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Full Length Research Paper

Examining the impact of health factors on the problem of unemployment in Egypt

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This study aims to investigate the relationship between a set of health variables and unemployment in Egypt in the sake of determining the most important health factors influencing the rise of unemployment rates during the period (2002-2012). And this will help for picking what the priorities of the government are the best when dealing seriously in order to solve the unemployment problem appropriately for the mitigation of rising unemployment rates in Egypt. More importantly, the results has shown that both of the No. of medical and Health care jobs, No. of family planning centers, and % of expenditure on health to Public expenditure have significant impact on increasing the No. of unemployed in Egypt, according to the target period by the current study.

Keywords: Egypt, Health, Unemployment.

INTRODUCTION

Background

This study is a try to determine the effect of health aspect on increasing the unemployment problem in Egypt. Understanding this effect is important for two reasons. First, health and the unemployment are the two major risks during an individual's working life. While a large literature has studied the interactions between job loss and health, the literature has barely addressed the issue how health factors affect the unemployment rates. On the flip side, job loss and unemployment are associated with a variety of negative health effects (Robert wood Johnson foundation, 2013). Second, understanding the causal relationship between unemployment and health is important for both labor market policy and health policy to reinforce this field in Egypt in favor of the workers.

Especially, unemployment hits the most disadvantaged sections of society the hardest and this contributes to health inequalities. The negative health effects of

unemployment have been studied extensively and unemployment has been linked with increased mortality. In this regard, unemployment is a cause of premature mortality studies show that unemployed people with no previous illness were more likely to die at a younger age than the general population. For example, one study showed that unemployed people with no previous illness were 37% more likely to die over the following 10 years than the general population (Doyle et al., 2005). There is a reverse causal relationship between these two variables. While unemployment may have an effect on health, poor health may lead to job loss (Von and Gordo, 2004).

The current study aims to give a broad picture of the overall health status associated with the unemployment in Egypt by focusing on the link between both of them. While several other studies have adopted a similar procedure by assessing the causal effects of unemployment on public health, which is considered

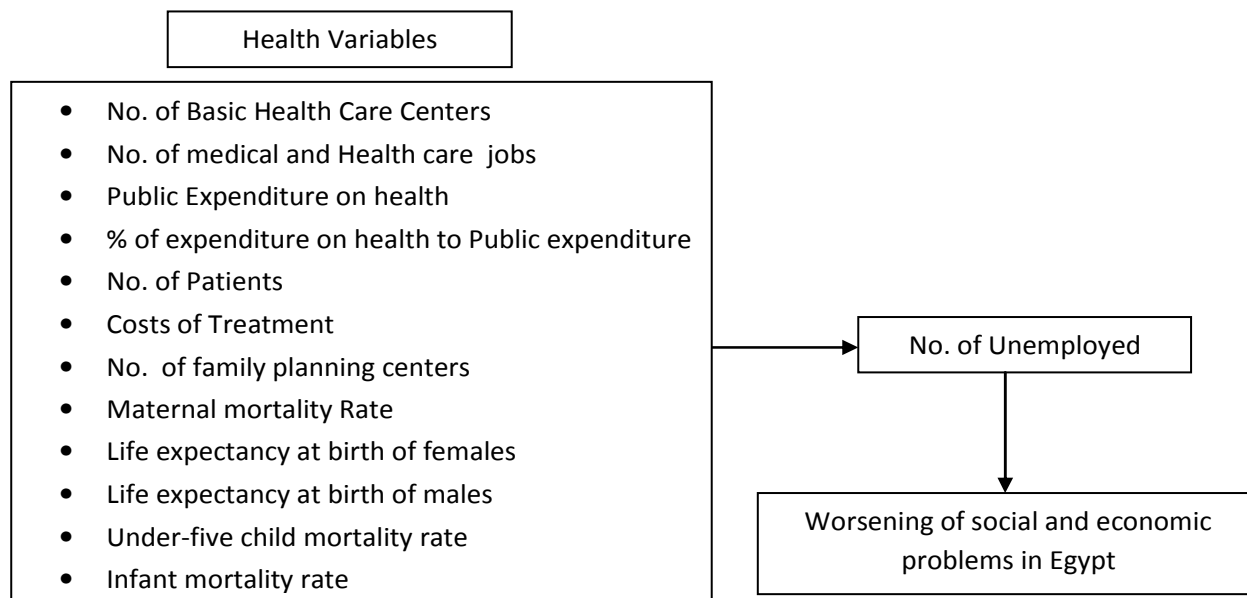


Figure 1.1. Conceptual framework illustrating Health factors associated with the unemployment that were proposed by the current study

