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The economic justification of running the online medical care in high schools 2

Abstract

Introduction: Online Medicare is a method in which parts of a medical process, whether diagnostics, monitoring or treatment itself, will be done by using online services. The website (www.hooshdar.com) is an effort to bring fairness in health to people across the globe using modern methods. We choose psychiatric disorder depression and anxiety to be our focus in phase one. With this system we can search for psychiatric problems of several persons in schools, factories or other organs, and create psychiatric profiles for them. With this system we can find out who needs lab exams, and by feeding the results to the system, we can create a medical and psychiatric profile for each person.

i. In order to find out system's feasibility we need to know the following:

ii. Is there a large enough demand for the system or not?

iii. Are the potential users of the system prepared to pay for it?

iv. What are the specifications of users who are prepared to pay for the services?

Method: We examined the system in three high schools, A state high school in Fardis Karaj (Lower middle class neighborhood), A state high school in Gohardasht Karaj (above average neighborhood), and A private high school in Gohardasht Karaj (above average neighborhood. We examined the system to find out its economical justification, we found out that each applicant student must pay 7$ for using the system and its benefits for the system to be profitable.

The advantages of using the system:

i. Free visit by a physician, if needed.

ii. Free visit by a psychiatrist, if needed.

iii. Fifty percent off in price of lab examination, if needed.

Expect in deprived area, the students divided in to two groups: Group one: the ones who participated in using the system and its advantages, every one paid 7$. Group two: the ones who participated in using the system without using the advantages, they paid nothing. In both groups the prevalence of depression and anxiety, and their severity were measured.

Results: The severity of depression in two groups show: In the state high schools, not only in Lower middle class neighborhood ,but also in above average neighborhood, need for medical and psychological attendance between the ones who paid for using the system and the ones who did not pay is significant with P value $0.031 < 0.05$ & P value $0.005< 0.05$. In private high school: Needs for medical and psychological attendance between the ones who paid for using the system and the ones who did not pay is not significant with P value $0.940 < 0.05$.

Conclusion: The data show that in the state high schools in Lower middle class neighborhood & above average neighborhood, the more is the need for medical psychological services, the more is the interest for paying for it. Thus for operating the system in different neighborhoods, different ways must be used.

For example: In deprived neighborhoods: running the system without financial support for performing lab examination is not possible1. In state high schools, when we present the system to ones who are motivated to receive this attendance and accept to pay for it, we get the best results. In private high school, there is no problem for performing lab examination for all of the students, and then giving medical, psychological and psychiatric services to ones who are motivate.

The economic justification of running the online medical care (www.hooshdar.com) in high schools

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Introduction

Online Medicare is a method in which parts of a medical process, whether it's diagnosing, monitoring or the treatment itself, will be done by using online services. The system in the website (www.hooshdar.com) is an effort to bring fairness in health to people across the globe using modern methods. We choose psychiatric disorder depression and anxiety to be our focus in phase one.

Why we chose depression and anxiety in the first line of online Medicare?

I. The prevalence; The global mean prevalence for depression is about %17 in the life period.[1]This is about %14 to %24 in adolescent.[2] The global mean for anxiety is %25 in total.[3] It is %30.5 in women and %19.2 in men.[3]

II. The second reason for this choice is the morbidities that can be caused by these two diseases. Depression & anxiety can cause decrease in concentration that will reduce interest in doing homework. It can cause fatigue and drowsiness, all of which cause academic failure.[4] Depression can cause antisocial behavior in adults; disobedience of rules is its consequence.[5] It can cause conduct disorder in adolescents too [4]. It can increase the chance of addiction to opium or alcohol.[4] Conduct disorders can cause following problems in adolescents: aggressive behavior causing bodily harm to oneself or others, destruction of property, theft and fraud, disturbing law and order related to their age.[6]

III. Neither depression nor anxiety does not always occur spontaneously, in many cases they are created because of some other diseases, such as diabetes or hypo or hyperthyroidism.[7]

Thus, if we can diagnose depression & anxiety, finally we can find the medical diseases which trigger them. Then we can use a plan for a combined treatment. By this way we can prevent many academic failure and aggressive behavior in the high schools.

For finding the main diseases which should be considered:

First, I considered the 13 to 19year old depressed or anxious patients, who were referred to my personal office for medical disorders, they showed:

Hypothyroidism (%11.1), Impaired GTT (%8.33), Reactive hypoglycemia (%5.5), Hypocalcemia (%13.88), Vitamin b12 deficiency (%38.88), Poly cystic ovary(%2,52), Thalassemia (%2.52).

