

The People's Democratic Republic of Algeria
Ministry of Higher Education and Scientific Research



High School of Management- Tlemcen

Department of Management

Extended Essay submitted to the high school of management in
candidacy for the degree of Master in Management

Option: Healthcare Services Management

Theme:

**The impact of healthcare
insurance on the consumption of
health products**

Presented by:

HAMIMED Katre Nada

Supervised by:

Dr. BERRACHED Amina

& Dr. BENABDALLAH Awicha

Defended on:

November 09th 2020

Board of examiners:

Last and first name	Grade	Quality
Dr. METAICHE Mohammed el Amin	MCA	President
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Dr. CHIB Djazia Amina	MCA	Examiner

Academic year: 2019/2020

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Dedications

I dedicate this humble work to god first, then

To my dear grand-mother "Nassiha" my god have mercy on her

To my dear parents, my brother & sister

&

*To my loving Fiancé who has been present all along
this work,*

List of Table:

N° :	Title:	Page :
01	Differences in health spending around the world in 2017.	34
02	Evolution of the age structure (in%) of the Algerian population of 1948 to 2008 (according to censuses)	37
03	Evolution of wages in Algeria between 2000 and 2011 in billions of Algerian Dinars.	40
04	Distribution by gender	66
05	Distribution by age	67
06	Distribution by relationship statue	68
07	Distribution by level of education	69
08	Distribution by occupation	70
09	Distribution by income	71
10	Individuals use of health products	72
11	Sector choice and the type of insurance	79
12	Income and its relation with the sector choice	79
13	Relationship between age, prescription choice and insurance.	80

List of Figures :

N° :	Title:	Page :
01	Health Indicators in Algeria	32
02	Proportion of Government Development Expenditure on Health (percent) and GPD in Algeria during (1974-2014)	33
03	Distribution of the sample by gender	66
04	Distribution of the sample by age	67
05	Distribution of the sample by relationship statue	68
06	Distribution of the sample by level of education	69
07	Distribution of the sample by occupation	70
08	Distribution of the sample by income	71
09	Population covered by insurance	73
10	Types of health insurance in Algeria	74
11	Individual's sector choice	75
12	Individual's preferences	76
13	Cases of consumption of healthcare products	76
14	Reasons of choosing the doctor	77
15	Individuals attitude when the health products prices rise	78

List of Abbreviations:

ALSA	Advanced Life Support Ambulance
BCHI	Basic Complementary Health Insurance
BLS	Basic Life Support
BLSA	Basic Life Support Ambulance
CCMG (CBSM)	Consumption of Care and Medical Goods (Consommation des Biens et Services Médicaux)
CMU-C	Couverture Maladie Universelle Complémentaire
CHI	Complementary Health Insurance
DROM	Departments and Region of Overseas (outr-mer)
EMTs	Emergency Medical Technicians
EPASS- SPS	Echantillons Permanents des Assurées Sosiaux- Santé et Protection Social Permanent Sample of Social Insured
ESPS	Enquete sur la Santé et la Protection Social Health and Social Protection Survey
GDP	Gross Domestic Product
HDI	Human Development Index
INSP	National Public Health Institute Institut National de santé public
LTI	Long Terme Illnesses
MEPS	Medical Expenditure Panel Survey
MFES	Medical Flight Escot Services
NPHS	National Health Documentation Agency
NSIF	National Social Insurance Found
OECD	Organization of Economic cooperation Development
PACT	Prescription Analysis and Cost
PHC	Public Health Code
PPP	Pharmaceutical Per-unit Spending

table of content

General Introduction	10
Chapter one: Characteristics of Healthcare Demand	17
1. Most widely known theories of demand and consumption in the healthcare sector:.....	19
2. Consumption of care and medical goods (CSBM):.....	24
3. Health spending around the world:.....	28
4. Factors influencing the consumption of healthcare:.....	33
Chapter two: Insurance In Health Sector	41
1. The general theories of insurance:.....	43
2. The health system:.....	52
3. The social insurance program:.....	54
4. The social Security system in Algeria	56
Chapter three: Case study	63
General Conclusion	83
Bibliography:	87



**General
Introduction**

1. Research context:

Health insurance is one of the most valuable tools in healthcare financing. Therefore, health insurance, which covers the risk of treatment and certain additional costs, is one of the ways that individuals pay for their healthcare needs in different countries. Furthermore, the traditional health insurance philosophy has maintained that being insured serves as a decrease in the price of health coverage, almost as if the price reduction on the market had taken place exogenously. Newhouse writes:

“For the purpose of studying the relationship between health insurance and demand, the important point is that insurance is like a subsidy to purchase medical care; that is, it lowers the per-unit price of care. Although there is an income effect caused by premiums or taxes paid to finance the insurance benefits, these income effects can be shown to be empirically negligible in their effect on the demand for care...” (Newhouse, 1978, p. 9).

All over the world, there are individuals in every country who are unable to pay for the health services they need directly or out of pocket, or they can be significantly disadvantaged financially by doing so.

Many types of health insurance, be it public or private, include only a limited set of services in low-income countries, which means they do not offer complete protection against financial risks. When people with low salaries and financial risk coverage become ill, they face a dilemma: they may be able to access (if available) health facilities and experience more impoverishment in paying for them, or they may give up treatment, stay ill, and risk not being able to work or function.

However, in Algeria, the national health care scheme provides basic coverage for prescription health goods to all covered Algerians (i.e. 34 million social insurers and beneficiaries, representing 80-87 % of the population).¹ Nonetheless, many living in rural areas continue to be deprived from proper health care. Algeria’s constitution makes it mandatory for any resident of the world to have health insurance and financial protection. This person will have to contend with something that can be offered by less reliable local care services or drive long distances to towns to access quality facilities. Any city-based hospitals often lack adequate resources and experts to handle such essential diseases. In general, patients with such unsafe illnesses are flown to another country where specific care is available.

The public health scheme, along with the National Workers Social Security Fund (Caisse Nationale d'Assurances Sociales des Travailleurs Salariés) and family donations, are funded by an equitable state donation. This is how, in terms of consultations, medication, hospitalization, etc., curative and preventative health care is given. The private healthcare sector in the country has evolved increasingly to compensate for the abysmal public healthcare system that is well below international benchmarks. However, no privileges or policies that are available in public hospitals are provided by these private facilities. Furthermore, in select cities, these private facilities are accessible in small numbers, but not everybody profits from them. To fill this gap, the Algerian government is doing its part and is building new hospitals with improved facilities.

¹ Mahfoud N. & Brahamia B., Evaluation of the share of pharmaceutical expenditure in health insurance expenditure in Algeria, National Seminar on Health Economic Assessment, 2012, P.20.

In the private health care sector, though, the patient himself bears responsibility for the health care facilities obtained.

On the other hand, an important consequence of being covered is that any extra health services consumed as a result of adherence to insurance—that is, any moral hazard—reduces well-being.

This extended essay is an expansion of a variety of studies. It was undertaken to explore how health insurance affects the actions of individuals, i.e. how would individuals act in their use understanding that they are protected and that their costs will be reimbursed.

This research work is also the subject of a descriptive study of many terms, such as health care, consumption of health products, health systems, etc. As well as highlighting the existence of several insurance systems and many approaches to the use of health goods.

2. Theoretical frame:

Several previous researches have sought to explain the effects of health coverage on the actions of patients and the use of healthcare goods. Among these studies, we've got:

Marc PERRONNIN's doctoral thesis in economics at Paris-Dauphine University (Paris 9), in 2013, entitled « **Effet de l'assurance complémentaire santé sur les consommations médicales : entre risque moral et amélioration de l'accès aux soins** » (Effect of supplementary health insurance on medical consumption : between moral hazard and improving access to healthcare).

This thesis is based on a theoretical research, it studies the most important reasons that affect the consumption of health care and the impact of complementary health insurance on this consumption. It is based on three other theses:

The 1st one was Buchmueller *et al.*'s thesis at the university of California, entitled: “**Access to physician services: does supplemental insurance matter? Evidence from France**”, it analyses the effect of being covered by a complimentary health insurance on the consumption of healthcare (goods & services). The research was based on data from the 1998 survey in which about 8000 households aged between 25 and above were interviewed, in other words, non-institutionalized (normal, who can live independently) French population. The results found that: insurance has a strong and significant effects on the utilization of physician services (individuals with complimentary assurance visit more often doctors).

The 2nd one was Grignon *et al.*'s which is thesis, entitled “**Does free complementary health insurance help the poor to access health care? Evidence from France**”. The research focused on the complementary health insurance plan in 2000 (France), it compares the evolution of expenditures before and after the plan using a sample of before and after one year from 2000.

The results revealed that CMU-C (couverture maladie universelle complémentaire) has no inflationist effect but it promotes access to medical care for those who were previously not covered.

General Introduction

The 3rd one was Franc *et al.* thesis which is entitled “**Supplemental health insurance and health care consumption: A dynamic approach to the moral hazard phenomenon**”, A panel data from a French mutual. They analyze a representative sample of BCHI (Basic Complementary Health Insurance) customers that includes 18,126 individuals. Analyze the effect in time of an increase in the marge of guarantee.

The effects of the additional complementary health insurance on the consumption of care is estimated from data brought from administrative files given by the mutual organization. It concluded that; the complementary insurance in France allows to complete the reimbursement of compulsory health insurance, the complementary health insurance improves access to care and it increases health spending in city medicine.

In the light of results from the first and third theses, we conclude that insurance coverage has no effect on health products prices.

The second study was conducted by El Omari’s thesis presented at the Quebec, Montreal University in 2007, presented as partial requirement of the master’s degree in economics, entitled « **Évaluation Des Impact de l’Assurance Sociale Maladie sur la Consommation des Soins de Santé par la Population Rural à Faible Revenu aux Philippines** » (Assessment of the impact of social healthcare consumption by rural population with low income in Philippines).

The main objective of this study was to assess the impact of the new Philippine social health insurance program “**Phil health**” on healthcare consumption by the low-income rural population. This research was based on a survey that has reached 12,586 Filipino households and interviewed 13,633 women aged between 15&49 and 4,766 men aged between 15&54, which collected information on 61,544 household members surveyed. It has used two econometric methods, namely matching and the evaluation technique by discontinuity.

There were 3 reports that claimed there is no substantial differential in health care use between mutualists and non-mutualists although the gap between these two is important for health care spending.

It also revealed that the poor patient visit the centers only in order to have births so the free treatment is important.

For government care coverage to cover low-income people, those responsible for these programs will need to convince the indigent beneficiaries that they will eventually access the guaranteed health care payments.

Another study was Arpah’s A.B *et.al* in 2016 had published in the International Soft Science Conference an article entitled: “**The Effect Of Health Insurance On Health Care Utilization: Evidence From Malaysia**” that has talked about the correlation between ownership of health insurance and overuse of health-care facilities, they have studied the effect of insurance ownership on hospital use in the sense of Malaysia.

The research uses data from the Malaysia National Health and Morbidity Survey III, and for this reason 14,223 respondents are selected. This research includes people older than 18 years.

The results indicate the moral hazard concern might not be widespread in the health insurance industry in Malaysia. The institutionalization of health insurance by intervention such

General Introduction

as universal health insurance will therefore be a viable scheme and give the people greater access to care.

The other work made by Feng's C. at Wayne state university in 2013, entitled: **"Insurance Choice And The Demand For Prescription Drugs Among Individuals With Chronic Conditions"**, This research focuses primarily on the application of private health care and prescription drug use and spending, it used an observational hierarchical model to analyze the determinants of health choices (insurance use, expenditure ...) using multiple equations. Data are given from previous MEPS+ red book survey (Basehelds interviewed, 5 years group, age 18-64).

It concluded that: health-related variables are less important than predicted in determining the health insurance status of people, health conditions make no varying decisions on whether to be insured and what type to select, insurance programs are favorably correlated with the use of prescription medications by all non-elderly people with chronic illnesses, particularly those with insurance coverage, Benefit coverage for all non-elderly people with health illnesses is less linked to out-of-pocket spending on prescription medications, and the value of associating private health care with the use of approved medications differs across circumstances.

