International Journal of Humanities and Social Science Invention
ISSN (Online): 2319 – 7722, ISSN (Print): 2319 – 7714
www.ijhssi.org ||Volume 6 Issue 3||March. 2017 || PP.42-49

The Effects of Income, Income Distribution and Health Expenditures on Under-Five Mortality Rate

Canser Boz[1], Sumeyye Arslan Kurtulus[2]
[1](*Health Management, Istanbul University, Turkey)*
[2](*Health Management, Istanbul University, Turkey)*

ABSTRACT: *The level of development of a country is explained together with the income, education and health level of the people living in that country. Health level is measured by health status indicators. In this study, the relationship between income level, income distribution, health expenditures and under five mortality rate, which is one of the most important health status criteria, is discussed. So, the aim of this study is to find out how international level income levels, income distribution and health expenditures could influence the under-five mortality rate. For this purpose, the explanatory power of the economic indicators of 190 countries for 2013 on the under-five mortality rate was examined by multiple regression analysis. According to analysis results, the increase in health expenditures and income levels has a positive effect on the under-five mortality rate, also the income distribution deterioration has the negative impact the under-five mortality. Moreover, the increase in the share of private health expenditures in the health sector, especially in low-income countries, has been reached as a negative impact on the under-five mortality rates.*

Keywords:*Infant Mortality, Socioeconomic Factors, Under-Five Mortality, World Health Organization*

I. INTRODUCTION

The health level of the people in any country has great effect on production, activing involvement in the working life and the welfare. When people are healthy, they can produce on the labor market and contribute to the country's capital. From a macro perspective, societies with good health status produce more and generate more income (Zweifel, Breyer, & Kifmann, 2009). In this respect, health expenditures can be considered an investment for the future of the country.

Healthcare services are different from other service sectors because of information asymmetry, common externalities, and lack of competition, risk and uncertainty. These features require public intervention in the healthcare sector (Altug, 2015). The public is dominating a considerable part of the health system with regulatory and supervisory mechanisms and health care delivery. The public is trying to make improvements in the health status of the country using various means. Basic health indicators such as neonatal infant mortality rate, maternal mortality rate, under-five mortality rate, life expectancy at birth are listed as health status indicators of a country (Cevik, 2013).

Health indicators cannot be explained by a single factor. There are many factors that affect health indicators. Socioeconomic factors include gender, educational status of mother and family, environmental conditions, age, nutrition, reaching clean water and sanitation, air pollution and many factors are related to health. According to Lerer 's model of direct and indirect determinants of health status , income, environmental factors, socio-demographic structure and education are effective on health both indirectly and directly (Lerer, Lopez, Kjellström, & Yach, 1998). According to Roemer's model of health status determinants, factors affecting health status are physical environment such as geography, climate, nutrition, accommodation, social environment such as education, profession, income, urbanization and personal characteristics like age, gender and genetic structure (Roemer, 1991, Celik, 2013). In general, when these factors are improved, infant mortality rate decreases, life expectancy increases, maternal mortality rate decreases.

Studies and statistics show that as the share of health in the country's resources increases, the health indicators show improvements. The more share of health expenditure in GNP in a country seems to be better for that country's health indicators generally. Also, there are a number of studies showing that income and income-related factors, as well as health expenditures, indirectly and directly affect health indicators.

The aim of this study is to establish the relationship between income level, income distribution, health expenditures and the under-five mortality rate. For this purpose, the first part of the study includes the related literature, the second part includes the research method, the third part shows the study results, and the last part offers the conclusion and recommendations.

Income and Income Distribution

Income is defined as the sum of the monetary values obtained in one year as a result of the production items of an economy contributing to the formation of the national product (Karaman and Ozcalık, 2007). Income is the sum of the values of goods and services that are created within a year in a particular period in the national economy. This is called national income or total output. Income in terms of household or individual can be defined as the sum of the values obtained for a certain period of time for the contribution made to production. Household income can be in the form of rent (rent), capital income (interest) or enterprise income (profit) in the form of wages and salaries paid for labor compensation (Parasiz, 1993).