difficult because deteriorating health status in Egypt that can be considered cause rather than a consequence of job loss. So, this study has an innovative feature that go beyond the existing literature by examining the effects of health factors on unemployment. As a result of the above, this study is directed to an audience of global policymakers and serves as the technical background paper for those interested and involved in studying the link between health variables and unemployment issues, and addresses any aspects of the defect or imbalance with respect to this issue in Egypt as one of the developing countries that need international cooperation and efforts of all relevant international organizations holders regarding such issues.

Statement of the Problem

More studies focuses on the effects of the unemployment on the health of the unemployed over the world or in many developed countries. However, it did not address the impact of health factors on exacerbated the problem of unemployment, especially in Egypt.

Consequently, this study will try to review major trends of some health variables available for the period 2002-2012 by using the advanced statistical methods, e.g., No of medical jobs, % of expenditure on health to Public expenditure, No. of patients, costs of treatment...etc. In this context, it will put particular emphasis on determining the most important of these variables that have the highest influence on increasing the No. of unemployed in Egypt during this target period by this study.

Objective of the study

The main objective of the study is to kick-start a highlighting and investigates at the same time which health variables that have an effect on increasing the unemployed in Egypt.

Hypotheses

In order to address the stated objective, the following hypothese was tested:

- 1) There was no relationship between health factors and unemployment in Egypt.
- 2) The health factors did not affect the unemployed in Egypt during 2002-2012.

Conceptual Framework

The conceptual frame work shows the proposed health factors that are associated with unemployment. The study just focused on the health factors (No. of basic health care centers, No. of medical jobs, public expenditure on health....) that were viewed as influential in increasing No. of unemployed in Egypt during 2002-2012, and this in turn is one of the main factors affecting negatively on further rising the social and economic problems in Egypt, as a direct result of the unemployment issue that associated by deteriorating the health sector. This requires quick action towards the reform and development of health, especially public health fields, and

the rational relationship following will reflect this link as follows:

LITERATURE REVIEW

This study is related to various strands of the literature that analyzes the impact of health factors on unemployment volume such as there are a study find that the jobless workers in the UK do consult medically more often than employed workers with similar characteristics (Field, and Briggs, 2001). Also another study had touched the effects of unemployment on health among unemployed where its results showed significant elevations of depression, anxiety, somatization, and self-reported physical illness among the currently unemployed based on in high unemployment area of a southeastern Michigan, and comparison between subgroups of the currently unemployed, previously unemployed, and stably employed (Kessler et al., 2005). In addition, one of studies in Austria focused on examining the relationship between a job loss and problem of deteriorating health by measuring individual workers' health and associated public health costs, and pointed that the employment increases expenditures for antidepressants and related drugs as well (Kuhn et al., 2009).

Moreover, there was a study presents evidence on the health effects of unemployment, from a public health perspective, and it had reached that the unemployment has adverse effects on psychosocial the health (Weber et al., 2007). And additional study showed how the unemployment affects public health costs, and reached that lack of employment reduces mental health for men but not for women (Kuhn et al., 2007). Also, one of studies pointed to improve health, it is important that decision makers in all policy areas consider the potential health impacts of what they do and its relationship with unemployment. But to do this, decision makers need to know precisely how their policy in health field might affect unemployment (Doyle et al., 2005).