In a research undertaken by Mahamat & Noussoura in 2016 at the University of Mouloud Mammeri, Tiziouzo, Algeria, for the obtention of a master degree in economic science. It is entitled **"Social protection in Algeria: Mechanisms in place to fight against social risks"**. The goal of this research is to study the structures of social security that have been placed in Algeria to protect against all social threats that can impact individuals. According to the findings of this study, social insurance is responsible for the social threats that are likely to impact the insured and their beneficiaries, but it remains constrained to the degree that it only insures the contributing workers. They recommend that the state should spend more in large-scale agriculture; improve market productivity and promote foreign direct investment to absorb unemployment and poverty; and, consequently, strike a balance between capital and short- and long-term funding spending, as well as stronger social and economic risk management.

Last but not least, Castaneda M. & Saygili M. (2016) published their article entitled: **"The health conditions and the health care consumption of the uninsured"** in the Health Economic Review journal. It's another research that examines the discrepancy between the health conditions and the health care consumption of uninsured patients relative to patients with private insurance, using a nationally representative data collection of inpatient hospital visits from the US. The findings suggest that uninsured people are, on average, in poor health circumstances. However, if we compare people in the same screening group, the uninsured are actually healthier, with less clinical problems and lower risk of death. This means that the uninsured are only referred to the hospital with more severe illnesses. This study suggests that uninsured people consume less health care. In fact, subject to patient admission and health check-up, the uninsured have smaller overall costs, less treatments and higher mortality rates.

3. Research Question:

For this purpose, we will try through this analysis to provide a reliable answer to the following research enquiries:

How would people's consumption behavior be when they are covered by healthcare insurance?

In addition, a variety of subsidiary questions on the subject need to be asked:

What are the specificities of healthcare goods and services? What are the factors that affect the use of health products? What is insurance in healthcare sector? Is there a real impact of insurance in the use of healthcare products?

4. Study hypotheses:

In order to answer our question, we have formulated the following hypotheses, the validation of these hypotheses will naturally depend on the research that will be carried out afterwards, as well as the field survey:

H.1: When individuals are covered by health insurance consume health goods and services more.

H.2: Generally, people-patients- behave rationally, when it comes to their health.

5. Framework of the study:

The curiosity developed on the insurance modules as well as the desire to seek further information were the main reasons for the selection of this subject. Though the significance of the study worldwide, a considerable gap of research in Algeria was noticed, thus were obliged to focus on international investigations related to our study background.

In order to better understand the effect of health insurance on the patient, a vulnerable user, considering the complicated and ethical nature of the healthcare industry, we were supposed to make a field research at two insurance companies, one at a basic insurance (CNAS) and the other one at a complementary insurance (CAAT). We wanted to make a comparison in the amount of consumption between the ones who are covered by the government and the ones who pays from their pockets.

Because of the current situation our world is facing, a practical internship within the organizations was not possible. Thus, we used the questionnaire approach as it represents a basic mode of analysis that is simple to create, obviously easy to use, and offers several objective outcomes. Even if all questionnaires look the same, their content will differ. The nature of our research makes it important to use the questionnaire, to collect standardized verbal knowledge, to be realistic and less costly.

We carried out a quantitative descriptive study of a sample of more than 170 participants in the region of Jijel through the use of a survey.

Therefore, our study led us, on its theoretical basis, to a documentary analysis, books, different theses, articles... strengthened by an analytical part (using an electronic survey). The work was divided into three (3) chapters:

General Introduction

The first chapter is about the characteristics of demand of healthcare, with some brief theories in the healthcare, some factors that influence this demand and examples about the health spending around the world are reviewed.

The second chapter is about healthcare insurance, social insurance programs and the social security system in Algeria.

The third chapter is devoted to the case study (the influence of healthcare insurance on patients' decisions).

Any scientific analysis is bas on research methodology and procedures in order to obtain accurate findings. Therefore, in order to check our conclusions and accomplish the aims of our work, a qualitative analysis was opted for. Finally, a systematic approach is proposed to carry out this analysis, which we believed to fit the nature of our research

This study set out to:

- Check the theories of our study whether they have been supported or invalidated by the questionnaire responses.
- Confirm or refuse our hypotheses;
- Propose solutions in case of affirming the existing problem.

However, it should be mentioned that our work has a number of limitations namely a significant lack of information, particularly amplified statistics, that's why our results were obtained on the basis of an online questionnaire posted in social media platforms (because of the current situation of social distancing). The disadvantage of this research method is that in many cases the respondents respond randomly.



**Chapter one:
Characteristics of
Healthcare Demand**

Chapter I: Characteristics of Healthcare Demand

1.1. Introduction:

Demand is, by definition, an economic term that defines the consumer's ability to pay a price for goods or services. If all other conditions remain stable, a rise in the price of a good or service will minimize demand and a decline in the price of a good or service will raise demand.²

Demand for health care is growing steadily. According to Dixon-Fyle & Kowallik (2010), by 2050, many countries will spend more than 20% of Gross Domestic Product (GDP) on health care. Also, according to Mwachofi & Al-Assaf (2011), it can be argued that health care is generally valued only to the extent that it improves health, which is why health is primitive in the description of consumer preference.

Thus, some important concepts or factors that influence demand in health care will be defined in this chapter in order to understand the concept of demand in health care. In addition, some examples of the health spending around the world will be mentioned.

² Rice T, Unruh L (2016) *The economics of health reconsidered* (4th edn.), Arlington VA: Health Administration Press, Quoted by: Babalola O., Consumers and their demand of healthcare, *Journal of health and medical economics*, Vol.3, N.1:6, 2017.

Chapter I: Characteristics of Healthcare Demand

1.2. Most widely known theories of demand and consumption in the healthcare sector:

1.2.1. Michael Grossman's model:

Health is demanded by consumers for two reasons. As a consumption commodity, it directly enters their preference functions, or, put differently, sick days are a source of disutility. As an investment commodity, it determines the total amount of time available for market and nonmarket activities. In other words, an increase in the stock of health reduces the time lost from these activities, and the monetary value of this reduction is an index of the return to an investment in health.³

Grossman (1972) relates health as a human capital, which improves productivity of people, it shows that good health is produced by individual through adaptation of different behaviors. In other words, good health of a person is a commodity produced by the individual. Therefore, it is quite clear that good health is important to any person irrespective his/her age. In order to achieve good health, Grossman (1972) presented a model where all individuals are born with an initial 'stock of health capital'.⁴

The central proposition of the model is that health can be viewed as a durable capital stock that produces an output of healthy time. It is assumed that individuals inherit an initial stock of health that depreciates over time-at an increasing rate, at least after some stage in the life cycle-and can be increased by investment. Death occurs when the stock falls below a certain level, and one of the novel features of the model is that individuals "choose" their length of life. Gross investments in health capital are produced by household production functions whose direct inputs include the own time of the consumer and market goods such as medical care, diet, exercise, recreation, and housing. The production function also depends on certain "environmental variables," the most important of which is the level of education of the producer that influence the efficiency of the production process.

Although several writers have suggested that health can be viewed as one form of human capital (Mushkin 1962, pp. 129-49; Becker 1964, pp. 33-36; Fuchs 1966, pp. 90-91)⁵

The main parameters in Grossman's model are depreciation rate (represented by age), cost of health investments (price of medical care), wage rate and education.

According to the Grossman model, age and other factors make health stock to depreciate which will in turn decrease the demand for health, because the marginal benefits of investment into health will decrease.⁶

³ Michael Grossman, On the Concept of Health Capital and the Demand for Health, The Journal of Political Economy, Vol. 80, No. 2. (Mar. - Apr., 1972), P.223-255.

⁴ Lakmal Weeratunga & Lakshman Dissanayake, Factors Influencing Demand For Healthcare Services Among The Elderly Women In Sri Lanka, International Journal of Advanced Research and Review, vol.2, N.4, 2017, P.35-47.

⁵ Lakmal Weeratunga, Ibid.

⁶ Ibid.

Chapter I: Characteristics of Healthcare Demand

1.2.2. Phelps and Newhouse's model:

THEORY OF A CONSUMER who has a premium in a health insurance contract is different from the normal consumer theory, there are two significant differences: the average price per unit increases if a certain amount of medical care is received within a given time, and uncertainty is present regarding future demand within the period.⁷

The impact of coinsurance on demand for medical services has been under discussion for several years. Some claim that it helps manage total expenditure by giving customers a choice in how much medical treatment they buy. Others claim that coinsurance is meaningless to preference, since a physician makes choices on the use of medical care for his patients. So, coinsurance clearly does affect the demand for services. Moreover, the impact of coinsurance varies across medical services in a systematic fashion depending upon the time price of the service. (Charles *et al* 1974).

There are three desirable features to explain the popularity of deductible. Firstly, administrative costs tend to be almost invariant to the size of the claim.¹ Consequently, insurance covering larger claims is more attractive than insurance covering smaller claims, because the payment ratio is higher. Second, the issue of adverse incentives can be more significant in the case of small cases than large ones. Specifically, as price elasticity decreases with overall investment, it becomes comparatively more advantageous to cover substantial losses. Finally, Arrow has shown that the optimal insurance policy for a given premium for risk-averse consumers does not have a deductible co-insurance.

In a longer, more detailed version of (Phelps and Newhouse 1973), Charles *et al* (1974) derived phrases relating to the responsiveness of the demand for medical care services to coinsurance, consumer rates for medical treatment, and time costs. they assume that consumers maximize an utility function in "other goods" (x) and health status (H) subject to a budget constraint. Medical care (h) is a homogeneous commodity that can be purchased in the market at a price of (p) per unit, and x can be purchased at a price of one per unit. There is a production function for H which uses h and time inputs (t). Denote the opportunity cost for time as (w) per unit of time, and let (T) be the amount of productive time available to the person. $T = T_0 - t * h$, - where T_0 is total time available and is fixed.

The consumer's level of health is considered random. This induces him to purchase insurance. The insurance contract specifies a coinsurance rate -the consumer pays C per cent and the insurer pays $(100-C)$ per cent of all incurred expenses during the period. Here, they are not concerned with the selection of C (Phelps 1973), but how the consumer reacts to a random loss, given his insurance policy. Assume that C has been previously chosen, or is imposed; in either event, C is fixed, and the premium (or tax) is prepaid. The total price is then the sum of the money price per unit $C * p$ and the time-price $w * t$ per unit.

Services with a relatively high time price, particularly medical office visits, exhibit relatively low coverage (or expense) of elasticity and relatively high time price elasticity. Services with a comparatively high price of income, such as home visits, display dramatically higher own-

⁷ Keeler E.B, Newhouse J.P. & Phelps C.E, Deductible and the demand for medical care services: the theory of a consumer facing a variable price schedule under uncertainty, *Econometrica*, vol.45, No.3, april,1977, P. 641-656.

Chapter I: Characteristics of Healthcare Demand

price elasticity. Money-price elasticities tend to be decreasing with the cost of coinsurance. The results of their study found strong evidence against the hypothesis that says “some persons feel coinsurance is irrelevant to decisions about consumption of medical services, because physicians make all the relevant choices”.⁸

Phelps and Newhouse (1974) demonstrate the effect of two main determinants on the demand for medical care: the state of health and the degree of illness incidence, on the one hand, and the cost of medication, on the other. The cost to the consumer varies depending on the health care scheme and the more or less fairness.

⁸ Phelps C.E. & Newhouse J.P., Coinsurance, the price of time, and the demand for medical services, *The review of economics and statistics*, Vol.56, No.3, Aug.,1974, P.334-342.

Chapter I: Characteristics of Healthcare Demand

1.2.3. Price Elasticity of Demand:

Price elasticity of demand is an economic indicator of the increase in the quantity demanded or purchased by the commodity in relation to its price change. Mathematically expressed, it is as follows:

$$\text{Price Elasticity of Demand} = \% \text{ Change in Quantity Demanded} / \% \text{ Change in Price}$$

Price elasticity is used by economists to explain how supply or demand increases as markets adjust and understand the workings of the actual economy. For instance, certain goods are very inelastic⁹, that is, their prices do not change much due to changes in supply or demand. For example, people tend to purchase petrol to get to work or fly around the world, and so, as oil prices increase, consumers are likely to also purchase exactly the same amount of gas. On the other hand, certain goods are very elastic¹⁰, and their price movements cause substantial changes in their demand or supply.¹¹

Price elasticity reflects a transition in the health insurance membership as the health benefit cost rises or reduces.