The notion of income distribution is a matter of interest to social scientists as well as to economists, is frequently discussed. Income distribution is on the agenda of all countries today. With increasing globalization, increasing poverty because of income distribution inequality is often discussed at various platforms as important social problems to be resolved towards the end of the 20th century. Income distribution refers to the allocation or distribution of the total income from goods and services produced by individuals living in a country to the individuals in that country by means of distribution. Income inequality indicates that income distribution in a country is not shared equally and equitably by the individuals in that country. The income distribution is such quite complex and extensive that there are many factors that affect this concept. It is possible to say that factors such as age, gender, occupation, ethnicity and personal characteristics are important influences on income distribution (Kustepeli and Halac 2004).

The theory of economics deals with the question of who, how and how to distribute it, rather than how to obtain national income. Income distribution enables the determination of the relationship between income inequality and social and economic institutions. It is now undisputed that income distribution will be unequal as a result of the self-functioning market economy, which is characterized by underdeveloped and non-state intervention in developing countries (Ulusoy et al 2015). It is possible to examine the income distribution types in four groups as functional income distribution, geographical income distribution, personal income distribution and sectoral income distribution. Many criteria have been developed to measure equality or inequality in income distribution. Gini coefficient, Lorenz curve and percentage shares (P80 / P20) are the most common ones (Karaman and Ozcalik 2007).

Gini coefficient: A widely used measure of dispersion to measure personal income distribution. The Gini coefficient is equal to the ratio of the total area under the diagonal of the area bounded by the Lorenz curve to the area between the curve and the diagonal. As this rate grows, the inequality in distribution is increasing. The Gini measure varies from "0 to 1". In a society, if income is shared equitably, the Gini coefficient is equal to "0", and if only one person has income from the community, the Gini coefficient is equal to "1".

Lorenz Curve: The Lorenz curve is a graph used to show the inequality of income or the distribution of wealth in the population. The curve cuts the diagonal of a square to the extremities. At the vertical edge of the square, cumulative shares are shown, while at the horizontal edge the cumulative shares of the population are shown as percentages. Diagonal curve shows equal distribution of income between populations (absolute equality). As the Lorenz curve moves away from the diagonal, the inequality in income distribution increases.

Percentage shares (P80 / P20): Percentage shares are among the criteria used to measure personal income distribution. According to the shares of 20 percent of individuals / household groups in total income; "The share of the last 20 percent of the total income / the share of the first 20 percent of the total income" is calculated.

The Relationship Income and Infant Mortality

Numerous studies in different countries in different time periods have identified the relationship between social indicators and health outcomes. In these studies, various variables such as life expectancy at birth, health expenditures, infant mortality rate, the number or frequency of health institutions, and the intensity of the healthcare staff were used as health outcomes or indicators (Hayaloglu and Bal, 2015). It is possible to mention the existence of a large number of studies suggesting that there is a positive relationship between income and health status and a negative relationship between income and mortality rates (Tuyluoglu and Tekin 2009).

There is no general performance criterion that will undoubtedly be how well an institution's health system works. However, when making cross-country comparisons, an assessment can be made using objective health status criteria. Among the most widely used criteria are; Infant, under-five, or maternal mortality rate, and life expectancy at age 65. In addition, DALY (disability adjusted health expectancy) and QALY (health adjusted life expectancy) calculated by the World Health Organization (WHO) on a country basis are also used in many studies (Cevik 2013).

In this part of the study, the relationship between income level and infant mortality, one of the health indicators, will be examined. It is believed that the identification of the health output indicators mentioned would be beneficial in terms of better scrutiny of the subject. These criteria are;

Infant mortality rate: Infant mortality is the most important indicator of health in a society, especially in the level of child health. Infancy is the first 365 days of life from birth (Guler and Akin, 2015). This rate is the result of multiplying the number of live births in one year in a society and the number of babies who died before completing one year multiplied by the number of live births in the same year in the same year by 1,000. The important point here is that the baby dies after live birth in order to be called infant mortality (Guler and Akin, 2015).

Under five-years mortality rate: This rate is the result of multiplying the number of children who died before completing the age of five in one society in a year, to the number of babies born alive in the same year in the same year by 1,000 (Guler and Akin, 2015).