As it is clear from the view of previous studies that have focused mostly on analyzing the causal effects of unemployment problem on public health care while not addressing the impact of health factors on exacerbating the unemployment volume or shed light on the role of health variables that affects increasing the numbers of unemployed, particularly in Egypt. So, the current study sought to achieve this dimension in an attempt seriously to monitor the most important health variables that affecting the problem of unemployment. In the framework of the foregoing, this study contributes through this literature by studying the effects of health on take up the unemployment issue directly. Furthermore, access to direct data on health variables allows assessing what health aspects are affecting the increase of No. of unemployed in Egypt.

METHODOLOGY

This study will depend on descriptive and explanatory methods simultaneously to achieve its objectives, besides the quantitative approach. And this study is a longitudinal study that depends on time series design which measurements of variables being studied are taken at different points in time, i.e. during the period 2002-2012. The study pursued seriously to select the proposed health variables based on its availability in a consistent and adequate shape for the purpose of the study from the official data in Egypt during this period. Consequence, this study is undertaken with 2002-2012 period data for the unemployment and some health variables in Egypt. And these data were taken from the statistics and surveys of the Central Agency for Public Mobilization (CAPMAS).

Moreover, appropriate statistical methods will used to realize the aims of the study according to the same approach used in the previous chapters, such as the percentages and frequencies. In addition to the use of the multi regression analysis to determine the most important health variables that has impact on increasing the No. of unemployed in Egypt through the target period. The present study will depend on some charts to reflect the relationships between the unemployment and some health variables by following the trends of unemployment across this period that will be associated with these variables.

RESULTS AND DISCUSSION

In this context of the current study, the unemployment % and the general characteristics of some health variables in Egypt will be reviewed during the period 2002-2012, according to the statistics that issued by the Central Bureau of Statistics and the general mobilization Arab Republic of Egypt, as be shown in the following table:

The results in previous table 1 have shown the trends of unemployment rates in conjunction with reviewing of the most important of health indicators proposed that may be have an impact on the unemployment rate in Egypt during the target period. These results has shown atrend of increasing to the unemployment rate in Egypt in 2012, compared to the others years, where stood at 12.7%, which is considered the highest unemployment rate that occurred during the target period, and perhaps to many influences, including the one of implications of the Egyptian revolution in January 25, and thus the deterioration of the economic and security situation in Egypt.

The data in pervious table also indicates the percentage of public expenditure on health to total public expenditure was increased during the period from 2002-2010, but it back again to drop between 2011 and 2012,

Table 1. Some Health characteristics in Egypt during (2002-2012)

Variables	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
<u>Unemployment %</u>	10.17%	11.01%	10.32%	11.2%	10.6%	8.9%	8.7%	9.4%	9%	11.99%	12.7%
<u>% of Public Expenditure on Health to Total Expenditure</u>	3.94	3.98	4.49	4.65	4.70	4.66	4.49	4.74	5.05	4.78	4.59
<u>No. of Physicians</u>	*	*	43450	46160	48111	52275	51491	56411	59639	62076	66140
• (Rate/0000 Pop.)	*	*	6.3	6.5	6.7	7.1	6.9	7.3	7.6	7.7	8.0
• (Rate/0000 Unemployed)	*	*	201.7	188.4	197.6	244.8	240.2	237.2	253.7	195.0	193.1
<u>No. of Pharmacists</u>	*	*	6466	7561	8666	9487	11953	12552	15457	17769	21084
• (Rate/0000 Pop.)	*	*	0.9	1.1	1.2	1.3	1.6	1.6	2.0	2.2	2.6
• (Rate/0000 Unemployed)	*	*	30.0	30.9	35.6	44.4	55.8	52.8	65.7	55.8	61.6
<u>No. of Nursing Staff</u>	*	*	93668	97195	99022	101734	107717	108716	109848	110744	116912
• (Rate/0000 Pop.)	*	*	13.5	13.8	13.8	13.9	14.3	14.2	14.0	13.8	14.2
• (Rate/0000 Unemployed)	*	*	434.9	396.7	406.7	476.5	502.4	457.2	467.2	347.9	341.4

(*) Not available for this year

and this perhaps due to the economic conditions in Egypt through that period, in the aftermath of the Egyptian revolution in 2011. The results recorded a marked reduction of the rates of the number of doctors (Physicians) and pharmacists compared to the number of nursing staff both for the population or the number of unemployed. And this fact will be reflected by following figure with respect to these rates, according to the type of medical jobs.