Therefore, a distinction must be made between individual-perspective price elasticity and insurer-perspective price elasticity. User-perspective price elasticity, also referred to as out-of-pocket, enrollee-perspective or employee-perspective price elasticity, shall only use the premium share charged by the insured person as the price. The insurer-perspective or overall market elasticity shall use the total premium as the amount, including both the individual and the sponsor's contributions to the premium. These price elasticities vary as any increase in the premium is not shared between the customer and the distributor in the same way as the previous premium was. It is particularly the case in US workplace environments, where the employer makes a constant dollar fee (which does not adjust as the rate rises), resulting in significantly higher insurer-perspective price elasticity relative to employee price elasticity.¹²

Unfortunately, there is little empirical evidence about how consumers respond to price differences and how they vary by type of health service (e.g. emergency room care, routine visits) and by individual characteristics (e.g., income, age, education, socio-economic status). This lack of research is largely due to the difficulties in detecting exogenous or indirectly induced demand fluctuations. For health care schemes, people select their policies using details that they – and not the company or insurers – provide regarding their health status. This "information asymmetry" may contribute to a preference bias in those individuals who plan to use more services than the average person or those who are risk-averse. As a consequence, every form of health incident or

⁹ **Inelastic:** is an economic term which refers to the static quantity of a good or service when its price changes. Inelastic means that, when prices rise, consumer purchase habits remain roughly the same, and when prices fall, consumer purchase habits also remain unchanged.

¹⁰ **Elastic:** Describe a difference in buyers 'and sellers' actions in relation to a rise in the price of the product or service.

¹¹ Kenton W., price elasticity of demand, Investopedia, April 29,2020, <https://www.investopedia.com>

¹² Pendzialek J., Stock S. & Simic D., Differences in price elasticities of demand for health insurance: a systematic review, The European Journal of Health Economics, vol.17, N. 21, 2016, P.6 - 21.

Chapter I: Characteristics of Healthcare Demand

shock associated with the individual's health status would be correlated with the currency assurance rate of the chosen program, creating an endogeneity issue that affects price elasticity estimates.¹³

¹³ Duarte F., Price elasticity of expenditure across health care services, journal of health economics, vol.31, 2012, P. 824-841.

Chapter I: Characteristics of Healthcare Demand

1.3. The types of healthcare goods and services:

Health goods and services are generally represented by: hospital care, ambulatory care, medical transport, drugs and other medical goods such as optics, prostheses, small equipment and dressings.¹⁴

1.3.1. Hospital care:

Can also be called Acute inpatient care, which is an active, short-term care episode including facility-based overnight stay and the presence of one of the following:

The need for active treatment of serious injury or illness, urgent medical or mental health condition or during initial recovery from surgery.

Care/monitoring provided 24/7 by a multidisciplinary team, which may include physicians, nurses (registered or practical), nurse practitioners, and other allied health professionals (pharmacist, physiotherapist, occupational therapist, registered dietitian, social worker, etc.)

Services provided at a minimum level of certain frequencies and intensity levels; Attendance and charting by a physician or delegate at least once per day. Close clinical monitoring at least three times daily based on delegated functions by the physician.

Access to diagnostic tests required to stabilize plan of care.

Acute inpatient care encompasses a range of clinical health care functions and treatments, including emergency medicine, trauma care, acute medicine, acute care surgery, critical care, obstetrics, gynecology, acute pediatric care, acute mental health, acute rehabilitation, acute palliative care and inpatient stabilization.

And there is also, continuing care which serves people who may not be ready for discharge from hospital but who no longer need acute care services. Also known as extended care, chronic care or complex continuing care, this type of hospital care provides ongoing professional services to a diverse population with complex health needs.¹⁵

In addition, it covers all fees received by private doctors in private institutions, public hospital appointments, and health supplies used in institutions.¹⁶

1.3.2. Medical transportation:

Medical transportation services are services which transport one or more patients, typically by land, from point A to point B.

There are several types of medical transport systems suitable for moving patients between hospitals and saving lives in case of an emergency. Such facilities are open to all customers, and

¹⁴ <http://www.financespubliques.fr> , viewed: 07/27/2020. At 01pm.

¹⁵ Definitions and Guidelines to Support ALC Designation in Acute Inpatient Care, Canadian Institute for health information (CIHI), at the heart of data, P.1, www.cihi.ca .

¹⁶ Adjerad R., Bergonzoni A., Boisguerin B *et al*, Health expenditure in 2018, DREES, France, 2019, P.20.

Chapter I: Characteristics of Healthcare Demand

are usually provided 24/7, 365 days a year. The severity of the situation, the mileage and the medical condition of the patient determines what type of transportation is required.¹⁷

IU group in their web site have identified various types of medical transports, this section explains each one in details.¹⁸

- **Non-emergency Medical Transportation**

Non-emergency ambulance transport is a specialist facility for the transport of people with a medical problem or disability that may not pose an urgent danger. Physicians arrange transport of people who have a chronic problem that prohibits them from flying. Law Firms rely on these facilities to bring the wounded person to a hearing, court appearance or interview.

Ambulatory transport is the most common method of non-emergency patient transportation. This is for people who do not require transportation support and who are able to walk, or who do require minimal assistance. Furthermore, stretcher medical support is possible, especially for patients suffering from back problems or who can not sit upright. Scheduling this service means that emergency assistance in transit or at the time of arrival is not required. The wheelchair transport services offer assistance to those who are confined to a wheelchair or are unable to walk alone. The vans and wheelchair lifts are powered by Cardiopulmonary (rescue breath) resuscitation-trained drivers. Wheelchairs are available for hire and the people with injuries are given extra care. The use of this service again implies that at the time of service, the patient does not need immediate emergency care.

Medical Flight Escort Services (MFES) are equipped for patients who are safe enough to fly by air but who need medical care because they can not converse or sit upright. Using this escort service means that a private air ambulance is not required.

Health courier services are available to transport human blood, organs and other biological matter to and from hospitals and research institutions.

- **Emergency Medical Transportation:**

The Basic Life Support Ambulance (BLSA) is built for patients who need medical help while in transit. Emergency Medical Technicians (EMTs) have on-board bandages, EpiPens, heart monitors, splints, oxygen tanks and other medical equipment at all times. A transport agent will arrange BLS transport before the patient's discharge date to transport him / her to his / her house, another care facility, a rehabilitation center, an assisted living group or a psychiatric center. Likewise, Advanced Life Support ambulances are operated by highly trained paramedics. Once on board, paramedics are administering shots, medications, checking vitals, and stabilizing the patient for transportation to the emergency department or trauma center.

1.3.3. Ambulatory care:

¹⁷IU Group, Types of medical transportation services, <https://interpretersunlimited.com> . viewed: august 1th 2020.

¹⁸ IU Group, Ibid.

Chapter I: Characteristics of Healthcare Demand

Ambulatory care or outpatient care is medical care provided on an outpatient basis, including diagnosis, observation, consultation, treatment, intervention, and rehabilitation services. Patients seeking emergency treatment don't need to spend a night in a facility. They're free to leave the doctor's office, outpatient clinic or hospital until the treatment is over. Often, they have to wait as medication is fading off just to make sure that there are no complications. However, as long as there are no significant complications, patients will not have to spend the night under observation.

Not spending one or more nights in a medical facility has two big advantages for patients.

First, patients are able to recover in the comfort of their own home. Instead of remaining in an uncomfortable bed and sterile room, they can find a comfortable position on their couch, chair or bed and enjoy an activity of their choice. They even can enjoy their own food rather than hospital food. (Of course, any activity or food must not contradict restrictions that are given by a healthcare provider.)

Second, outpatient procedures almost always cost less than comparable inpatient procedures. Staying in a hospital overnight for observation isn't cheap, and patients can save a lot by recovering at home instead of in a hospital room. Even patients who have good health insurance can still see significant savings by electing to have an outpatient procedure rather than an inpatient one. In many cases, the difference between outpatient and inpatient care is thousands of dollars.¹⁹

1.3.4. Drugs:

The French PHC (Public Health Code) (article L.5111-1) defines medicinal products as follows: "any substance or composition presented as having curative or preventive properties with regard to human or animal diseases, as well as any substance or composition which may be used in humans or animals or which can be administered to them, with a view to establishing a medical diagnosis or to restore, correct or modify their physiological functions by exerting a pharmacological, immunological or metabolic action."²⁰

Drugs are marketed by pharmaceutical companies. They are recommended for patients by two types of entities: on the one hand, pharmacies and, on the other hand, indoor pharmacies for use in healthcare establishments and facilities for elderly dependents. Laboratories are able to sell drugs directly to pharmacies and public and private hospitals. The pharmaceutical market corresponds to the sales of laboratories producing drugs.

In France, pharmaceutical industry turnover (valued at the manufacturer's price minus tax) marginally decreased by 0.4 percent in 2018, reaching 28.9 billion EUR. Those figures for the domestic pharmaceutical industry should be put into comparison with those for international trade, even though they are not directly comparable: French pharmaceutical exports accounted for 27.0 billion EUR in 2018, a rise of 7.3% compared to 2017, and imports of 19.3 billion EUR (+ 5.4% compared to 2017). In 2018, 21.3 billion EUR, or nearly three quarters of drug sales in France,

¹⁹ Peconic bay medical center, The difference between inpatient and outpatient care, mar 14, 2017. <https://www.pbmhealth.org/news-events/blog/>

²⁰ Ministry of Solidarity and Health, 05/2018, <https://solidarites-sante.gouv.fr/soins-et-maladies/medicaments/le-bon-usage-des-medicaments/article/qu-est-ce-qu-un-medicament> viewed: 22/07/2020.

Chapter I: Characteristics of Healthcare Demand

came from pharmacies (sales in cities), including 0.5 billion EUR in the departments and regions of Overseas (DROM). The pharmaceutical market is made up of 10 per cent non-refundable drug value and 90 per cent reimbursable drug value. The majority of the revenues concern hospitals, with a 26.3 percent share in 2018 compared with 11.9 percent in 1990.²¹

France is the country with the largest pharmaceutical per capita spending in 2004: \$524 PPP per capita. It is closely followed by Italy with a cost of 510 PPP dollars per capita. For Denmark, the per capita pharmaceutical spending is the lowest: double that of France, which will not be very far from British spending calculated at \$300 per capita, according to PACT data. It should be recalled, however, that PACT data lead to an underestimation of consumption in the context of that measured in other countries as PACT data do not include self-medication and are net of tax calculated. In 2004, Spain and Italy were the two countries with the largest proportion of pharmaceutical spending in overall health spending, 22.7% and 21.2% respectively. Pharmaceutical spending accounted for 16.8 per cent of health expenditure in France in 2004. Their weight is 8.5 per cent of health spending in Denmark.²²

1.3.5. Other medical goods:

Expenditure on medical goods (total, public, private) includes medical goods for out-patients and dispensing-related services such as retail trade, fitting, repair and renting of medical goods and appliances. Public pharmacies, opticians, sanitary stores, and other specialist or non-specialized retail traders like mail ordering and teleshopping services are included.²³

Medical goods shall include tools, items, documents, procedures, systems or services on or in association with which the licensed marks are used and used primarily by health care practitioners to diagnose, treat or prevent disease or injury.²⁴

²¹ Aubert JM., healthcare spending in 2018, health accounts results, DREES santé, 2019, P.48.

²² Grandfils N. & Hauser S., Pharmaceutical consumption and public health indicators, study report prepare for the LEEM, IMS, 2009, P. 155-886.

²³ OECD Health Data 2001: A Comparative Analysis of 30 Countries, OECD, Paris, 2001, data sources, definitions and methods, November, 2001. <https://stats.oecd.org> viewed: 22/07/2020.

²⁴ Kimberly-Clark, <https://lawinsider.com> viewed: 22/07/2020.

Chapter I: Characteristics of Healthcare Demand

1.4. Health spending around the world:

- **In France for example:**

France is one of the European countries where most of the money is spent on health. At the same time, it is also the country where the share of care which remains the direct responsibility of households (families) is the lowest.

Health expenses, in other words the expenses of care and medical goods, have reached 203.5 billion euros in 2018, or 8.6% of GDP. This represents 3,037 euros per inhabitant on average. This amount is divided between hospital care (46%), city care (27%), drugs (16%) and other expenses (10%) such as medical transport, optics etc.