Infant and child mortality is influenced by socioeconomic and environmental conditions, as well as by such factors as the nature of maternal and child health services (Taskin and Atak, 2004). The relationship between income level, which is one of the socioeconomic factors, and infant and child health begins without the baby coming to the world. The nutritional status and social conditions of the mother are influential on the health of the baby on the mother's womb. From the beginning of the pregnancy until the end of the first six months of life, the mother alone creates the child's surroundings so the survival and growth of the child in this period depends on the health of the mother. From six months onwards, the child's surroundings are increasingly home and community. If this environmental income level is low and lacks basic health, it will also be possible to see extra risks. The level of income has indirect and direct effects on infant mortality. Besides, effects of indirect factors such as inadequate access to health services or lack of timely access, there are a variety of factors such as inadequate nutrition of both mother and baby, distant conditions of housing conditions, inability to reach clean water and sanitation, humidity, indoor air pollution, unhealthy toilets cause health problems (Tuyluoglu and Tekin, 2009).

Income emerges as one of the most important variables in describing health outcomes in most empirical studies. Studies have shown a negative relationship between income level and infant and child mortality. As income levels decrease, infant and child mortality increases (Cevik 2013; Tuyluoglu and Tekin 2009; Macinko et al 2004). The relationship between income inequality and health outcomes was examined in a study of 19 OECD countries covering 1970 and 1996 years. Even when the per capita GDP was kept constant, a statistically significant and positive relationship was found between income inequality and infant mortality rate. As the inequality in income distribution increases, infant mortality rates increase (Macinko et al 2004). 30% of the deaths in poor countries are child mortality, which is less than 1% when compared to rich countries. Each year, approximately 10 million children under the age of five are most likely to die from preventable situations. Among the reasons for the decline in child mortality rates in developed countries today are improved nutritional conditions, public health and medical technological practices. Especially improved nutritional conditions are associated with the increased income (Bhalotra, 2007). According to the study conducted in the United States, as household income increases, infant mortality rates decline between 1964-1966 and 1988 (Sing and Yu 1995). Incidentally, income level, income distribution, distribution inequalities directly or indirectly affect infant or under-five mortality.

The Relationship between Health Expenditures and Infant Mortality

The literature about impact of health expenditures on infant mortality is examined in this section. Health expenditures is one of the most important indicators of the health System (Tuyluoglu and Tekin, 2009). In order to obtain health and to ensure its continuity, while all the institutions, organizations producing health related services and goods are called health sector, all kinds of expenditures on the health sector are called as health expenditures (Kursun and Rakici, 2014). The increase in health expenditures is one of the most frequently discussed issues in the health sector. Societies that have reached a certain level of economic development show that the resources allocated for health are increasing and the health consciousness of individuals is also increasing (Yumusak and Yildirim, 2009). There are many studies that show the relationship between health expenditures and health indicators. There are a lot of evidence suggesting that as health expenditures increase and infant mortality decrease.

Arslanhan (2010) showed that infant mortality rates are low in those countries where the share of health expenditures in GDP is high in the study shows relationship between health expenditures and the life expectancy of those in Gross Domestic Product (GDP) with WHO Statistics (Arslanhan, 2010). Yumusak and Yildirim (2009) analyzed the relationship between health expenditures, life expectancy at birth and gross national product (GDP) values between 1980 and 2005 in Turkey's empirical analysis using data and found that the impact of health expenditures on GNP is negative and small, while the effect on life expectancy is high and positive (Yumusak and Yildirim, 2009).

The current evidence on health expenditure shows that in countries with low developmental levels, the corresponding public health expenditures have a stronger impact on mortality rates compared to private health expenditure, but in countries with high developmental levels, the opposite is true. Issa and Quattara (2005)

investigated the effects of health expenditures on infant mortality in 1980-2000 studies using data from 160 countries. In the study, particularly public health expenditures have proven to have a profound effect on the low income group of countries, and an increase of 1% of this expenditure has proved to reduce infant mortality rates by 0.16%. Nevertheless, there is no evidence of such an association in high-income countries. At the same time, there was no correlation between private health expenditures and infant mortality in low-income countries. In addition, a strong relationship between private health spending and infant mortality in the high-income country group has found and a 1% increase in private health expenditures has led to an estimated reduction in infant mortality by 0.36% to 0.85% (Issa and Quattara, 2005).

