/A	0.05 (0.59)	0.47 (2.06)	0
AUGMENTIN BID. 875MG 14TA	0.06 (0.31)	0.15 (0.47)	0	0.08 (0.34)	0.16 (0.48)	0
FEMINET 63TAB	0 (000)	0 (000)	#N/A	0.17 (0.70)	0.41 (1.10)	0
FLIXONASE SPR 0.05% 120DO	0.04 (0.32)	0.14 (0.59)	0	0.05 (0.27)	0.12 (0.45)	0
PRAMIN 10MG 30TAB	0.01 (0.10)	0.11 (0.38)	0	0.03 (0.19)	0.21 (0.54)	0
ESTELLE 35 21TAB	0 (000)	0 (000)	#N/A	0.19 (1.17)	0.33 (1.75)	0.01
MINESSE 84 TAB (NEO) 84T	0 (000)	0 (000)	#N/A	0.09 (0.48)	0.36 (1.07)	0
OMEPRADEx 20MG 30CAP	0.01 (0.16)	0.07 (0.37)	0	0.05 (0.44)	0.12 (0.50)	0
HARMONET 3X21 (NEO) 63TAB	0.01 (0.16)	0.07 (0.37)	0	0.05 (0.44)	0.12 (0.50)	0

Table 1: Comparison of consumption of medical services between male and female 18-21 year old soldiers and their civilian counterparts.

visits ending without a prescription. In other words, male soldiers visit their primary care physician more often than male civilians do, and the physicians gives them more prescriptions than they give civilians. A similar picture exists in the female population: 4.98 visits on average per year among the female civilians (44% of them ending without a prescription), and the female soldiers visit 2.5 times more often - 12.6 visits a year (with 36% of the visits ending without a prescription).

On average, male civilians visit secondary care physicians 2.15 times a year, with 57% of the visits ending without a prescription. Among the soldiers, the numbers are 4.27 and 52% respectively. Female civilians visit secondary care physicians 3.88 times a year (with 44% of the visits ending without a prescription). Female soldiers visit 6.56 times a year, with 38% of the visits ending without a prescription.

No significant differences were found in the number of visits to outpatient clinics among the men or among the women.

Military personal tend to contact the call center more than civilians do. Male civilians contact the call center on average 0.16 times whereas male soldiers - seven times more (1.1 times). Female civilians contact the call center on average 0.29 times whereas female soldiers four times more (1.15 times). Both male and female soldiers make more visits to the emergency department - 0.26 visits on average among male soldiers and 0.27 visits among female soldiers as opposed to 0.2 and 0.19 among male and female civilians respectively.

Compared to the dramatic differences in physician visits and use of the call center, no differences were found in the use of hospitalization services, the number of hospitalization days, or selected surgical procedures during hospitalization.