This Figure reflects the existence marked tendency of a slight increase in the rate the number of doctors per 10,000 unemployed during the last period 2002-2012. However, at the same time, that period also witnessed a remarkable decline in both of nursing staff and pharmacists rates for the number of unemployed in Egypt until reached to less value to those rates in 2012; which may be reflects the state's interest to increase No. of the doctors during that period at the expense of attention to other medical aspects. In general,

there is a decrease in the No. of people practicing at the medical careers in 2012, for the number of unemployed in Egypt. This requires the necessity to raise those rates in suitable proportion to the No. of unemployed, who may need medical care possible even if they do not work. As a result, they will be ready to participate in economic activity when given them the chance.

The results in table 2 have shown the values of the Pearson correlation coefficient(s) between the No. of unemployed in Egypt on the one hand, and between some health variables that proposed by the study on the other hand. It has shown that the highest significant correlation was between the No. of medical and Health care jobs and the No. of unemployed, which reflects a strong relationship direct correlation between the two variables and there was an evidence to the influenced by each other, whereas the hypotheses of the current study suggests the existence of the effect of

some health variables on increasing the No. of unemployed, i.e. like No. of people who working in the medical careers and so on. And it is followed by the % of public expenditure on health in terms of the strength of correlation coefficient with the No. of unemployed. Furthermore, there was a moderate correlation with a variable number of unemployed, and each of life expectancy at birth of males, under-five child mortality rate, and the No. of basic health care centers respectively.

In this context, this study will pursue for the use of regression analysis technique to determine which of health variables including at the previous correlation matrix that have the most highest impact on increasing No. of the unemployed in Egypt during the target period, as its results be clear by the next table 3. The findings of the regression analysis using the Stepwise method revealed that the value of R-Square is equal to 0.901; which means 90%, i.e. the ability or the proportion of these

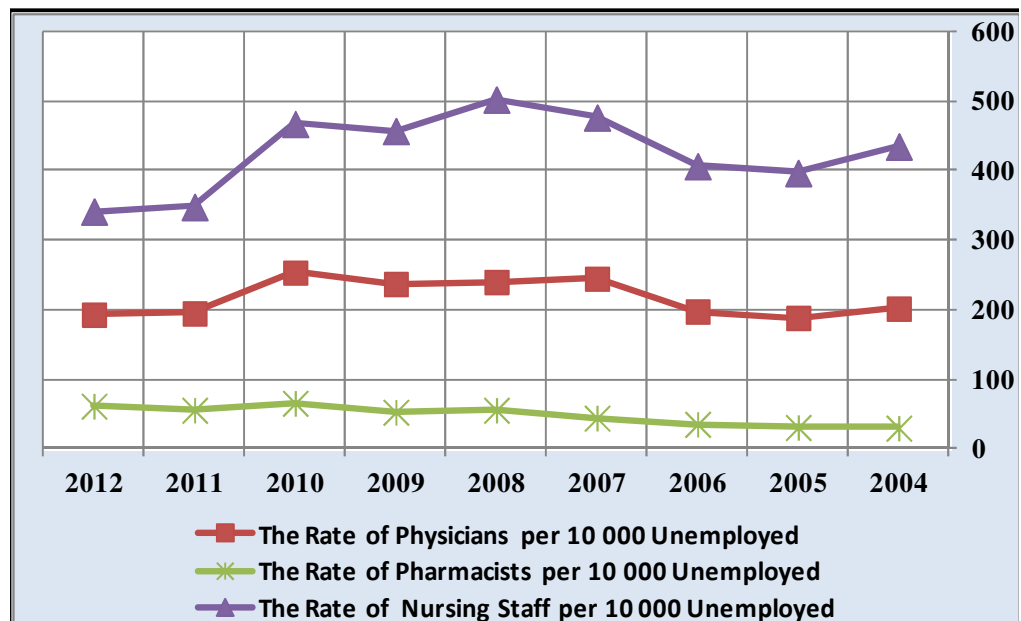


Figure 1. The rates of medical jobs per 10000 unemployed in Egypt during (2002-2012)