Cochrane et al. (1978) used health care services and mortality as outputs, the number of doctors-nurses and hospital beds, smoking-alcohol consumption within the scope of diet index, daily calorie intake, GNP, education index, and the struggle index (health expenditures covered by public expenditures) within the scope of socioeconomic variables as input have been used in their study of 18 developed countries and examined the relationship between them. According to the study results, GNP (Gross National Product) was found to be the main variable showing a strong and negative relationship with age specific mortality rates. In addition, health expenditures within public has a consistent negative correlation with all mortality rates, and the correlation coefficient in the 15-24 and 25-34 age groups is the largest (Cochrane et al. 1978). Filmer and Pritchett used cross-sectional data from 98 developing countries between 1992 and 1993 in order to examine the effect of health expenditures on infant and under-five mortality and found that 95% of the mortality change among countries is due to per capita income, income inequality, education of women, ethnic division. Gupta et al. (2002) has obtained some evidence that health expenditures reduce child mortality in 50 developing countries. In another study, Anond and Ravallion (1993) have concluded that health expenditures have positive and significant effect on the life expectancy but there is no significant relationship between income and life expectancy in the study conducted 22 developing countries using cross-sectional data (Bhalotra, 2007).

Bhalotra (2007), in his work in India, found that health expenditures have significant influence on infant mortality. The most striking differences in impact were found among the social groups. These include gender, number of birth, religion, education level of mother and family, mother's age at birth (Bhalotra 2007). In another study using cross-sectional data in the sample of the World States to investigate whether health expenditures have an effect on health indicators has found that public health expenditures have positive effect on child mortality (Celik, 2013). Besides, In order to reveal that this effect has changed between countries additional regressions by classifying countries according to their income groups have been applied and found that public health expenditures in low-income countries is more effective on health outcomes compared with low-income countries (Celik, 2013).

Indicator alone never provides sufficient information about the health status of communities. However, infant mortality rates, under-five mortality rates, life expectancy at birth variables provide important information about the health status of a given country. We cannot say that these variables will be affected by only one factor. These rates may increase or decrease under many factors such as socioeconomic, education, culture, gender, maternal health, nutrition, air pollution and so on. Health expenditures are also under the heading of socioeconomic from these factors.

II. METHOD

In this study; the relationship between health expenditure, income and income distribution indicators, and under-five mortality rates, considered as one of the primary health outcomes and belongs to 190 countries of the World Health Organization has been examined. Based on the quantitative research model, multiple regression analysis was performed using Least Squares Method in the study. Eviews-8 package program was used for the analysis.

Obtaining Data and Establishing the Model

In regression analysis; the share of health expenditures in GDP (SHGDP), the share of private health expenditures (PRIVATE), income per capita (INCOME) and income distribution (GINI) have included as independent variables, under-five mortality rate (U5MR) at 1000 live births has included as dependent variable in the model. Horizontal cross-section data for the year 2013 have been used in the study. The data were obtained from statistics and reports published by Organization for Economic Cooperation and Development, World Health Organization. Since the relationship between the variables is logarithmic, the logarithm of all the values is calculated in the model. This model is called full logarithmic. The reason why the full logarithmic model is preferred is to obtain the predicted coefficients elasticity. In this way, while the percentage change in the independent variable is fixed, the percentage change the dependent variable is obtained. For this reason, this type of model is used more often in applied studies (Yildirtan, 2011). The created model using dependent and independent variables is as follows;

$$LnU5MR = \beta 0 + + \beta 1\ LnSHGDP + \beta 2\ LnPRIVATE + \beta 3\ LnINCOME + \beta 4\ LnGINI + u \quad (1)$$

SHGDP is included in the model because it shows how much of the income available in a country is used for health and is one of the most basic health expenditure indicators. PRIVATE, on the other hand, shows how much of the resources in the health sector within a country is covered by the private sector and one of the other important health expenditure indicators. GDP per capita, one of the most basic indicators of income level, has been used to see the effect of income level on under-five mortality rate. Gini coefficient has been used to see the effect of income distribution.

III. RESULTS

The descriptive statistics for the variables in the model are given in Table 1. According to Table 1; The dependent variable under-five mortality rate was approximately 30.9 for 190 countries. The highest under-five mortality rate is about 157, while the lowest value is about 2 per 1000 live birth. The share of health expenditures in the gross national product was 6.77% on average. The share of health expenditures in the gross national product is the highest at 19.7%, the lowest at 1.3%. At the share of private sector in health expenditures, the average value is 39.93% while the lowest value is 0.01% and the highest value is 92.60%. The annual income per person, which shows income level, is approximately 39.20 thousand dollars, while the highest value is 132 thousand dollars and the lowest value is about 600 dollars per year. The mean value of the Gini coefficient is about 0.39, while the highest value is about 0.63 and the lowest value is about 0.17.