female			male			
p-value	soldiers	civilian population	p-value	soldiers	civilian population	
	330	1479		797	1351	Number
						<u>Visits to physicians</u>
0.00	7.82 (6.14)	4.82 (4.33)	0.00	5.98 (6.77)	3.16 (3.41)	Primary care physicians
0.00	2.67 (2.58)	1.92 (2.17)	0.00	2.41 (3.30)	1.56 (1.86)	Primary care physicians- ending without a prescription
0.00	3.74 (3.88)	2.60 (4.15)	0.00	3.44 (6.80)	2.09 (3.05)	Secondary care physicians
0.38	2.57 (2.84)	2.42 (3.04)				Gynecologists
0.04	1.77 (2.54)	1.39 (3.23)	0.00	1.95 (5.86)	1.19 (2.21)	Secondary care physicians ending without a prescription
0.10	0.56 (1.41)	0.74 (1.89)				Gynecologists - ending without a prescription
0.75	0.21 (0.86)	0.19 (1.20)	0.00	0.24 (0.86)	0.14 (0.73)	Number of visits to outpatient clinics
						<u>Hospitalization</u>
0.00	0.63 (1.43)	0.28 (0.71)	0.00	0.40 (1.33)	0.11 (0.42)	Contact call center
0.86	0.24 (0.62)	0.23 (0.63)	0.01	0.15 (0.42)	0.23 (0.85)	Emergency department
0.86	0.15 (0.91)	0.17 (1.75)	0.15	0.06 (0.38)	0.10 (0.59)	Number of hospitalization
0.50	0 (0)	0.00 (0.03)	#N/A	0(0)	0 (.000)	Cholecystectomy
#N/A	0 (000)	0 (.000)	0.19	0.00 (0.04)	0 (0)	Hernia
0.50	0.00 (0.05)	0.00 (0.03)	0.19	0.00 (0.03)	0 (0)	Appendectomy
						<u>Other ambulatory services</u>
0.15	0.42 (4.07)	0.21 (1.87)	0.84	0.17 (1.19)	0.19 (2.27)	Ambulatory operations
0.00	0.26 (0.61)	0.13 (0.46)	0.04	0.28 (0.66)	0.22 (0.65)	X - ray Internal Institutes
0.03	0.00 (0.05)	0 (0)	0.20	0.00 (0.07)	0.00 (0.02)	CT- Internal Institutes
0.14	0.47 (2.08)	0.31 (1.72)	0.02	0.74 (2.88)	0.46 (2.44)	Physiotherapy treatments Internal Institutes
0.08	0.04 (0.27)	0.02 (0.17)	0.45	0.04 (0.26)	0.03 (0.28)	X - ray External institutes
0.36	0.03 (0.19)	0.02 (0.18)	0.15	0.02 (0.19)	0.04 (0.23)	CT External institutes
0.01	0.05 (0.32)	0.01 (0.19)	0.17	0.03 (0.27)	0.02 (0.17)	MRI External institutes
0.03	0.00 (0.05)	0 (0)	#N/A	0 (.000)	0 (000)	CT PET External institutes
0.66	0.04 (0.68)	0.03 (0.47)	0.01	0.13 (1.09)	0.03 (0.80)	Physiotherapy treatments External Institutes
0.00	2.22 (2.17)	1.68 (2.28)	0.00	1.03 (1.53)	0.69 (1.46)	Lab labels
						<u>Medicines</u>
0.00	0.17 (0.42)	0.10 (0.37)	0.00	0.14 (0.44)	0.05 (0.25)	MOXPEN FORTE 500MG 10CAP
0.00	0.57 (2.32)	0.06 (0.43)	#N/A	0 (000)	0 .000)	YASMIN 21TAB
0.19	0.11 (0.41)	0.08 (0.35)	0.42	0.09 (0.35)	0.08 (0.35)	AUGMENTIN BID. 875MG 14TA
0.33	0.43 (1.15)	0.37 (1.04)	#N/A	0 (000)	0 (000)	FEMINET 63TAB
0.00	0.14 (0.52)	0.05 (0.29)	0.00	0.15 (0.71)	0.03 (0.21)	FLIXONASE SPR 0.05% 120DO
0.00	0.13 (0.36)	0.04 (0.23)	0.00	0.08 (0.30)	0.01 (0.13)	PRAMIN 10MG 30TAB
0.26	0.32 (1.78)	0.22 (1.33)	#N/A	0 (000)	0 (.000)	ESTELLE 35 21TAB
0.00	0.34 (1.05)	0.14 (0.61)	#N/A	0 (000)	0 (000)	MINESSE 84 TAB (NEO) 84T
0.00	0.13 (0.87)	0.04 (0.38)	0.08	0.08 (0.69)	0.04 (0.43)	OMEPRADEx 20MG 30CAP
0.00	0.13 (0.87)	0.04 (0.38)	0.08	0.08 (0.69)	0.04 (0.43)	HARMONET 3X21 (NEO) 63TAB

Table 2: Comparison of consumption of medical services between male and female 22-24 year old army soldiers and their civilian population counterparts.

While no differences were found between military personnel of both genders and civilians of both genders in the number of MRIs CTs and PET-CTs, soldiers of both genders underwent X-rays, physical therapy and laboratory tests approximately twice as much as civilians of both genders. On average, male civilians had 0.23 X-rays per year (at in-house and external facilities), as opposed to 0.44 X-rays among the male soldiers. Among the women, the numbers are 0.18 and 0.35 respectively.

We previously stated that soldiers of both genders make relatively many physician visits and frequent use of the call center, and that a larger part of the visits end with a prescription. An examination of the quantities of medicines issued to soldiers of both genders indicates that they consume significantly more medicines than their civilian counterparts (Table 1).

Table 2 presents the results of the comparison between the 22-24 year old (professional) military personnel and civilians of the same age, for both genders. The military personnel are soldiers at the beginning of their professional army service, and the civilians also include the recently discharged active-duty soldiers. In general, the comparative results obtained here are similar to those obtained in the comparison of the 18-21 year olds (Table 1), although at times, in a slightly less significant manner (note that the samples of male and female soldiers are slightly smaller in this analysis).