Healthcare spending continued to increase in 2018 (+ 1.5%) but less than in 2017 (+ 1.7%) and 2016 (+ 2.1%), in particular due to the slowdown in consumption of hospital care which is linked to the shift to ambulatory care. City care, which accounts for only 27% of the total, thus becomes the main contributor to the growth in health spending. They increase at the general practitioner, because 2018 was the first full year of application of the new consultation price of 25 euros. Among specialists, the increase in expenses can be explained in particular by an increase in certain technical procedures (scanner, MRI). Spending on drugs remains stable: the arrival of new expensive drugs is offset by a general drop in prices. The contribution of social security to the health costs of the French continues to increase, reaching 78.1% in 2018. The share of social security increased by 0.2 point on average per year between 2009 and 2018, due to the sharp increase in the number of patients covered at 100% for long-term illnesses (LTI). A consequence of the aging of the population and the development of chronic pathologies. In return for the increase in Social Security, the participation of households in health expenditure continues to decrease. In 2018, households had to pay 7% of health costs out of their own pockets, after reimbursement from social security (78.1%) and mutual funds (13.4%). This remaining charge continues to decrease, from 7.5% in 2017 and 7.7% in 2016. This represents an average of 214 euros per person per year. This is of course an average, the bill varying according to the characteristics of the households: age, state of health, etc. If we add to the expense of care and medical goods, long-term care expenses, daily allowances in the event of sick leave, subsidies to the care system, etc. (to obtain the DSCi, an indicator used at international level), France is one of the countries of the European Union where health expenditure is the highest (11.3% of GDP, i.e. 1 point more than the average for the 'EU 15) while the share of out-of-pocket costs for households is the lowest among OECD countries (9% of the DSCi).²⁵

- **In the United States:**

Recent statistics from the Organization for Economic Cooperation and Development (OECD) indicate that the United States spends far more on health care than any other nation. In 2002, the United States spent \$5,267 per capita—\$1,821 more than Switzerland, which had the

²⁵ Renault M., Health expenditure reached 3,037 euros per individual in 2018, Le Figaro en line newspaper, 10th September 2019. <https://www.lefigaro.fr>

Chapter I: Characteristics of Healthcare Demand

second-highest per capita expenditure, and \$3,074 more than the median OECD nation (Anderson *et.al*, 2005). Studies have been found that the United States spends much higher costs than most nations for pharmaceuticals, hospital stays and doctor services.²⁶ This price differential was maintained in 2002. For example, the average hospital day cost in the United States in 2002 was \$2,434, compared to \$870 in Canada and much less in other OECD countries. The United States still spends much higher rates for medical and prescription care. Half of the disparity can be explained by higher U.S. wages and housing costs. However, even after correcting for each country's gross domestic product (GDP) per capita, US health spending is already \$2,037 higher than the projected estimate.

During the 1970–2002 period, many OECD countries relied on supply restrictions to manage health spending. On the other hand, the United States relied mainly on demand-side strategies. Restrictions on equipment included restricting the amount of hospital beds that could be built; restrictions on the distribution of medical technology; limitations on the number of doctors; limitations on what specialist physicians could enter; and medication formulations. The disparity in US health spending could be attributed to a lack of procurement restrictions, increased access to new innovative technology, and a lack of waiting lists.²⁷

U.S. health care spending grew 4.6 percent in 2018, reaching \$3.6 trillion or \$11,172 per person. As a share of the nation's Gross Domestic Product, health spending accounted for 17.7 percent.²⁸

- **In Algeria:**

The mechanism for funding health services at the time of independence relied on the collective investment of the province, local areas where it was calculated at 60 per cent of the overall health spending, only to make the state free of medication in 1974 and to eliminate the lump-sum price scheme, allowing the state's commitment. In addition to social insurance, a large amount of health spending is funded by the national general budget of arbitrariness, which is also included in the national finance act for health care, medical research and medical similarities. (Boulton *et.al*, (2005)

By 2015, Algeria had a population of 39 million, the Gross Domestic Product (GDP) was \$12,750 per capita (2012) and the Human Development Index (HDI) was rated high (0,745). In 2014, the health share of government spending was about 9.9%, with US\$ 932 per capita (73 per

²⁶ G.F. Anderson et al., “It’s the Prices, Stupid: Why the United States Is So Different from Other Countries,” *Health Affairs* 23, no. 3 (2003): 89–105; Quoted in: Zaters *et al*, Health spending in the united states and the rest of the industrialized world, *Health affaires* , Vol.24, No.4, 2005, P. 903-914.

²⁷ Hussy *et al*, Health spending in the united states and the rest of the industrialized world, *Health affaires* , Vol.24, No.4, 2005, P. 903-914.

²⁸ <https://www.cms.gov/Research-Statistics-Data-and-Systems/Statistics-Trends-and-Reports/NationalHealthExpendData/NationalHealthAccountsHistorical>.

Chapter I: Characteristics of Healthcare Demand

cent public). Access to healthcare is segmented and consists of three sub-sectors: members of the NSIF (Caisse Nationale de Sécurité Sociale), the public sector and the business sector.²⁹

The association between health and economic development has been thoroughly explored in empiric terms, although evidence is conflicting. In comparison, most empiric analyses have concentrated on developing countries using panel results. A country-specific research on developed countries, such as Algeria, is also comparatively rare.³⁰

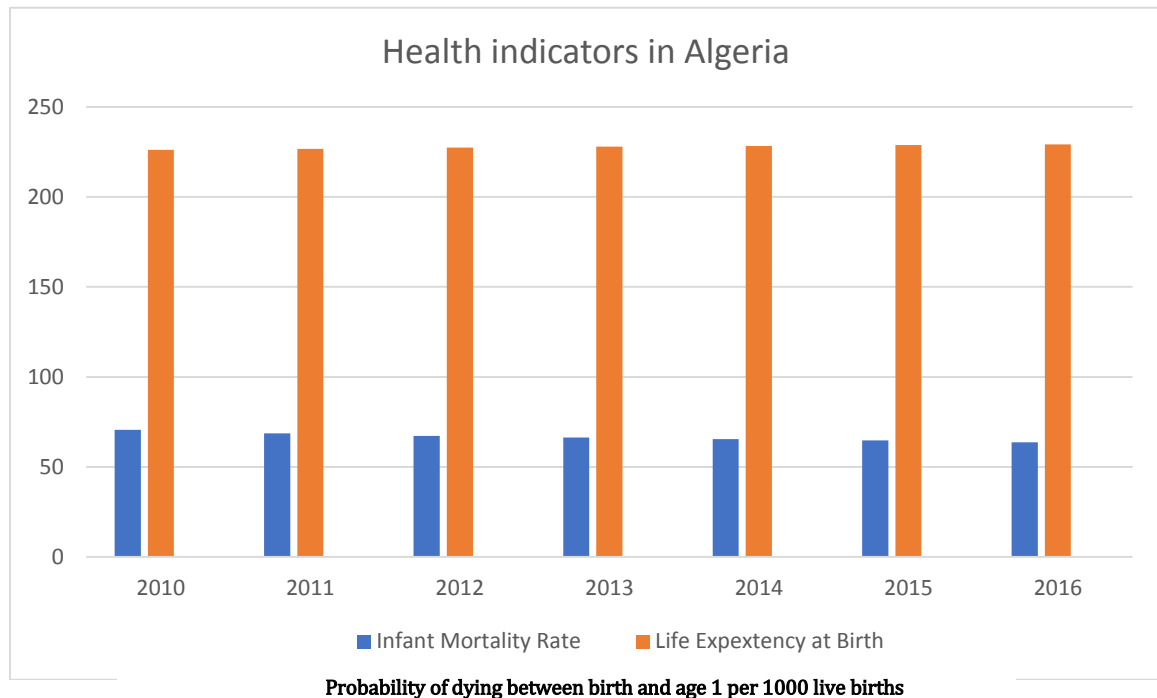


Figure 1 : Health Indicators in Algeria

Source: Humainitarian Data Excgange

The next figure shows the expenditure on health as a proportion of total government development expenditure in Algeria for the period 1974 to 2014. It is evident that expenditure increased steadily during the period.

²⁹ Scherer M.D.A. *et al*, Challenges for work in healthcare: comparative study on University Hospitals in Algeria, Brazil and France, *Science & Collective Health*, Vol.23, No.7, 2018, P 2265-2276.

³⁰ Boussalem F., Boussalem Z. & Abdelaziz T., The relationship between public spending on health and economic growth in Algeria: Testing for co-integration and causality, *International Journal of Business and Management*, Vol.2, No.3, 2014, P. 25- 39.

Chapter I: Characteristics of Healthcare Demand

Figure 2: Proportion of government development expenditure on health (percent) And GDP in Algeria during (1974-2014)

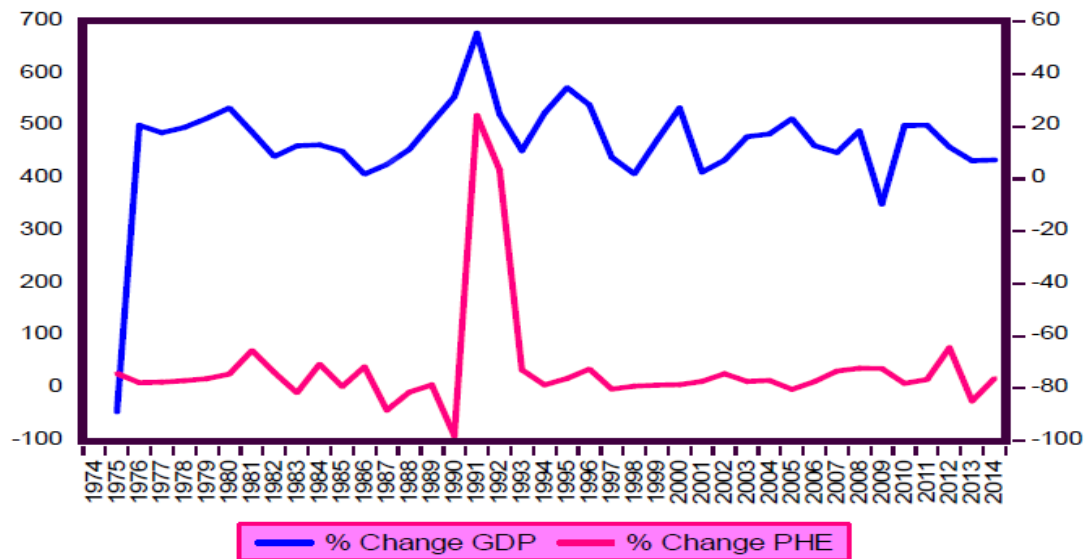


Figure 2: Proportion of Government Development Expenditure on Health ‘percent) and GDP in Algeria during (1974-2014)

source: International Journal of Business and Management Vol. II (3), 2014

Country	Year	% GDP
France	2017	11.31
United States	2017	17.06
Algeria	2017	6.37

Table 01: differences in health spending around the world in 2017.

Source: <https://data.worldbank.org>.

Chapter I: Characteristics of Healthcare Demand

1.5. Factors influencing the consumption of healthcare:

In the practice of regulating healthcare demand, individuals differ in terms of their socio-economic and health characteristics.

1.5.1. Ageing:

1.5.1.1. Challenges in responding to population ageing:

There is no 'typical' older person. Some 80 year-olds have physical and mental capacities similar to many 20 year-old. Other people experience significant declines in physical and mental capacities at much younger ages. A comprehensive public health response must address this wide range of older people's experiences and needs.

Globalization, technological developments (e.g. in transport and communication), urbanization, migration and changing gender norms are influencing the lives of older people in direct and indirect ways. For example, although the number of surviving generations in a family has increased, today these generations are more likely than in the past to live separately. A public health response must take stock of these current and projected trends, and frame policies accordingly.³¹

1.5.1.2. Demographic shift:

People worldwide are living longer. Today, for the first time in history, most people can expect to live into their sixties and beyond. By 2050, the world's population aged 60 years and older is expected to total 2 billion, up from 900 million in 2015. Today, 125 million people are aged 80 years or older. By 2050, there will be almost this many (120 million) living in China alone, and 434 million people in this age group worldwide. By 2050, 80% of all older people will live in low- and middle-income countries.