Table 1. The descriptive statistics for the variables

Variables	Mean	Standard Deviation	Min.	Max.
LnU5MR	30.89	31.59	2.00	157.00
LnSHGDP	6.77	2.85	1.30	19.70
LnPRIVATE	39.93	19.23	0.10	92.60
LnINCOME	39.20	8.98	600	132.000
LnGINI	0.39	0.08	0.17	0.63

The Influence of Health Expenditures, Income and Income Distribution on Under-Five Mortality Rates
Dependent Variable: Under-Five Mortality Rates
Method: Least Squares
Sample: 2013
Observations: 190

Table 1. Regression Analysis Result

Variable	Coefficient	Standard Error	T-Statistics	Probability	VIF
LnSHGDP	-0.539258	0.109061	-4.944566	0.0000	1.112232
LnPRIVATE	0.289002	0.086281	3.349545	0.0010	1.146518
LnINCOME	-0.653861	0.039089	-16.72771	0.0000	1.407233
LnGINI	0.807618	0.193052	4.183425	0.0001	1.164250
C	1.258385	0.836237	1.504819	0.1347	
R-squared	0.824370	Mean dependent var		2.935589	
Adjusted R-squared	0.819279	S.D. dependent var		1.158012	
S.E. of regression	0.492286	Akaike info criterion		1.454826	
Sum squared resid	33.44370	Schwarz criterion		1.558422	
Log likelihood	-99.02006	Hannan-Quinn criter.		1.496922	
F-statistic	161.9353	Durbin-Watson stat		1.764811	
Prob (F-statistic)	0.000000			0.000000	

Table 2 shows the results obtained by using the LSM method, According to Table 2, when the significance test of the independent variables is examined, the probability values of SHGDP, PRIVATE, INCOME, GINI variables are significant at 1% significance level. It appears that the adjusted R-squared value, representing the model fit, is approximately 82%. The independent variables in the model account for approximately 82% of the dependent variable. Besides, the F-statistic showing the significance of the model is 161.9353. The corresponding probability value is 0. 0000. For this reason, it can be said that the model is meaningful as a whole at the level of 1% significance. The VIF values in the model are between 1 and 5, which is an indication that there is no multi-linear connection problem in the model data. In addition, the

autocorrelation problem of the model was examined by the Durbin-Watson test and it was concluded that there is no autocorrelation problem (DW: 1.702). One of the basic assumptions of regression analysis in the model is that the variance of error terms is the same for all observations. That is, whether there is a changing variant problem or not. The variable variance problem was investigated by the Breusch-Pagan Godfrey test (heteroscedasticity test) and it was determined that there were no problems of varying variance (F: 0.878396, p statistic, 0.3696).

Interpretation of the model

In this study, the effect of health expenditures, income level and distribution on under-five mortality rates using the cross-sectional data for 190 countries of the World Health Organization and the following coefficients of the independent variables in the model were reached;

Model;

LnU5MR= 1.574 – 0.53*LnSHGDP + 0.28* LnPRIVATE – 0.65*LnINCOME +0.80*LnGINI

According to the model, the under-five mortality rates decreases by 0.61 when the share of health expenditures of 190 World Health Organization members in GNP increases by 1%. This shows that the increase in the share of health expenditures in GNP is a positive effect on infant mortality rates, in other words, it reduces infant mortality rates. The fact that the share of health expenditures in GNP is negative is due to the fact that the health status of the high-income countries is naturally better, with a greater share of the national income. The under-five mortality rates considered to be one of the health outcomes is lower when the investment in the health infrastructure is higher.

Other health expenditure variables that are significant in the model is the share of private sector expenditure in total health expenditure. This share is expressed as a percentage. An increase in the share of private health expenditures increases under-five mortality rates by 0.28% according to the model. This demonstrates the need for public financing to reduce under-five mortality rates, particularly in countries with low levels of development. In other words, under-five mortality rates may be lower in countries where there is a good social security system in the health sector.