Table 2. The correlation matrix between No. of unemployed in Egypt, and some Health variables proposed in the regression analysis, according to the period (2002-2012)

Variables	No. of Unempl oyed	Infant mortality rate	Under-five child mortality rate	Life expectancy at birth of males	Life expectancy at birth of females	Maternal mortality Rate	Costs of Treatment
• No. of Basic Health Care Centers	0.656*	-0.802**	-0.899**	0.612*	0.225	-0.796**	0.676*
• No. of medical and Health care jobs	0.773**	0.808**	0.822**	0.573	0.257	-0.846**	0.619*
• Public Expenditure on health	0.724*	0.838**	0.858**	0.556	0.287	-0.860**	0.620*
• % of expenditure on health to Total	0.470	-0.689*	-0.862**	0.321	0.329	-0.829**	0.515
• No. of Patients	0.163	0.389	0.403	-0.255	0.591	0.562	0.839**
• Costs of Treatment	0.273	-0.640*	-0.675*	0.236	0.377	-0.714*	-0.534
• No. of family planning centers	0.220	0.421	0.255	0.016	0.340	0.248	1
• Maternal mortality Rate	0.530	0.877**	0.831**	-0.259	0.516	1	
• Life expectancy at birth of females	0.119	0.491	0.424	0.624*	1		
• Life expectancy at birth of males	0.660*	-0.328	-0.407	1			
• Under-five child mortality rate	0.659*	0.840 **	1				
• Infant mortality rate	0.561	1					

Table 3. The Coefficients of regression model equation using Stepwise method for Health variables affecting the No. of unemployed in Egypt, during the period 2002-2012

Variables	B	Std.Error	Beta	t	Sig.
(Constant)	-5.673	1516298.08		-3.741	0.007*
No. of medical and Health care jobs	-24.649	3.6	0.860	6.728	0.000*
No. of family planning centers	-1135.549	249.4	0.604	4.552	0.003*
% of expenditure on health to Public expenditure	-583677.34	238355.8	-0.439	-2.449	0.044*

(*) Significant at the level less than 0.05

- **Source:** Outputs of SPSS Program.

independent demographic variables to contribute in the interpretation of contrast and predict by the dependent variable (No. of unemployed). And this indicates that this model is fits to the target purpose for using regression relationship, and the test of variance analysis (ANOVA) has confirmed on the significance of this relationship, where the F value amounted to 21.315; which is significant at a level less than 0.05, and thus this indicates a significant of regression relationship, i.e. there is a relation existed between the dependent variable and the independent variable in the model. Accordingly, the following table lists the results of the regression analysis, as follows:

The data in table 3 showed that both of the No. of people who working in medical and Health care jobs , No. of family planning centers, and % of expenditure on health to Public expenditure have a significant effect on increasing the No. of unemployed in Egypt, according to the target period by the study from 2002 to 2012. And the variable of % of expenditure on health to Public expenditure was the greatest influence impact on dependent variable (No. of unemployed) compared to others variables proposed in the model, then followed by No. of family planning centers in the influence on increasing the No. of unemployed in Egypt, then finally the effect of No. of people who working in medical and Health care jobs was the lowest influence in the proposed model even though it has a strong correlation with the dependent variable, where each one standard unite increases for this variable will lead to an increase of 0.860 unit as shown in the table above. These results turns out the need to increase the expenditures on improving health aspects and supporting medical careers in Egypt through adopt the serious work for this field in order to limit this problem in Egypt across the coming years for obtaining on positive implication in the future generations, as an important step towards the target or sustainable development.