Table 3 compares the consumption of health services of active-duty soldiers (ages 18-21) to that of professional army personnel (ages 22-24) according to gender. In general, with the exception of primary and secondary care, where the active duty soldiers' consumption is higher than that of the professional army personnel, no significant differences were found in the consumption of health services. In addition, it was

p-value	female		p-value	male		Number
	Soldiers 1938	civilian population 1479		Soldiers 1465	civilian population 1351	
						<u>Visits to physicians</u>
0.00	12.6 (9.73)	4.82 (4.33)	0.00	9.27 (8.38)	3.16 (3.41)	Primary care physicians
0.00	4.51 (4.88)	1.92 (2.17)	0.00	3.99 (4.41)	1.56 (1.86)	Primary care physicians- ending without a prescription
0.00	4.36 (4.77)	2.60 (4.15)	0.00	4.27 (5.11)	2.09 (3.05)	Secondary care physicians
0.02	2.20 (2.59)	2.42 (3.04)				Gynecologists
0.00	2.06 (2.75)	1.39 (3.23)	0.00	2.2 (3.05)	1.19 (2.21)	Secondary care physicians ending without a prescription
0.00	0.40 (0.95)	0.74 (1.89)				Gynecologists - ending without a prescription
0.33	0.16 (0.71)	0.19 (1.20)	0.00	0.23 (0.87)	0.14 (0.73)	Number of visits to outpatient clinics
						<u>Hospitalization</u>
0.00	1.15 (2.47)	0.28 (0.71)	0.00	1.10 (2.91)	0.11 (0.42)	Contact call center
0.09	0.27 (0.66)	0.23 (0.63)	0.18	0.26 (0.63)	0.23 (0.85)	Emergency department
0.08	0.09 (0.67)	0.17 (1.75)	0.11	0.16 (1.20)	0.10 (0.59)	Number of hospitalization
0.38	0.00 (0.02)	0 (0)	0.34	0.00 (0.02)	0 (0)	PTCA
0.50	0.00 (0.02)	0.00 (0.03)	#N/A	0 (000)	0 (000)	Cholecystectomy
0.14	0.00 (0.08)	0.00 (0.03)	0.17	0.00 (0.03)	0 (0)	Appendectomy
						<u>Other ambulatory services</u>
0.36	0.16 (1.26)	0.21 (1.87)	0.72	0.17 (1.03)	0.19 (2.27)	Ambulatory operations
0.00	0.30 (0.74)	0.13 (0.46)	0.00	0.37 (0.80)	0.22 (0.65)	X - ray Internal Institutes
0.04	0.00 (0.06)	0 (0)	0.56	0.00 (0.04)	0.00 (0.02)	CT- Internal Institutes
0.00	0.55 (2.43)	0.31 (1.72)	0.09	0.65 (3.38)	0.46 (2.44)	Physiotherapy treatments Internal Institutes
0.01	0.05 (0.41)	0.02 (0.17)	0.00	0.07 (0.35)	0.03 (0.28)	X - ray External institutes
0.90	0.02 (0.17)	0.02 (0.18)	0.02	0.02 (0.16)	0.04 (0.23)	CT External institutes
0.31	0.02 (0.23)	0.01 (0.19)	0.12	0.03 (0.25)	0.02 (0.17)	MRI External institutes
0.38	0.00 (0.02)	0 (0)	#N/A	0 (000)	0 (000)	CT PET External institutes
0.00	0.20 (1.49)	0.03 (0.47)	0.00	0.19 (1.54)	0.03 (0.80)	Physiotherapy treatments External Institutes
0.00	2.24 (2.26)	1.68 (2.28)	0.00	1.21 (1.69)	0.69 (1.46)	Lab labels
						<u>Medicines</u>
0.00	0.25 (0.58)	0.10 (0.37)	0.00	0.16 (0.47)	0.05 (0.25)	MOXYPEN FORTE 500MG 10CAP
0.00	0.47 (2.06)	0.06 (0.43)	#N/A	0 (000)	0 (000)	YASMIN 21TAB
0.00	0.16 (0.48)	0.08 (0.35)	0.00	0.15 (0.47)	0.08 (0.35)	AUGMENTIN BID. 875MG 14TA
0.23	0.41 (1.10)	0.37 (1.04)	#N/A	0 (000)	0 (000)	FEMINET 63TAB
0.00	0.12 (.45)	0.05 (0.29)	0.00	0.14 (0.59)	0.03 (0.21)	FLIXONASE SPR 0.05% 120DO
0.00	0.21 (0.54)	0.04 (0.23)	0.00	0.11 (0.38)	0.01 (0.13)	PRAMIN 10MG 30TAB
0.04	0.33 (1.75)	0.22 (1.33)	#N/A	0 (000)	0 (000)	ESTELLE 35 21TAB
0.00	0.36 (.07)	0.14 (0.61)	#N/A	0 (000)	0 (000)	MINESSE 84 TAB (NEO) 84T
0.00	0.12 (0.50)	0.04 (0.38)	0.08	0.07 (0.37)	0.04 (0.43)	OMEPRADEx 20MG 30CAP
0.00	0.12 (0.50)	0.04 (0.38)	0.08	0.07 (0.37)	0.04 (0.43)	HARMONET 3X21 (NEO) 63TAB