Another independent variable included in the model is the per capita income level. Under-five mortality rates decrease by 0.64% when the per capita income level increases by 1%. The relationship between income change and health outcomes of countries (infant mortality, maternal health, life expectancy) has been examined in different ways. Generally accepted conclusions in the studies made are that there is a positive relationship between income and health outcomes. Higher income means higher health because people with higher incomes are more conscious about health, have more spending ability, and those with higher income are easier to access geographically and economically to health services. Income distribution as well as income is one of the fundamental variables that have an impact on health outcomes. The under-five mortality rate increased by 0.80 when the income distribution in the model increased by 1%. One of the most basic indicators in measuring income distribution is the Gini coefficient. This coefficient takes a value between 0 and 1, and as the value goes closer to 1, it indicates that the income distribution is impaired. In the model, an increase in the value of the Gini coefficient increases the under-five mortality rates, which is one of the health outcomes. The fact that a large part of the income in the country is in the hands of a small part of the society means that the most of the community cannot afford enough resources even for the basic necessities such as health services. For this reason, the level of health is lower in societies where income distributes unjustly.

IV. CONCLUSION

Providing a long and healthy life for the individual and creating the appropriate living conditions for every baby born is the most basic goal of the health systems of all countries. Health is a complex phenomenon that is affected by many socioeconomic factors besides genetic and behavioral factors. There is no exact way to assess a country's health level. In general, when the level of health of countries is evaluated, health status indicators are the most frequently discussed. The most common health status indicators are; neonatal infant mortality rate, maternal mortality rate, under-five mortality rates, life expectancy at birth, level of satisfaction with health services, perceived health status etc. Among these indicators, the most commonly used are infant mortality rates, maternal mortality rates and life expectancy at birth. In this study, the relationship between under –five mortality rates and income level, health expenditure, income distribution is discussed with cross sectional data at international level. The purpose of the study is to show how the level of income, income distribution and health expenditures can influence the under –five mortality rates. For this purpose, under –five mortality rates as a dependent variable, the share of health expenditures in GDP, share of private health expenditures in total health expenditures, Gini coefficient are used as independent variables. The explanatory of

independent variables in the model was found to be 82%.

According to the results obtained within the scope of the study it is possible to find significant inferences. There is no universally accepted idea despite the long-lasting debates about impact of health expenditures on health outcomes and what should be the optimal level of health expenditure. However, in general, the increase in health expenditures has a positive effect on health outcomes. However, it is also known that the increase in health expenditures alone will not guarantee the health. Besides the fact that the level of health expenditure is high or low can provide us with limited information in the sense of whether a country has a good health care system. The areas in which health expenditures is used more important than the level of health expenditure. In terms of health expenditure indicators, the country that devotes the most resources to health is the United States of America (USA). However, in the health status indicators, the USA is not among the leading countries in the world. The USA is spending a lot of money, but cannot obtain enough health output. So, health expenditures made should not only enough high level but also have to be effective at the same time to improve health level. In other words, the health expenditures must be delivered to the targeted beneficiaries. For example, public mechanisms should put into practice to facilitate the access of the poor to health.

One of the important areas of discussion about health expenditures is how public and private sector share of health expenditures should be. According to the results, it was concluded that private health expenditures are positively related to under –five mortality rates. African countries are most troubled in terms of infant mortality rate generally. One of the major health problems in these countries is that the public health expenditures are not at an adequate level because of the economic level of the country. In countries that are considered successful in terms of infant mortality rate, the share of public health expenditures in the health system is generally higher. The availability of an effective public health system ensures adequate provision of primary health care services that are highly relevant to infant mortality rates. For this reason, in order to reduce infant mortality rates especially in low-income countries, a structure in which public will play an active role for primary care services should be established.

Income level is another factor that has effect on health outcomes. Revenue is the most important economic indicator when examined both at the macro level (regional or national) and at the micro level in relation to health outcomes. The higher the per capita income level of a country enable the longer and healthier life for people. Increasing income levels will affect health outcomes positively. This result has been reached many times in other studies. This study also concluded that there was a negative relationship between income level and under –five mortality rates. Especially in countries with low income levels, an increase in income level will positively affect health outcomes.