After this research it was decided to search Hypothyroidism, vitamin B12 deficiency, Hypocalcemia, diabetes, impaired fasting glucose level, hypoglycemia, and anemia in persons, who were presented for lab examination by the system. After two years it was decided to change hypocalcaemia with vitamin D deficiency.

With Ministry of Education's permission, we decided to operate this system in high schools. As pilot study, we operated the system in one state high school in lower middle class neighborhood, one state high school in above average neighborhood and one private high school in above average neighborhood .In deprived area, the economical justification had been done in previous study8. Participating in this program was neither mandatory nor free, thus the results cannot be generalized, but it can show the relationship between depression and anxiety with medical diseases in Iran and the effectiveness of operating the system in schools in decreasing these two problems.

Methods

Feasibility of study

Production of each product must be economically justifiable.

Thus, how can we earn money with the system?

The economic use of the system

With this system we can search psychiatric problems of several persons in schools, factories or organs, and create psychiatric profiles for them, with the system we can find out who needs lab exams, and by feeding the results to the system, we can create a medical and psychiatric profile for each person.

In order to find out system's feasibility we need to know the following:

i. Is there a large enough demand for the system or not?

ii. Are the potential users of the system prepared to pay for it?

iii. What are the specifications of users who are prepared to pay for the services?

In high schools we examined the system to find out its economical justification, we found out that each applicant student must pay 7$ for using the system and its benefits for the system to be profitable.

The advantages of using the system:

i. Free visit by a physician, if needed.

ii. Free visit by a psychiatrist, if needed.

iii. Fifty percent off in price of lab examination, if needed.

The students divided in to two groups:

i. Group one: the ones who participated in using the system and its advantages, every one paid 7$.

ii. Group two: the ones who participated in using the system without using the advantages, they paid nothing.

In both groups the prevalence of depression and anxiety, and their severity were measured.

Results

The results are studied in four subjects

a. Severity of depression in participants who accepted to pay for project.

b. Severity of anxiety in participant who accepted to pay for the project.

c. Severity of depression in participants who did not accept to pay for project.

d. Severity of anxiety in participant who did not accept to pay for the project (Table 1- 5).

Statistical results for anxious patients in a state high school in Fardis Karaj (lower middle class neighborhood)

Needs for medical and psychological attendance between the ones who paid for using the system and the ones who did not pay is significant with P value 0.001>0.05 (Table 6).

Statistical results for depressed patients in a state high school in Fardis Karaj (lower middle class neighborhood)

Needs for medical and psychological attendance between the ones who paid for using the system and the ones who did not pay is significant with P value 0.031>0.05.

The data show that in the state high school in middle economic class area the more is the need for medical services, the more is the interest in paying for it. How to run the system and how much is charged, can naturally absorb the ones who need the services more (Table 7-11).

Citation: Houshdar M.The economic justification of running the online medical care in high schools 2.*J Psychol Clin Psychiatry.* 2015;3(2):11–12. DOI: 10.15406/jpcpy.2015.03.00129

Table 1 Severity of depression and the consequent needs of students who participated in project by paying money.A state high school in Fardis Karaj (Lower middle class neighborhood)

Normal	Severe Depression Refer to Psychiatrist & Psychologist Doing lab exam	Moderately Severe Depression Refer to psychiatrist Performing lab exam	Moderate Depression Refer to Psychologist Performing Lab Exam	Mild Depression Supportive Therapy	Total Participant
17	15	20	30	27	109
15.60%	13.80%	18.30%	27.5%	24.7%	

Table 2 Severity of anxiety and the consequent needs of students who participated in project by paying money. A state high school in Fardis Karaj (Lower middle class neighborhood)

Normal	Severe Anxiety refer to Psychiatrist & Psychologist Doing Lab Exam	Moderately Severe Anxiety Refer to Psychiatrist Performing Lab Exam	Moderate Anxiety refer to Psychologist Performing Lab Exam	Mild Anxiety Supportive Therapy	Total Participant
19	0	21	35	34	109
17.4%	0%	19.2%	32.1%	31.2%	

Table 3 Severity of depression and the consequent needs of students who participated in project without paying money. A state high school in Fardis Karaj (Lower middle class neighborhood)

Normal	Severe Depression Refer to Psychiatrist & psychologist Doing lab exam	Moderately severe Depression Refer to Psychiatrist Performing lab exam	Moderate Depression refer to Psychologist Performing lab exam	Mild depression Supportive Therapy	Total Participant
69	12	21	37	87	227
30.3%	5.2.%	9.2%	16.2%	38.3%	

Table 4 Severity of anxiety and the consequent needs of students who participated in project without paying money.A state high school in Fardis Karaj (Lower middle class neighborhood)