The pace of population ageing around the world is also increasing dramatically. France had almost 150 years to adapt to a change from 10% to 20% in the proportion of the population that was older than 60 years. However, places such as Brazil, China and India will have slightly more than 20 years to make the same adaptation.

While this shift in distribution of a country's population towards older ages – known as population ageing - started in high-income countries (for example in Japan 30% of the population are already over 60 years old), it is now low- and middle-income countries that are experiencing the greatest change. By the middle of the century many countries for e.g. Chile, China, the Islamic Republic of Iran and the Russian Federation will have a similar proportion of older people to Japan.

A longer life brings with it opportunities, not only for older people and their families, but also for societies as a whole. Additional years provide the chance to pursue new activities such as further education, a new career or pursuing a long-neglected passion. Older people also contribute in many ways to their families and communities. Yet the extent of these opportunities and contributions depends heavily on one factor: health.³²

³¹ World Health organization, ageing and health, 2018. <https://www.who.int> seen 04/10/2020.

³² <https://www.who.int> seen 04/10/2020, 4:30pm.

Chapter I: Characteristics of Healthcare Demand

Population ageing is a common feature of many developed and developing countries in the world today. This phenomenon is occurring mainly due to the decline in fertility and mortality and resultant increase in the life expectancy which is accompanied by socio-economic developments of countries. The ageing of the population will have a major impact on the organization and delivery of health care. Of particular importance will be the shift from acute to chronic illnesses and the likely growing shortage of health care workers, especially nurses and para-professionals. The ageing population will require a special focus on chronic diseases, such as Alzheimer's disease, heart disease, and osteoporosis, rather than acute illnesses. Hence, the type of medicine will need a shift from onetime interventions that correct a single problem to the ongoing management of multiple diseases and disabilities; doctors and patients will have to have an ongoing relationship designed to help patients cope with illnesses rather than curing them.³³

Declining fertility worldwide is contributing to a dramatic change in the population's age structure. Aging is now a common phenomenon in Algeria. According to census statistics, the age pyramid base has decreased sharply, and the age and gender composition of the population has shifted dramatically as a result of all the demographic trends of the past. These changes in the age structure are a strong indication of the fundamental changes that are taking place and of the highly significant effects that can be predicted in the future: basic needs (in terms of work, schooling, housing, health, regional planning, financing of pensions, transport, etc.).³⁴

It has already been identified in Algeria that by 2040³⁵ there will be more people over 60 than people under 20. The over 60s, measured at 2.2 million in 2002 and nearly 2.6 million in 2008, would be about 4.3 million in 2020 and 6.7 million in 2030. This reality heralds a big threat for Algerian civilization over the coming decades.³⁶

The growth in health spending can also be linked to the deformations of the population structure in favor of the older age groups. In fact, in terms of care, consumption by the elderly is two to three times greater than that of young adults

The proportion of elderly people has increased significantly in recent years, with a negative impact on health expenditure which continues to increase due to the improvement in life expectancy and the increase in their costs of care (especially the costs of diseases of civilization).

The mechanical impact of aging on expenditure must, however, be supplemented by an analysis of the modes of care for each age. In addition, the generational effects in the use of the health care system must be taken into account. .³⁷

³³ Lakmal Weeratunga & Lakshman Dissanayake, Factors Influencing Demand For Healthcare Services Among The Elderly Women In Sri Lanka, International Journal of Advanced Research and Review, vol.2, N.4, 2017, P.35-47.

³⁴ Sahraoui S., The impact of the aging of population on retirement expenditure and health expenditure in Algeria, doctorate in demography, Montesquieu university –Bordeaux VI, Doctoral school of economic science, management and demography, Bordeaux, France, 2012, P.51.

³⁵ Dumont, G-F., Aging and “gerontocroissance”: factors, definitions and types. Territories facing aging in France and Europe, Géographie-Politique-Pro prospective, ellipses, Paris, 2006, P. 405.

³⁶ Sahraoui S., *Ibid.*

³⁷ Mahfoud N., Brahamia B.& Yves C., Drug consumption and control of health expenditure in Algeria, Algerian institutions performance magazine, N.11, 2017, P.41-54.

Chapter I: Characteristics of Healthcare Demand

Table 02: Evolution of the age structure (in%) of the Algerian population of 1948 to 2008 (according to censuses)

Groupe d'âges	1948	1954	1966	1977	1987	1998	2008
0-4	14,7	17,3	19,4	18,8	16,6	10,9	10,2
5-9	14,5	13,6	14,8	15,8	14,9	12,3	8,48
10-14	13,7	11,7	13,0	13,3	12,6	13,0	9,56
15-19	10,1	9,9	9,1	10,3	10,9	12,0	10,67
20-24	7,7	9,1	6,8	8,5	9,7	10,0	11,10
25-29	6,9	6,8	6,6	6,5	7,3	8,6	10,07
30-34	6,2	6,2	6,0	4,3	6,1	7,2	8,03
35-39	5,9	4,9	5,0	4,4	4,6	5,7	6,86
40-44	5,1	5,2	3,9	4,0	3,2	4,8	5,89
45-49	4,5	3,6	3,3	3,4	3,1	3,8	4,76
50-54	3,3	4,1	3,0	2,6	2,9	2,6	3,94
55-59	2,4	2,2	2,5	2,3	2,4	2,4	3,13
60-64	2,1	2,2	2,2	1,8	1,8	2,1	2,08
65-69	1,3	1,2	1,6	1,6	1,4	1,8	1,85
70-74	1,1	1,4	1,2	1,1	1,0	1,1	1,48
75 et +	0,3	0,4	1,6	1,3	1,5	1,6	2,09
Total	100	100	100	100	100	100	100

Source: Sahraoui S., The impact of the aging of population on retirement expenditure and health expenditure in Algeria,

1.5.2. Demographic change:

The structure of the population is another important parameter to take into account. From the analysis carried out based on data from the National Statistics Office, the age pyramid shows a narrowing of its base and a gradual widening towards the top. Thus, in 1990, we noticed that the age group of 0-14 years represented more than 43% and the category of 65 years almost 4%.³⁸

Household demographic characteristics also influence healthcare consumption. Overall, consumer outpatient spending continues to reduce with the size of the household. Above all, single-parent families have systems of consumption which vary from those of other households. All other things being equal, they therefore have hospital expenses 19 per cent higher than those of couples with children. On the other hand, their outpatient expenses are lower by 14%, especially pharmacy expenses (-20%), (specialists-20%), (but also general practitioners (-11%)). Furthermore, their risk of incurring expert, biochemical or optical expenditures during the year is also lower.³⁹

³⁸ Mahfoud N., Brahamia B. & Yves C., *Op.cit.*

³⁹ Raynaud D., Individual determinants of health spending: the influence of social category and complementary health insurance, Studies and results, N. ° 378, February 2005, P.7.

Chapter I: Characteristics of Healthcare Demand

The demographic question in Algeria has become a concern for several decades. The latest censuses show an average annual natural increase of 2.11%. According to the same source, the volume of the Algerian population increased from 25 million inhabitants in 1990 to 37.1 million in July 2012, that natural increase of 48.28% within 22 years. These findings represent so many challenges and issues for the population, the management of which requires a policy which should be based on expanding access to health services.⁴⁰

1.5.3. Age:

The rise in health care spending with age is largely related to the degradation of the quality of health. Expenditure on health care rises with age, with a sharp rise in hospital spending after the age of seventy.

The study conducted using data from the EPAS-SPS⁴¹ pairing shows that spending on adult health services rises with age, growing from age 50. Until the age of 70, it is city care spending that grows faster with age than hospital care, and then the situation is reversed: after the 80s, hospital spending is almost four times higher than the average. For several French and foreign studies, the growth of this spending is explained by the deterioration of the state of health and by the growing likelihood of age of dying in the year, rather than by a particular impact of age. Obviously, the last year of life causes very high care costs, particularly hospital care. Across the United States for example, for policyholders who die in the year, Medicare (public health insurance reserved for individuals aged 65 and over) costs are 7 times greater than for survivors. In France, in 2002, the average expenditure for a person who died during the year was €13,500, three quarters of which was for hospitalization, while the overall total expenditure was limited to €1,800.⁴²

1.5.4. The social professional category:

The disparities in total social spending should be investigated using comparable age and gender systems. This allows a close link between the individual care consumption and the reference person's socio-professional category in the household to be emphasized.

Accordingly, overall health spending is the highest for households where the reference individual is an unskilled worker (+18 percent relative to the average), while the lowest spending is found in the most social groups. Favored, managers and intermediate careers-9 percent). Skilled workers (+ 1 percent) and employees (+ 7 percent), for their part, are slightly higher than ever. Skilled workers (+1 per cent) and employees (+7 per cent), for their part, are slightly higher than average care expenses.

However, the higher total health expenditure of unskilled workers is due solely to their hospital expenses. At the same age and sex, the latter actually decreases as the socio-professional category of the household increases. Unskilled workers have hospital expenses 42 per cent higher than the average, while managers and intermediate workers spend 21 per cent and 20 per cent less.

⁴⁰ Mahfoud N., Brahamia B.& Yves C., Op.cit.

⁴¹ Permanent samples of social insureds - health and social protection (Échantillons permanents des assurés sociaux – santé et protection social).

⁴² Raynaud D., Op.cit., P.4.

Chapter I: Characteristics of Healthcare Demand

Accordingly, the share of hospitalization in total healthcare spending is just 38 percent for managers and intermediate occupations, while it is 45 percent and 46 percent for professional workers and staff, respectively, and hits 53 percent among the unskilled.⁴³

1.5.5. Incomes:

Certain factors affect the likelihood of forgoing coverage for financial purposes beyond the benefit or not of the supplemental health benefits. First, and obviously, household income plays a major role in those behaviors of resigning. Therefore, in contrast to a household whose monthly income per consumption unit will be between €990 and €1,300, all other factors are equivalent, the probability of forgoing treatment is 1.4 times higher for households whose income is less than €550 and even 1.3 times higher between €550 and €840, although it is lower (0.7) than €1,300.⁴⁴

Regarding the likelihood of consuming care in the year, a slight positive effect of income appears for ambulatory care, people from households with a monthly income of less than €840 per unit of consumption having a lower likelihood of seeking outpatient care. On the contrary, the effect of income on the probability of hospitalization, which is lower than €690, is negative. In this respect, it is possible that better coverage by compulsory health insurance of hospital expenses will lead the poorest households to go to the hospital, which limits the expenses to their charge.⁴⁵

Year-over-year increases in household income have improved living standards and household purchasing power, especially for health products (health services and medicines). Also, the preference of individuals for branded products and good quality service is increasing health spending in Algeria. Table below traces the evolution of workers' wages in Algeria between 2000 and 2011, recording an evolution rate of almost 28% during the entire period.⁴⁶

Table 03: Evolution of wages in Algeria between 2000 and 2011 in billions of Algerian Dinars.

Année	2000	2005	2010	2011	Evolution en %
Masse salariale	885	1363	2918	3818	27,63 %

Source: ONS

1.5.6. Level of education:

Those from families where the reference person has an educational level at best similar to elementary school have higher health costs, all other factors are equal, than people belonging to a family in which the reference person has a better educational level. By comparison, they are less likely to meet with a doctor, or suffer dental or medical charges. Their professional costs are much smaller, too. Thus, the opposition between hospital care, on the one hand, and specialized dental and optical care, on the other, confirms that the specific influences of the social category, income

⁴³ Raynaud D., Op.cit., P.2.

⁴⁴ Raynaud D., Op.cit., P.9.

⁴⁵ Raynaud D., Op.cit., P.6.

⁴⁶ Mahfoud N., Brahamia B.& Yves C., Op.cit.

Chapter I: Characteristics of Healthcare Demand

and education all play in the same direction. In this regard, it is the socio-professional category of the family that appears to be the strongest link with the consumption of care, with income playing a more limited role, while at the same time determining the role of the educational level. Indeed, the lack of secondary education appears to discriminate in terms of access to care rather than the level of education attained. Thus, there does not seem to be a significant difference between the care consumption of people from households whose reference person has a higher education, or who have just reached a high school level, those who have not reached a secondary level with hospital-oriented consumption.