As well as income level, income distribution is another important factor for health. Especially in developed societies, health status depends more on the equilibrium of income per capita rather than the level of income. In countries where income distribution is fair, the health status is also rising faster. From another point of view, the most vulnerable part of accessing health care in the society are undoubtedly poor individuals. The deterioration of the income distribution of the society means that a large part of the income belongs to a very small part of the society. This will lead to impoverishment of the community. The impoverishment of society will lead to inadequate nutrition, education and hygiene and will prevent individuals from accessing basic health services and exhibiting healthy lifestyle behaviors. The significant relationship between income distribution and infant mortality have been determined in the study. The steps to be taken by the countries to improve their income distribution will positively affect the health level for developed and under developed countries.

REFERENCES

[1]. Bhalotra, S.Spending To Save? State Health Expenditure and İnfant Mortality in India, *Health Economics, 16(9),* 2007, 911-928.
[2]. Celik, S. Impact of Public Health Expenditures on Health Outcomes: A Comparison of Countries by Income Levels, *Istanbul University Political Science Faculty Journal, 48(1),* 2013.
[3]. C. Guler, L. Akin, Public Health (Ankara: Hacettepe University Publications, 2015).
[4]. Cochrane, A. Leger, A. S. St Leger, and F. Moore, Health Service 'Input' and Mortality 'Output' in Developed Countries, *Journal of Epidemiology And Community Health, 32(2),* 1978, 200-205.
[5]. D.Ç.Yildirtan, Basic Econometrics with E-Views Applied (Turkmen Publications, 2011).
[6]. G Singh, K. S Yu, M. Infant Mortality in The United States: Trends, Differentials, and Projections, 1950 Through 2010, *American Journal Of Public Health, 85(7),* 1995, 957-964.
[7]. Hayaloglu, P. Bal, H. Health Expenditures and Economic Growth Relations in the Top Middle-Income Countries, *Journal of Business And Economic Studies,3(2),* 2015, 34-44.
[8]. I. Parasiz, Introduction to Economics(Bursa: Ezgi Publications, 1993).
[9]. I Yumusak, G. A Yıldırım, Health Expenditures An Econometric Study on the Economic Growth Relation, *Journal of Information Economics and Management, 4(1),* 2009.
[10]. Issa, H. Quattara, B. The Effect Of Private And Public Health Expenditure on Infant Mortality Rates: Does The Level Of Development Matters, *Journal of Damascus University,28(1),* 2005, 21-37.
[11]. K. Altug, Health Economics(Ankara: 657 Publications, 2015).
[12]. Karaman, B. Ozcalık, M. An End to Inequality of Income Distribution in Turkey, *Management and Economy,32(1),* 2014, 77-105.
[13]. Kursun, A. Rakici, C. Analysis of Health Expenditures in Turkey and Social Welfare States, *Human Rights Yearbook,25(1),* 2007
[14]. Lerer, R. Lopez, A. Kjellström, T. Yach, D. Health for all : analyzing health status and determinants, *World health statistics quarterly,* 51*(1),* 1998, 7-20.

[15]. Macinko, J. Leiyu, S. Barbara S. Wage Inequality, The Health System, and Infant Mortality in Wealthy Industrialized Countries, 1970–1996, *Social Science & Medicine*, 58*(2)*, 2004, 279-292.
[16]. M Roemer L. Global Health and its Determinants, *National Health Systems of World*, 1*(2), 1991, 11-29.*
[17]. S. Arslanhan, How Does Increasing Health Expenditure Affect Primary Health Indicators? (Evaluation note of Foundation of Turkish Economy and Politics, 2010).
[18]. Taskın, S. Atak N. Evaluation of Infant and Child Deaths: Turkey Population and Health Survey 1993 and 1998, *Journal of Ankara Medical Faculty*, 57(1), 2004.
[19]. Tuyluoglu, S. Tekin, M. Income Level and Expected Life Span of Health Expenditures and Infant Death Rates, *Cukurova University IIBF Review, 13(1)*,2009, 1-31.
[20]. Ulusoy, A. Karakurt, B. Akbulut, E. Impact of Educational Expenditures on Income Distribution: The Function of Higher Education in Turkey to Eliminate Income inequality, *Journal of Finance Research, 1(2*), 2015.
[21]. Y. Celik, Health Economics(Ankara: Political Bookstore, 2013).
[22]. Zweifel, P. Breyer, F. Kifmann, M. Health Economics (London: Springer Dordrecht Heidelberg, 2009).