Normal	Severe Anxiety Refer to Psychiatrist & Psychologist Doing Lab Exam	Moderately Severe Anxiety refer to Psychiatrist Performing Lab Exam	Moderate Anxiety Refer to Psychologist Performing Lab Exam	Mild Depression Supportive Therapy	Total Participant
90	3	11	43	72	233
	5.2.%	9.2%	16.2%	38.3%	
		Group One		**Group Two**	
Need for lab. Exams.		%51.2		%24.5	
consultation With a psychologist Need for		%32.1		%18.4	
Need for consultation with a psychiatrist		%19.2		%4.7	
Need for consultation with both		%0		%1.3	

Table 5 The difference on need to services between two groups in anxiety in , A state high school in Fardis Karaj (Lower middle class neighborhood)

	Group One	Group Two
Need for lab. Exams.	%59.6	%30.8
consultation With a psychologist Need for	%27.5	%16.2
Need for consultation with a psychiatrist	%18.3	%9.2
Need for consultation with both	%13.7	%5.2

Table 6 The difference on need to services between two groups in depression in, A state high school in Fardis Karaj (Lower middle class neighborhood)

Normal	Severe Depression Refer to Psychiatrist & psychologist Doing Lab Exam	Moderately Severe depression Refer to psychiatrist Performing Lab Exam	Moderate Depression Refer to Psychologist Performing Lab Exam	Mild depression Supportive Therapy	Total Participant
36	3	11	20	43	112
%32.1	%2.6	%9.8	%17.8	%38.3	%100

Citation: Houshdar M.The economic justification of running the online medical care in high schools 2. *J Psychol Clin Psychiatry.* 2015;3(2):11–12. DOI: 10.15406/jpcpy.2015.03.00129

Table 7 Severity of depression and the consequent needs of students who participated in project by paying money. A state high school in Gohardasht Karaj, above average neighborhood

Normal	Severe Anxiety refer to Psychiatrist & Psychologist Doing Lab Exam	Moderately Severe Anxiety refer to Psychiatrist Performing Lab Exam	Moderate Anxiety refer to Psychologist Performing Lab Exam	Mild Anxiety Supportive Therapy	Total Participant
43	1	4	17	48	113
%38	%0.8	%3.5	%15	%42.4	%100

Table 8 Severity of anxiety and the consequent needs of students who participated in project by paying moneyA state high school in Gohardasht Karaj (above average neighborhood)

Normal	Severe Depression refer to Psychiatrist & Psychologist Doing Lab Exam	Moderately Severe Depression refer to Psychiatrist Performing Lab Exam	Moderate Depression refer to Psychologist Performing Lab Exam	Mild Depression Supportive Therapy	Total Participant
107	9	18	39	88	261
%40.9	%3.4	%6.9	%14.9	%33.7	%100

Table 9 Severity of depression and the consequent needs of students who participated in project without paying moneyA state high school in Gohardasht Karaj (above average neighborhood)

Normal	Severe Anxiety refer to Psychiatrist & Psychologist Doing Lab Exam	Moderately Severe Anxiety refer to Psychiatrist Performing Lab Exam	Moderate Anxiety refer to Psychologist Performing Lab Exam	Mild Depression Supportive Therapy	Total Participant
120	5	10	26	100	261
%45.9	%1.9	%3.8	%9.96	%38.3	%100

Table 10 Severity of anxiety and the consequent needs of students who participated in project without paying money. A state high school in Gohardasht Karaj (above average neighborhood)

	Group 2	Group 1
No need for medical or Psychological attendance	%70.53	%74.51
Need for lab exams	%32.14	%25.28
Need for consultation with a psychiatrist	%17.8	%14.9
Need for consultation with a psychologist	%9.8	%6.9
Need for consultation with both	%2.6	%3.4

Table 11 The difference on need to services between two groups in depression in the a state high school in Gohardasht Karaj (above average neighborhood)

	Group 2	Group 1
No need for medical or Psychological attendance	%79.13	%84.29
Need for lab exams	%19.46	%15.70
Need for consultation with a psychiatrist	%15	%9.96
Need for consultation with a psychologist	%3.5	%3.8
Need for consultation with both	%0.8	%1.9

Statistical results for depressed patients in a state high school in Gohardasht Karaj (above average neighborhood)

Needs for medical and psychological attendance between the ones who paid for using the system and the ones who did not pay is significant with P value 0.005>0.05 (Table 12).

Statistical results for anxious patients in a state high school in Gohardasht Karaj (above average neighborhood)

Needs for medical and psychological attendance between the ones who paid for using the system and the ones who did not pay is not significant with P value 0.987>0.05.