Nonetheless, due to the modeling approach which does not take into account the associations which otherwise exist between socio-professional group, income and level of education, these findings must be treated with caution.⁴⁷

1.5.7. Area:

Travel costs to health centers limit the access of a significant proportion of the indigent participants to health services. The gap from medical facilities is perceived by 58 per cent of family heads to be a major handicap in accessing health care.⁴⁸

The indigent went mainly to clinics for births treated by healthcare professionals, although this section of the population was not affected by any other forms of care. The author suggests for this problem the Promotion of local health care facilities by engaging in the building of health centers at the level of Barangays (villages) or by arranging daily hospital visits or caravans to help the poor resolve the issue of transportation which is a big handicap for most of the poor.⁴⁹

The main factors that explain the disparities in individual spending on health care are first of all health status, then age and sex. Healthcare spending significantly increases with age, with hospital spending increasing above 70 years. Moreover, community medical costs for women and men's health expenses are greater. But other aspects also play a role: in particular, a social environment for the working class, modest income, lack of secondary education or belonging to a single parent family translates into a method of recourse to hospital-oriented care more than urban medicine. Such lower odds of ambulatory treatment will also show less regular prevention habits and subsequent patient control, contributing to higher hospital costs.

In addition to these properties of the households from which the person comes, the benefit of complementary health insurance also plays an important role in the use of care. In general, by reimbursing the user fee and sometimes part of the excess fees, and thus reducing the payment to be made by individuals, additional health insurance may actually encourage them to take more care. This does not necessarily contain over-consumption or waste, as the available data does not allow us to estimate an "optimal level" of healthcare use. Thus, the implementation of Universal

⁴⁷ Raynaud D., Op.cit., P.6.

⁴⁸ El Omari SD., Changing impacts of social health insurance on healthcare consumption by rural low-income population in the Philippine, Master degree, Economic, Quebec university, Montreal, 2007, P.35.

⁴⁹ El Omari SD., Ibid.P.38

Chapter I: Characteristics of Healthcare Demand

Health Coverage allowed beneficiaries to employ the services they wanted, but for financial reasons they claimed they had previously had to give up, or delay.⁵⁰

⁵⁰ Raynaud D., Op.cit., 2005, P.7.

Chapter I: Characteristics of Healthcare Demand

1.6. Conclusion:

The need for health insurance results from the consumer's need to have healthy quality of life. Many people tend to be well rather than ill. Another factor that makes healthcare different from most other goods and services is that it is an investment at the same time. The money customer spends on staying safe now will also help the consumer in the future. Another key feature of health care is that demand is relatively inelastic (Ionut, Taranu (2015)). If the consumer is ill and needs medical care, the consumer will purchase healthcare services at almost any price. Consumers' willingness to afford healthcare is ultimately constrained by the profits of their clients, but consumers are able to trade off spending on several other items to afford the medical services they need.



**Chapter Two:
Insurance in
Health Sector**

Chapter II: Insurance in the Health sector

2.1. Introduction:

Unlike other products or services, the standard of wellbeing makes it impossible to find the perfect alternative market. Health is not a marketable product. "Good health" cannot be shared by consumers.

Furthermore, like in any other insurance market, there are big communication problems in the health insurance market. First, the adverse selection process predicts that people with a greater risk of requiring medical services are more likely to purchase health insurance. Second, the moral hazard problem means that individuals with health insurance are more likely to consume health care. Second, the moral hazard problem means that those with health insurance use more health services.

This chapter will attempt to provide an explanation of a number of problems, health systems, as well as social security in Algeria and all over the world.

Chapter II: Insurance in the Health sector

2.2. The general theories of insurance:

2.2.1. Health Demand and Influencing Factors:

Demand is an economic concept and refers to the provision of any asset in exchange for a desired good or service. Need is related to demand but these are different concepts. While demand refers to economic change, need describes the lack of goods or services sensed individually (Scott & Ryoo, 2007). When economists discuss the demand for healthcare services or other goods and services, they speak of solvency and requests.

Healthcare demand should not be confused with desire and need. For instance, if a person suffers from toothache owing to tooth decay, but he/she does not go to the dentist and postpones going, this represents a need but not demand. The health need, however, is essential and is an important need for the continuation of life; it is a significant factor affecting the demand for healthcare services (Orhaner E, 2006).

Individuals make choices about medical care. They decide when to visit a doctor when they feel sick, whether to go ahead with an operation, whether to immunize their children, and how often to have checkups. The process of making such decisions can be complicated, because this may involve accumulating advice from friends, physicians, and others, weighing potential risks and benefits, and foregoing other types of consumption that could be financed with the resources used to purchase medical care. According to Grossman (1972), consumers demand health for two main reasons; as consumption of goods (which allows the consumer to feel better) and investment goods (good health status increases the consumer's quality of life and productivity) (Isik AK, Mutlu A. 2012).

Healthcare demand is affected by many factors, such as price; income preferences; financing methods; physical facilities; and the health attitudes and behaviors of healthcare personnel (Unal E. 2013). Price elasticity is low in healthcare because it is of vital importance to life (Toprak I.1982). Thus, healthcare demand is a little affected by price changes (Karaca Z. 2011). The relationship between demand and price can be reduced to zero in countries where healthcare services are free and provided by the governments (Isik & Mutlu, 2012).

Price elasticity can be changed according to the type of the service; for example, price elasticity is higher in the pharmaceutical and therapeutic tools than in physician and hospital care services (Toprak, 1982). The price is another factor that has an impact on the demand for health services and its effect is higher than price (Karaca, 2011). When other factors affecting the demand are constant, income elasticity is used to measure the impact of the changes in income on the quantity of demanded services. The income elasticity has been measured as 1.35 for total health expenditure per capita, 0.20 to 0.57 per person for a medical examination, 0.01 to 0.04 for hospitalization and 0.6 to 3.2 for dental expenses in studies on health services (Celik, 2013). Another factor that has an impact on the demand of healthcare is people's preferences (Cogurcu, 2015). The demand for aesthetic services, dental services, preventive health services, and hair and skin care services is closely related to consumer preferences. The hospitality service, which is

Chapter II: Insurance in the Health sector

related to the people's priorities and preferences, also affects the demand for health services (Cogurcu, 2015). The structure of the health system and the manner of funding healthcare services also play an important role in the health demand in any country. While the countries that use direct funding have a low coefficient of demand, the countries that fully or partly use state healthcare financing have higher demand coefficients (Kurtulmus, 1994).

2.2.2. Information Asymmetry:

Health is characterized by a set of information asymmetry situations, -between health care providers and patients, health insurers and patients ... --, which stop competition processes from naturally progressing to the social equilibrium and which is also found in many problems of public administration and, in particular, in contractual ties between public buyers and suppliers.⁵¹

Information about individual's health condition can only be translated by well-educated and professional people such as doctors. Without the interpretation from a doctor, a patient can hardly understand his own health situation. In view of the fact that the large imbalance in education level, causes a huge asymmetry in information between doctors and patients. When doctors or healthcare providers deliver information about individual health condition to patients, they can express themselves in a severe way so overwhelmed patient may seek for treatment that is unnecessary but can increase profit gain by doctors or healthcare providers. Patients often are so respectful to their doctor and follow their advice without doing any additional research. Therefore, the asymmetric information could not be balanced thus patient end up paying more to doctor than they actually need.⁵²

Information asymmetry—a condition where in one party in a relationship has more or better information than another (Akerlof, 1970)⁵³, while in the health sector it refers to the physician that has more information than the patient and at being dominant in the physician-patient relationship. The patient cannot question the healthcare provided by the physician in details and only feels the satisfaction and dissatisfaction as a result of the service provided. This difference in levels of information between patient and physician is known as information asymmetry. (Cancer & Haydar, 2015)

Large theoretical studies elaborated on the market failures that may occur as a result of asymmetric information between insured and Insurer. Akerlof, 1970; Arrow, 1936; Ehrlich and Becker, 1972; Pauly, 1968; Rothschild & Stiglitz, 1976. These market failures may include the complete eradication of insurance but also more subtle forms where asymmetric information leads to sub-optimal levels of insurance. (Van Wolfental, 2013).

⁵¹ Caussat L. & Raynaud D., Regulation of demand for care: the role of health insurance in shaping the consumption of health goods and services, In: Financial economics journal, n ° 76, 2004, P. 129-151.

⁵² <http://blogs.cornell.edu/info2040/2016/12/01/asymmetric-information-in-healthcare-industry/>, accessed 20/04/2020.

⁵³ Quoted by; Bergh D., Orlandi I., Boued B *et al*, information asymmetry in management research: past accomplishments and future opportunities, journal of management, vol.45, N.1, 2019, P.122-155.

Chapter II: Insurance in the Health sector

During the last decade, the growth of inflation in health care costs in the United States of America has been more than the consumer price index and a high percentage of its Gross domestic product (GDP) has been devoted to health expenditure; some researchers believe that such an inflation is rooted in the deviations in health care insurance market (Bajari, Hong, & Khwaja, 2006). During the same period, Iran has also experienced a growth in health expenses compared with other consumer costs (Haddad & Anbaji, 2010). The lack of sufficient information about the health status and heavy burden of medical expenses are part of the reasons for this deviation in health insurance market. The lack of information on the Latent health status of population leads to adverse selection; moreover, the burden of medical expenses is due to the phenomenon of moral hazard (Liu, Nestic, & Vukina, 2012).

The phenomenon of asymmetric information due to insured's external and inborn properties as one of the agents involved in insurance contracts and requires designing appropriate policies. Lack of ability to recognize insured people with various risks can pave the way for the development of adverse selection, which is one of the consequences of asymmetric information. Moral hazard is another clear indication of asymmetric information which occurs when there is a level of uncertainty with regard to some variables such as requesting unnecessary medical services (Resende & Zeidan, 2010).⁵⁴

In many situations, insurance companies face adverse selection and moral hazard problems simultaneously when they design contracts; these two types of asymmetrical information have been provided separate treatments so far in the economic literature on risk-sharing agreements. Information problems have been integrated into a single model where all the parties of the contract are risk neutral (Laffont and Tirole, 1986; Picard, 1987; Caillaud, Guesnerie, Rey and Tirole, 1988; Guesnerie, Picard and Rey, 1988).⁵⁵ Although these models involve uncertainty, they are unable to explain arrangements where at least one party is risk averse. In particular they do not apply to insurance. More recently, some authors have attempted to integrate both information problems into a single model where the agent is risk averse.

Combining moral hazard with adverse selection problems in models which use past experience might involve some synergetic effects. In the model presented by Dionne and Lasserre (1988), the same information required to eliminate either the moral hazard problem alone (Rubinstein and Yaari, 1983), or adverse selection alone (Dionne and Lasserre, 1988), is used to remove both problems simultaneously. A related subject concerns the efficient use of past information, and the allocation of instruments; toward the solution of each particular information problem. For a long time, self-selection mechanisms have been proposed in response to adverse selection while nonlinear pricing was advocated against moral hazard. In one-period contracts both procedures used separately involve inefficiency (partial insurance) which can be reduced by the

⁵⁴ Farhad L., Ghadir M et al, Asymmetric information in Iranian's health insurance market: testing of adverse selection and moral hazard, *global journal of health science*, vol.7, N.6, 2015, P.146-155.

⁵⁵ Quoted by: Georges Dionne, Neil Doherty, Fombaron Nathalie, *Adverse selection in insurance market*, paris, France, 2000, P37.

Chapter II: Insurance in the Health sector

introduction of time in the contracts. Dionne and Lasserre (1988), showed that self-selection may help solve moral hazard problems, as well as adverse selection problems.

2.2.3. Moral Hazard:

Moral hazard is the tendency of a person who is imperfectly monitored to engage in dishonest or otherwise undesirable behavior.⁵⁶

2.2.3.1. Definition

Most consumers select health insurance because they prefer a certain loss to an uncertain loss of a similar expected magnitude (Nyman 2004). In consequence, consumer, from his choices in a logical order of stages, firstly his expectations of his future health condition and his risk preferences have major role in choosing the health insurance. Secondly, on the other hand, refers to a series of health care services provided by the insurance policy and the individual's budget constraint.⁵⁷

Insurance companies needs to collect more data to obtain insight into whether, when, why, and how people respond to insurance-induced incentives. Collecting more detailed data is first step that must be taking. (VanWolferen, Inbar & Zeelenberg 2013).