Table 3: Comparison of consumption of medical services among soldiers in different age groups, 18-21 year old active duty soldiers and 22-24 year old professional soldiers.

also found that the number of sick days used by the active-duty army personnel is significantly higher than those used by professional army personnel.

Discussion

The National Health Insurance Law distinguishes between the health services basket offered to residents of Israel and the health services basket offered to IDF soldiers. The basket offered to military personnel is determined by the IDF. The two baskets differ in both the variety of services covered and in the copayments charged. The findings indicate that there is a big difference in the consumption of health services between soldiers and their civilian counterparts, with a clear tendency on the part of the military personnel - and especially those in the active-duty army - to consume significantly more health services.

The question that arises is what causes military personnel, and particularly active-duty soldiers of both genders, to use more health services? It is unlikely that the reason lies in the fact that military personnel have poorer health than their civilian counterparts. It is true that the military personnel included in the study served in non-combat positions, but it is likely that their health is no worse than that of their non-serving peers. In fact, in light of the selection the IDF conducts during the recruitment process one would expect that the health of soldiers would be better than that of those who did not serve in the army.

Therefore, the causes for the higher use of health care by the soldiers must lie elsewhere. First, the time cost of the soldiers included in the study is lower than that of their civilian peers, who have civilian jobs and may be married with small children and are less flexible in terms of absences from work.

Second, military personnel do not pay copayments for the consumption of secondary care, tests, imaging and medicines. The moral hazard phenomenon predicts that lower priced health care services (both in terms of copayments and in terms of the value of time) will increase consumption. In fact, copayments are imposed in order to prevent moral hazard. The size of the copayment (or lack of them) imposed on the consumption of health services traditionally impacts the demand: as aforementioned, higher priced services will result in a decrease of consumption. However, one can assume that the lack of copayments for military personnel also affects the physicians' prescription and referral practices: physicians treating military personnel may tend to increase referrals to additional tests and prescribe medicines because they know these patients are exempt from paying copayments.

Third, it is possible that some of the visits made by active-duty army personnel to primary care physicians are made with the aim of obtaining sick leave. Unfortunately, we do not have comparative data regarding the civilians' physician-approved sick leave.

In terms of health policy, the implications of these results indicate that as part of the outsourcing of health services for military personnel, if the HMO is remunerated according to the capitation formula both for civilians and for military personnel, its income per service recipient - soldier or civilian - of the same age and gender group is identical. Since military personnel consume more health services than civilians, the HMO makes less profit (or incurs in a larger loss) on military personnel. Since military personnel can be easily identified, the HMO may have an incentive to discriminate against them.

Conclusion

The outsourcing of health services for military personnel - and primarily those serving in non-combat positions - to civilian providers such as HMOs may prove, as previous studies have shown, to be efficient and economical in terms of the provision of care. The setup and maintenance costs of a military health services system for a relatively small number of soldiers is generally higher than the marginal cost of providing military personnel with health services through an existing system that provides health services to civilians. However, if the military health basket is more extensive than the civilian one, and if services provided to military personnel with no copayments, and since the value of military personnel's time is lower than that of civilians - the average medical expense for military personnel may be higher than that for civilians from the identical age group and gender. This sizable expense could be a waste of resources, namely, the resulting health value is low. In addition, if the outsourcing is carried out according to a capitation formula that does not distinguish between soldiers and civilians, which determines the HMO's consideration for its civilian patients, on average, military personnel would constitute a certain loss for the HMO. In order to maintain the outsourcing of medical services for military personnel by the HMO, either the HMO's revenue on their account must be higher or a system curbing their consumption of medical services must be put in place.

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