The data show that in the state high school in middle economic class area the more is the need for medical services, the more is the interest in paying for it. How to run the system and how much is charged, can naturally absorb the ones who need the services more (Table 13-17).

Statistical results for depressed patients in a private high school in Gohardasht Karaj (above average neighborhood)

Needs for medical and psychological attendance between the ones who paid for using the system and the ones who did not pay is not significant with P value 0.940>0.05 (Table 18).

Statistical results for anxious patients in a private high school in Gohardasht Karaj (above average neighborhood)

Needs for medical and psychological attendance between the ones who paid for using the system and the ones who did not pay is not significant with P value 0.914>0.05.

Citation: Houshdar M. The economic justification of running the online medical care in high schools 2. *J Psychol Clin Psychiatry.* 2015;3(2):11–12. DOI: 10.15406/jpcpy.2015.03.00129

Table 12 The difference on need to services between two groups in depression in A state high school in Gohardasht Karaj (above average neighborhood)

Normal	Severe Depression refer to Psychiatrist & Psychologist Doing Lab Exam	Moderately Severe Depression refer to Psychiatrist Performing Lab Exam	Moderate Depression refer to Psychologist Performing Lab Exam	Mild Depression Supportive Therapy	Total Participant
23	4	12	28	27	94
%24.46	%4.25	%12.76	%28.72	%29.87	%100

Table 13 Severity of depression and the consequent needs of students who participated in project by paying money. A private high school in Gohardasht Karaj, above average neighborhood

Normal	Severe anxiety refer to Psychiatrist & Psychologist Doing lab Exam	Moderately severe Anxiety refer to psychiatrist Performing lab Exam	Moderate anxiety refer to Psychologist Performing lab Exam	Mild anxiety Supportive Therapy	Total Participant
25	2	4	22	41	94
%26.59	%2.12	%4.25	%23.40	%43.61	%100

Table 14 Severity of anxiety and the consequent needs of students who participated in project by paying money. A private high school in Gohardasht Karaj (above average neighborhood)

Normal	Severe Depression refer to Psychiatrist & Psychologist Doing Lab Exam	Moderately Severe Depression refer to Psychiatris t Performing Lab Exam	Moderate Depression refer to Psychologist Performing Lab Exam	Mild Depression Supportive Therapy	Total Participant
8	0	3	6	9	26
%30.76	0	%11.53	%23.07	%34.61	%100

Table 15 Severity of anxiety and the consequent needs of students who participated in project without paying money. A private high school in Gohardasht Karaj (above average neighborhood)

Normal	Severe anxiety Refer to Psychiatrist & Psychologist Doing lab Exam	Moderately severe Anxiety Refer to psychiatrist Performing Lab Exam	Moderate anxiety Refer to Psychologist Performing Lab Exam	Mild depression Supportive Therapy	Total Participant
6	2	5	6	7	26
%23.07	%7.69	%19.23	%23.07	%26.92	%100

Table 16 Severity of depression and the consequent needs of students who participated in project without paying money A private high school in Gohardasht Karaj (above average neighborhood)

	Group 2	Group 1
No need for medical or Psychological attendance	%54.25	%50
Need for lab exams	%45.74	%50
Need for consultation with a psychiatrist	%28.72	%23.7
Need for consultation with a psychologist	%12.74	%19.23
Need for consultation with both	%4.25	%7.69

Table 17 The difference on need to services between two groups in depression in the A private high school in Gohardasht Karaj (above average neighborhood)

	Group 2	Group 1
No need for medical or Psychological attendance	%70.21	%65.38
Need for lab exams	%29.78	%34.61
Need for consultation with a psychiatrist	%23.7	%23.07
Need for consultation with a psychologist	%19.23	%11.53
Need for consultation with both	%7.69	%0

Discussion

In previous study, we found out that the recommendations of the system are more effective in reduction of depression than anxiety. In this study, we can see, in the stat high schools in both lower middle class neighborhood and above average neighborhood the ones who suffer from more depression, are the ones who refer more to the system and accept to pay for it. In deprived areas and in private high schools, using this system is done differently. According to what have been seen in operation of this system in different neighborhoods, we can choose different methods of operating the system in different neighborhoods.

What must be done to make an online medical care system operational in high schools in different neighborhoods?

In deprived neighborhoods running the system without financial support for performing lab examination is not possible.

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In state high schools, when we present the system to ones who are motivated to receive this attendance and accept to pay for it, we get the best results.

In private high school, there is no problem for performing the lab examination for all of the students, and then giving medical, psychological and psychiatric services to ones who are motivated.

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Conflicts of interest

Author declares there are no conflicts of interest.

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