Moral hazard is defined as "the intangible loss-producing propensities of the individual assured or as that which "comprehends all of the nonphysical hazards of risk." (Boz & Sur 2015).

Moral hazard broadly refers to the increase in people's use of services when it is covered by insurance compared to when it is not. Its theory describes what happens when one party is partly insulated from risk because another party agrees to wholly or partly indemnify losses that the first party might suffer. The main point of this theory is that insurance removes all or part of the incentive to restrict the use of insured services. With full insurance (i.e., 100% of the costs are covered), there is no financial reason for someone with insurance to not visit the doctor. (VanWolferen, Inbar & Zeelenberg 2013)

"Malingering" and "hypochondria" are motive words used by insurance writers to consider the phenomenon as an ethical or moral problem, and provide value-tinged definitions such as "moral hazard reflects the hazard that arises from the failure of individuals who are or have been affected by insurance to uphold the accepted moral qualities" or "moral hazard is every deviation from correct human behavior that may pose a problem for an insurer. Healthcare has many characteristics except these: externalities, the high level of specialization, uncertainty, the existence of some restrictions in entering the market, and the lack of storage facility demand individual participation in the production process; healthcare is generally lacking in standards in

⁵⁶ The Economics of Healthcare, 2017 P.2,
https://scholar.harvard.edu/files/mankiw/files/economics_of_healthcare.pdf

⁵⁷ Chunyang F., "Insurance Choice And The Demand For Prescription Drugs Among Individuals With Chronic Conditions" , DOCTOR OF PHILOSOPHY, Wayne State University Dissertations, Detroit, Michigan, 2013, P.9.

Chapter II: Insurance in the Health sector

contrast to other goods and services; the expensive nature of such services and necessary teamwork are the other best known characteristics.⁵⁸

It should be noted that the "moral hazard" problem is not unique to health insurance alone or to public insurance schemes alone. In reality, it affects any insurance system, whether private or public, whatever the risk it involves, as this system is characterized by imperfect information from insurers on the behavior of policyholders in relation to that risk.

In the year 1963, K. Arrow, the founder of health economics, had expressed the idea that the generalization of systems of health insurance inevitably led to a rise in the individual health costs of the covered individuals, the pooling of risks allowing the largest number of access to the most expensive treatments. In this situation, the pre-financing by insurance schemes of health spending has the effect of lowering the price and thus, logically, rising demand.

A few years later, Pauly (1968) pointed out that changes in health demand following the establishment of insurance mechanisms could have the effect of reducing the social benefits of pooling health care expenditure. The phenomenon known as the ex post "moral hazard" reflects the fact that the best insured are also those who consume the most care, not because they are more vulnerable to illness than the less well insured, but because they are sick, they have more recourse to health care.

Qualified as an ex ante "moral hazard" argument that well-insured individuals are renouncing preventive actions that allow certain morbid risks to be avoided.⁵⁹

2.2.4. Different types of moral hazard:

The different examples of healthcare hint at the fact that moral hazard may occur for different reasons. We distinguish; ex ante moral hazard, ex post moral hazard, and insurance fraud. These are theoretically, psychologically, and behaviorally distinct ways in which health insurance might increase the use of medical services. It should be noted that these types of moral hazard also apply to different domains (For example, workers compensation (Dionne & Michel, 1991),⁶⁰ auto insurance (Chiappori & Salanie, 2002; Richaudeau, 1999) and even pensions (Keating, 1991)). We focus on health insurance specifically, as this is a domain in which moral hazard theory has spurred much discussion (Savvedoff, 2004)

Let us consider, the expected loss = $P \cdot L$ (P: the probability of loss, L: the size of loss)

The risk of getting sick in a given period is $P=5\%$, and the cost of visit $L=100u$, the expected loss = $P \cdot L = 0.05 \cdot 100 = 5u$. If we consider that people are rational utility maximizers (i.e. they will try to find the optimal solution to this formula). When health insurance is introduced, insurance will basically reduce L, for example it will cover 90% L will become 100-

⁵⁸ Canser B., Haydar S. & Selma S., The Affecting Factors of Healthcare Services Demand in terms of Health Services Use: A Field Application, International Journal of Health and Life Sciences, 1(2), Istanbul, Turkey, 2015, P.33-41.

⁵⁹ Caussat L. & Raynaud D., Op.cit., P. 129-151.

⁶⁰ Dionne G. & Michel P., Workers' Compensation and Moral Hazard, Vol. 73, N.2, May, 1991, P. 236-244.

Chapter II: Insurance in the Health sector

$(100 \cdot 90\%) = 10u$, and P will not change, $EL = 0.05 \cdot 10 = 0.5u$. Here the rational utility maximizer (the consumer) will change his behavior.

From Van Wolfrente, 2013 we will try to explain each type:

- Behaviors that are referred to as **ex ante moral hazard** change p and take place only before (hence, ex ante) an incident takes place. By taking more risk, people increase their expected loss.

The consumer will here start to take risk, due to being covered by insurance, for example, he will stop taking vitamins which will increase the incidence (falling ill) by 50%; $EL = 0.5 \cdot 10 = 5u$, the optimal level that he was searching for. This negative effect that insurance has on preventive health behaviors is predicted to hold across behaviors that positively or negatively affect p , including smoking, exercising and alcohol consumption. (A notable theoretical exception is the prediction by Ehrlich and Becker (1972). They mathematically examine the case where an insurance company observes risk-taking and prevention efforts perfectly, and prices insurance contracts accordingly. In this case, policyholders face an incentive to be careful when insured, as carefulness lowers their premium. This is such an unlikely assumption that we do not discuss its practical implications further)..

- The second type of moral hazard – **ex post moral hazard** – relates mainly to behaviors that change L and take place only after (hence, ex post) an incident has taken place. By using more of an insured service, people again try to maximize the utility they experience. Ex post moral hazard may be construed as both malignant and benign. The malignancy argument holds that insurance induces people to use care that they otherwise would not have bought for the same price. It, thus, leads to a welfare loss because the consumption of care costs more than its real worth to the consumer. The benign argument holds that being uninsured leads people to forego even basic and necessary care, which makes some increased use of care under insurance appropriate (Nyman, 2004). In addition, especially if care is cost-effective and the treatment does not have negative side effects, more moral hazard is better (Pauly & Held, 1990).

Another problem that troubles research on ex post moral hazard is the limited availability of data. Selecting and finding the right information is frequently a difficult undertaking. Most insurance companies do not keep track of the health behaviors of their beneficiaries and they often have limited information on their backgrounds. In addition, data may be inaccessible for researchers because of privacy laws. Many articles use data from nationwide databases or very 'local' databases such as data from one particular insurer. These have the problem that they may not contain all the information the researcher seeks to answer (e.g., only 'proxies' for demand and health behavior) or the generalizability of the sample under study may be questioned.⁶¹

⁶¹ Quoted by: Van Wolfren & Inbar, Moral hazard in the insurance industry, 2013, P18.

Chapter II: Insurance in the Health sector

- **Insurance fraud:** is an asymmetric information problem where the policyholder abuses the trust that the insurer is obliged to place in him. The ways in which policyholders can exploit their informational advantage are classified as either “hard” or “soft” fraud. Hard fraud includes deliberately staging accidents or faking claims to obtain a payment from the insurance company. Soft fraud includes ‘claim padding’ and opportunistically misrepresenting the facts on a claim to obtain a higher payment or a lower monthly premium (Insurance Information Institute, 2010). In Jeff’s case, hard fraud means he fakes his medical bills, while soft fraud means he has a medical bill and changes some numbers to obtain a higher payment. The distinction between the two is not always as clear as in the previous example, but it seems that soft fraud is harder to detect than hard fraud.

2.2.5. Adverse selection:

Adverse selection is the tendency for the mix of unobserved attributes to become undesirable from the standpoint of an uninformed party.⁶²

2.2.5.1. What is adverse selection:

It presents usually a situation where the supplier has information which the demander does not have or inversely

In insurance markets, adverse selection results from asymmetric information between the policy-holder (demander) and the insurer (supplier). The policy-holders are heterogeneous with respect to their expected loss and have more information than the insurance company which is unable to differentiate between risk types. Naturally, the high risk individual has no incentive to reveal his true risk which is costly to observe by the insurer. As pointed out by Arrow, a pooling of risks is often observed in insurance markets. “In fact, however, there is a tendency to equalize rather than to differentiate premiums... This constitutes, in effect, a redistribution of income from those with a low propensity of illness to those with a high propensity...” (Arrow, 1963; p. 964).⁶³

2.2.5.2. Adverse selection in insurance:

Adverse selection is an issue for all of health insurance.⁶⁴ Insurers find out that higher risk people are ready to take out and invest for policies. If the company charges an average price but only high-risk consumers buy, the company takes a financial loss by paying out more benefits or claims.

⁶² The Economics of Healthcare, 2017 P.2,
https://scholar.harvard.edu/files/mankiw/files/economics_of_healthcare.pdf

⁶³ Georges Dionne, Neil Doherty, Fombaron Nathalie, Adverse selection in insurance market, paris, France, 2000, P.37.

⁶⁴ Frank R., McGuire T., Jay P., and Agnes Rupp, Solutions for Adverse Selection in Behavioral Health Care, health care financing review/Spring, vol.18, N. 3, 1997,P109-122.

Chapter II: Insurance in the Health sector

However, by increasing premiums for high-risk policyholders, the company has more money with which to pay those benefits. For example, a life insurance company charges higher premiums for race car drivers.⁶⁵

Most of the theoretical works in the field of insurance show that asymmetric information leads to the provision of inadequate insurance services or even the failure of the insurance market. In the traditional theory of demand for services, there are several hypotheses that lead to adverse selection that one of them is the existence of asymmetric information (Gh Mahdavi & Izadi, 2012; Ghadir Mahdavi & Rinaz, 2006). Its outcomes can potentially increase the use of medical services, effect on consumption behaviors of individuals, and ultimately increase health expenditure (Abolhallaje et al., 2013).⁶⁶

Adverse selection can be a significant resource allocation problem in many markets. In automobile insurance markets, risk classification is mainly explained by adverse selection. In health insurance, different insurance policies or contracts are offered to obtain some self-selection between different groups. In life insurance, the screening of new clients with medical exams is an accepted activity also justified by asymmetrical information between the insurer and the insured. These three resource allocation mechanisms can be complements or substitutes and adverse selection is not always a necessary condition for their presence.⁶⁷

An interesting twist on the adverse selection problem is to allow the information status of individuals to vary as well as the risk status. A traditional adverse selection problem arises when individuals know their risk status but the insurer does not. What will happen in a market where some policy-holders know their risk status and others do not? The answer to this question depends on whether the information status is observed by the insurer. And a further variation arises when the uninformed policy-holders can take a test to ascertain their risk status. Whether they choose to take the test depends on the menu they will be offered when they become informed and how the utility of this menu compares with the utility of remaining uninformed. Thus, the adverse selection problem becomes entwined with the value of information.

These questions are especially important in the health care debate. Progress in mapping the human genome is leading to more diagnostic tests and treatment for genetic disorders. It is important to know whether the equilibrium contract menus offered to informed policy-holders or employees are sufficiently attractive to encourage testing. Moreover, the policy debate is extended by considering laws that govern the access of outsiders (such as employers and insurers) to medical records. For example, many laws require that medical records cannot be released to outsiders without the consent of the patient.⁶⁸

⁶⁵ Hayes A., Investopedia (economic), consult the 4th April 2020 at 10pm, <https://www.investopedia.com/terms/a/adverseselection.asp>

⁶⁶ Farhad L., Ghadir M et al, Asymmetric information in Iranian's health insurance market: testing of adverse selection and moral hazard, global journal of health science, vol.7, N.6, 2015, P.146-155.

⁶⁷ Georges Dionne, Neil Doherty, Op.cit.

⁶⁸ Ibid. P40.

Chapter II: Insurance in the Health sector

2.3. The health system:

2.3.1. Definition:

The health system can be defined as all the organizational, structural, human and financial resources intended to achieve the objectives of a health policy. (Zaidi Z., 2014)

All the resources, financing, organization and management that cover the provision of services for the population. (Roemer, 1990).