CONCLUSION AND RECOMMENDATION

This study studies the causal effect for some health variables on increasing the unemployed volume in Egypt. The empirical analysis focused on the case of Egypt

during the period of 2002-2012 where the factors of health aspect are sufficient to study of its impact on this problem and reached to results has significant and meaningful that can help the officials responsible for addressing this issue. The study concluded that in order to tackle the problem of reverse causality we focus on analyzing the increase in No. of unemployed according to perspective of its relation with health level in Egypt due to determine the important health variables affects the unemployment volume like the increase of No. of people who working in medical careers, in particular the physicians, No. of family planning centers, and % of expenditure on health to Public expenditure as well because these variables leads to have significant impact on increasing of these unemployment rates.

The study is a try to assess the causal relationship between unemployment and health situation in Egypt by exploiting a set of variables that be available and can combine detailed information on this health situation and unemployment history with detailed information for the target period and under-study, which do not have any missing values or cutting in the data. The study focuses directly on the role of the health aspect through monitoring the negative impacts on the unemployment in Egypt across increasing the number of unemployed. Our empirical analysis yields several interesting results. First, it turns out that the increase both of % of expenditure on health to public expenditure, No. of family planning centers and No. of medical and Health care jobs respectively may cause a significant decrease in No. of unemployed in Egypt associated with take-up of health provisions and execution policies for supporting progress of these variables positively. Second, while overall take-up of health provision for the unemployed can be measured its impact directly, the study has reached indirectly that be considered important factor contributing in limiting the mental and physical health problems for those unemployed.

While the study concluded the need to increase the medical careers and basic health care centers that has direct significant impact on limiting this problem, the family planning centers may be has indirect significant impact on limiting this problem in the coming years in part of reducing the number of births within the family. This result is in line with the hypothesis that some of health

factors affect the unemployed in Egypt during 2002-2012. So, there is a need for more sophistication in understanding the health policies and work agenda within the context of health inequalities, especially the work status of the youth, as the most important age group concerned with the problem of unemployment in Egypt. Principally, improvements in the nation's health may not by itself have a significant impact on health inequalities for the unemployed. There is a strong association between deprived areas, poor health, poverty on one hand, and unemployment on the other the flip, although the exact relationship is not clear.

Future research needs to focus on studies considers the assessment of the health policies and programs if includes these variables or not widely, and how it can cover all governorates in Egypt, thus determine the good actions that help the officials to monitor its efficiency and effectiveness continuously, in addition to the need to set-up key performance indicators concerning to these variables, and including access to certain targets for a specific time period. It is therefore also recommended that future work should depend on studies that examine the relationship between unemployed and health in deprived areas, possibly to include some qualitative research to enhance any statistical analysis, and establish methodologies to explore the extent to which new health variables has a positive effect on addressing the unemployment.

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Appendices

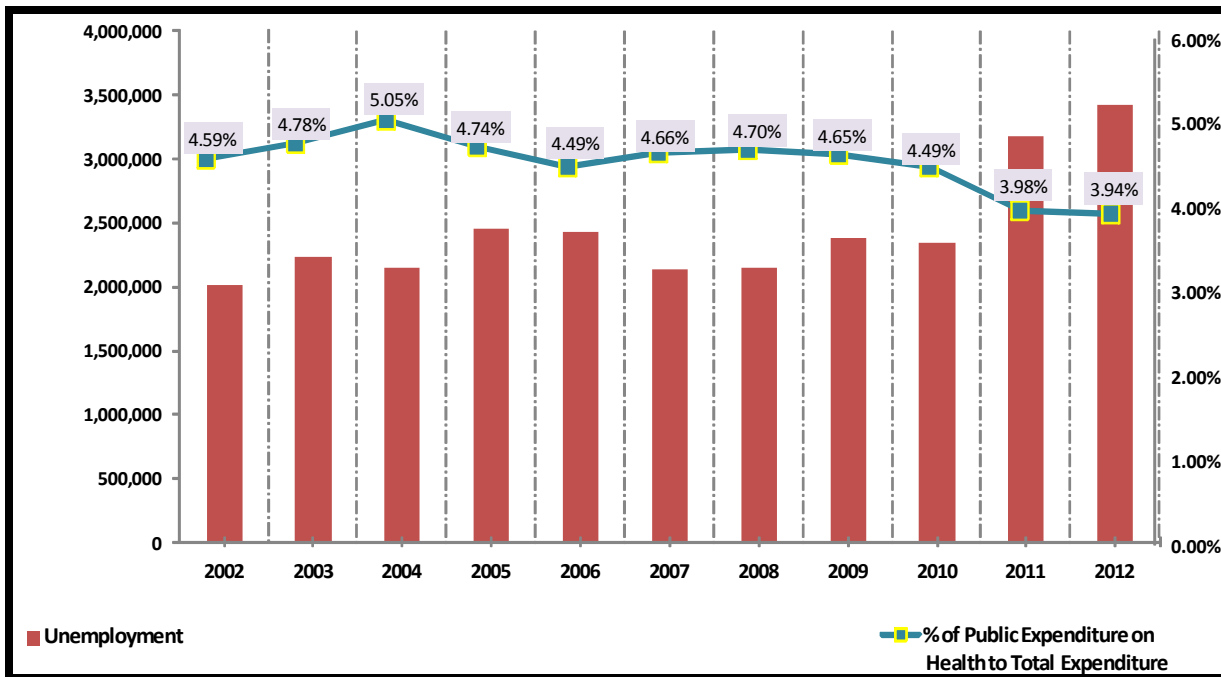


Chart 1. The No. of unemployed in Egypt and its relation with the % of Public Expenditure on Health to Total Public Expenditure during (2002-2012)

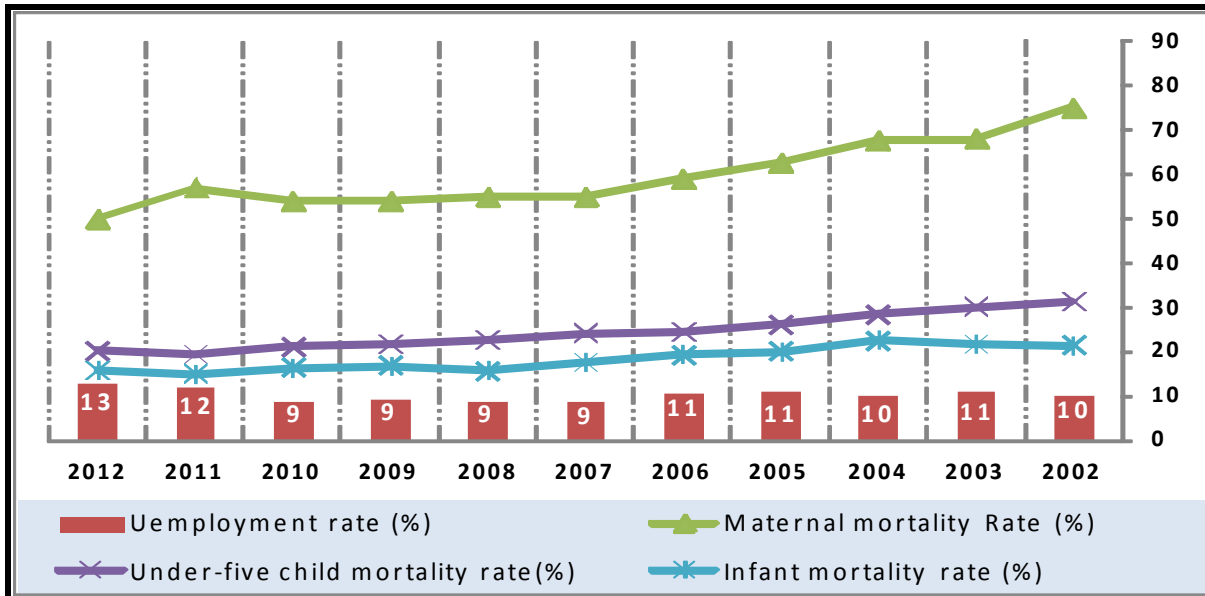


Chart 2. The unemployment rate (%) in Egypt and its relation with some health variables, during (2002-2012)