Set of activities whose primary function is to promote, protect, restore and maintain health (WHO, 2000).

Every health system has some main objectives like, providing an optimal level of health which supposed to be distributed equitably, guaranteeing an adequate degree of financial protection for all against risks and ensure the highest possible level of consumer satisfaction, and preventing, in other words, avoiding or/and reducing the frequency and severity of pathologies and accidents.⁶⁹

2.3.2. Health system in the world: This section provides a brief explanation:⁷⁰

2.3.2.1. Beveridge (England, 1948):

Creation of a public health monopoly is a universal social protection system without affiliation, financed by the mass of collected taxes, which directly engages public finances.

- **Centralized Beveridgien system** (United Kingdom: National Health Service):

Free care offered to the entire population who expresses a need for it. Funding based primarily on taxes (82%). Autonomy of care providers, or what is known as freedom of installation and prescription (possibility of exercising either in the public, private or both).

- **Decentralized Beveridgian system** (Italy):

The Italian system, initially Bismarckian, switched to the Beveridgian system in 1978 following the rapid increase in social protection expenditure observed between 1960 and 1975.

The 1978 reform was part of the decentralization to regions and municipalities, Transfer of regulatory powers from the system of mutual health insurance managers to the municipalities that manage the national health system. The burden of financing was initially transferred to local public finances. Public finance participation stabilized and then declined.

The health system has gradually become poor, the hospital system in particular, diverting the population to the private sector. The North / South inequalities in health structures remain, moreover, flagrant (great, direct). The reforms of the 1990s confirmed the partial privatization of the health service.

⁶⁹ Health system in the world and in Algeria, ISM copy, 6th year medicine, health economy module, 2017/2018, univ.ency-education.com .

⁷⁰ Ibid.

Chapter II: Insurance in the Health sector

2.3.2.2. Bismarck (Germany, 1883):

Compulsory health insurance schemes based on professional affiliation and financed by employer and employee contributions does not directly engage public finances, but feeds the growth of a social budget.

- **Decentralized Bismarckian system** (Germany):

Germany does not have social security for everyone, but a parallel system of social insurance and private insurance. Membership in a health insurance fund is compulsory (obligatory) only below a certain income limit, defined by the state. For retirees and the unemployed, membership is optional.

There is very clear separation between the hospital system and the ambulatory sector;

- The outpatient sector is completely private, city physicians are paid through professional unions of physicians, and these unions negotiate remuneration with health insurance funds at Land (region) level, which is then distributed among the different physicians. Policyholders therefore benefit from free outpatient procedures.
- Public or private non-profit hospitals (87% of inpatient beds) are financed according to the flat rate system per pathology. These employ salaried doctors. Access to the hospital is by prescription from a city doctor.

The different funds are each required to ensure their financial balance: differentiated contribution rates according to the funds (competition between funds).

- **Centralized Bismarckian system** (France):

It was set up in after the 2nd World War, it is based on collective financial coverage generalized to the entire population. The general scheme covers 80% of the population, the rest being covered by the others professional organizations. Private insurance funds and mutual insurances offer additional coverage to their beneficiaries. Public hospitals are financed by global budget. Private Doctors are paid on a fee-for-service basis by patients who are then reimbursed. The whole is financed by employee and employer contributions (variable coverage rate). The same approach is used for drugs except in the case of the implementation by dispensing pharmacists of the third-party payment system. The prices of reimbursed drugs are regulated, as are all the pricing of reimbursed medical care and goods. The French system is also characterized by the great freedom of the patient.

2.3.2.3. Mixed system (United States):

Assistance measures for disadvantaged families, benefits which are covered by public expenditure (Medicare, Medicaid). Insurance measures in the form of health insurance plans offered by employers or taken out individually do not include any insurance obligation (15% of the population remains unsupported).

Chapter II: Insurance in the Health sector

2.4. The social insurance program:

There is no clear-cut definition of social security. However, it is possible to provide a reasonably synthetic definition: "Social security is an institution or a set of institutions which have the function of collectively guaranteeing individuals of all pecuniary conditions against a certain number of risks of existence likely to undermine their economic security and to which society attaches of particular importance. These risks are said to be social because they are pooled by social security by means of specific techniques intended to promote solidarity and the redistribution of income"⁷¹

Social protection, or social security, is a human right. It is defined by a set of policies and programs aimed at reducing and preventing poverty and vulnerability throughout the life cycle. Social protection includes benefits for children and families, benefits for maternity, unemployment, accidents at work and occupational diseases, sickness, old age and disability, and survivors' benefits. It also includes health protection.⁷²

The insurance service is considered as one of the most important financial services that closely resembles the role played by banking services. Despite some privacy in the insurance service, it specializes as a financial service in the term production, which is not the same in banking services. Here are some definitions of insurance:

"The insurance service is the products that insurance organizations provide to the citizen, whether they are people or products to reassure the concerned person (the insured about his life and his money)."⁷³

"It is a product that is marketed and produced by the insurance company (the supplier) in order to meet the client's needs and insurance desires against the possible risks of falling in the future, which could cause him losses in his person or his property or responsibility towards others, and it is an activity subject to exchange and does not result in transfer of ownership."⁷⁴

However, this exchange process results in the possession of an insurance policy that proves the customer's right to benefit from the insurance service according to the terms agreed in the contract through the previous two definitions. We conclude that the insurance service is "that product (the promise of compensation in case the risk materializes) provided by insurance organizations (the Insured) for the Insured (clients) that satisfy his needs and desires, which are to cover potential losses of future hazards."⁷⁵

There are many types of insurance like Marine insurance, car insurance, fire insurance, life insurance... and health insurance. It is the latter that interests us most.

⁷¹ Huteau & Gilles, Social security and social policies, 3rd edition, Italy: Dollaz-Sirey, 2001, P.09.

⁷² World social protection report, world organization of work, 2017-2019, P.1.

⁷³ Muhamed el djamel M., , "Principles of Insurance, a comparative study of legislation, jurisprudence and jurisdiction in the light of the technical foundations of insurance, Al-Halabi human rights publications, 1999, P.10.

⁷⁴ Felah A., Insurance principles and types, Osama House for Publishing and Distribution, Amman, 2008, P.6.

⁷⁵ Benziden F. & Katab F., The reality of marketing health insurance services in Algeria, The Seventh International Forum, College of Economics, Business and Management Sciences, Hassiba Ben Bouali University, Chlef, 2012, P.5.

Chapter II: Insurance in the Health sector

2.4.1. Health insurance :

Health insurance is considered as a branch of social insurance, the world health organization defines it as: "...the method by which some or all of the cost of healthcare due to a patient participating in the scheme is paid when he is ill. It protects the insured from paying the high cost of treatment in sick conditions. The basis of health insurance is that the insured participant pays a regular contribution to an administrative institution and is the general authority for Health Insurance, which is responsible for managing those payments within the framework of a system that pays the expenses of treatment for him when he is sick to health service providers."

Health insurance is a type of insurance coverage that typically pays for medical, surgical, prescription drug and sometimes dental expenses incurred by the insured. Health insurance can reimburse the insured for expenses incurred from illness or injury, or pay the care provider directly.⁷⁶

Health insurance is an agreement between two parties in which the first party will bear the expenses arising from the treatment services provided to the second party (individual or group) in exchange for a specified amount, to be paid in bulk or in installments. Health insurance is mainly based on the concept of distributing the expected risk that an individual may face, which reduces the burdens and costs incurred when dealing with sick conditions to which the insured are exposed, and it is thus a social system based on cooperation and interdependence between individuals to bear what one person cannot bear alone and insurance companies organize the benefit from the distribution of the risk for a known fee.⁷⁷

2.4.2. Complementary health insurance:

Among all the factors that can explain or influence the consumption of medicines, the type of supplement occupies a central place for us. By type of complementary, we mean not only mutual, private insurance or provident fund, but also no complementary coverage. It is necessary to distinguish two effects that could be contained in this single variable: one of an economic nature; the other sociological. The difference in consumption of citizens with complementary cover can be explained economically, Due to the price distortion of health services caused by the payment of part of the expenses by the insurance.

For the complementary insured, the cost of using health services is lower than that paid by the complementary uninsured. However, we have seen that supplementary insurance reimburses reimbursable drugs in a very identical way. In this case, the price effect can only play between the insured and the uninsured. The only factor that could intervene is the payment term that has already

⁷⁶ Kagan J., Health insurance, investopedia, 2020, www.investopedia.com, viewed 24/07/2020.

⁷⁷ Benziden F. & Katab F. Op.cit., P.8.

Chapter II: Insurance in the Health sector

being mentioned; rapid delays could affect the price perception. This factor is not measurable and probably depends less on the type of supplement than on the body itself.

The type of complementary can also be interpreted more scientifically as an illustration of individual behavior. The subscription of a complementary can be the demonstration of a different attitude towards risk. A situation that could mean frequent use of health services. It can also be a reflection of a "supply effect" since joining a mutual often appears automatically or "out of the box" when set. According to the 1998 ESPS survey, for four complementary insured persons, one declares that his complementary is compulsory in his company, another says to be affiliated to the complementary company without it being compulsory, the last two claims to have taken out a contract on their own initiative, outside the scope of their work. These various conditions for obtaining it led to think that the type of supplement subscribed may differ according to the socio-professional categories and therefore perhaps according to the working conditions, which themselves are likely to influence the state of health.⁷⁸

2.5. The social Security system in Algeria

2.5.1. Social security:

The health care system of Algeria is comprised of numerous systems, including political, scientific and technological systems. They consist of the headquarters of the Health Service, separate specialized structures, five health districts and five municipal health boards, as well as several regional health observatories. 48 Health and Population Directorates (one for each department), 13 university hospitals, 31 specialized hospitals, emergency service, national medical committees, the Medical Ethics Board, the National Science and Health Ethics Council in health sciences, health societies, as well as health professionals associations and unions.

Apart from these organizations, other dependent institutions also work under the aegis of the Ministry of Health, namely the National Health Documentation Agency, the National Blood Agency, the National Toxicology Center, the National Public Health School (NPHS), the National Educational Paramedical Training Institute, the National Public Health Institute (INSP), the Pasteur Institute of Algeria, the Central Hospital Pharmacy, health societies, paramedical schools, etc.⁷⁹

The Algerian social security scheme is based on a common scheme that protects virtually the whole population against social threats, separated into five branches⁸⁰, i.e.

⁷⁸ Dourgnon P. & Sermet C., Does the consumption of drugs vary according to the complementary insurance? , research center for study and documentation in health economics (CREDES), bibliography N.1380, report N.511, 2002, P.16.

⁷⁹ Faliu J.*et.al*, Healthcare in Algeria, Expat.com, july 2020, viewed 08/20/2020. <https://www.expat.com/en/guide/africa/algeria/12337-health-care-in-algeria.html>

⁸⁰ CNAS, Social Security health insurance, the experience of the national social fund for salaried workers, CNAS 2005, P.01.

Chapter II: Insurance in the Health sector

- Social insurance;
- Retirement;
- The self-employed scheme;
- The unemployment scheme;

Health insurance and these alterations, maternity, invalidity, mortality are part of the social insurance scheme. (Act N° 83 -11, July, 2nd 1983, article 02) .

In Algeria, the social security system has gone through various stages. Corresponding organizations are differentiated according to the objectives and foundations of each period⁸¹.

The social security structure was characterized at independence by the emergence of multiple structures (11 social security structures), this organization and form of funding forced the public authorities to introduce multiple important reforms, namely: The reorganization of social insurance, the enhancement of the services given to covered individuals and the expansion of the scope of the provision of social protection, in particular, to destitute individuals excluded from such advantages.⁸²

As early as the 1980s, the state was operated on the ideology of promoting the social element to include the majority demographic, and this was mirrored in the changes enacted in 1983. The basic principles on which this new legislation is based on are:

- The principle of generalization of the social security system;
- The principle of unification of plans, benefits and funding;
- The participation of workers' representatives in the management of social security organizations through strong representation on their boards of directors.⁸³

Creating a very robust scheme of social and health care for all groups of the population, including the disabled and the elderly.

In Algeria, health insurance has been introduced since 1959 onwards, and this scheme, like the national health care system, was expanded in 1983, with the goal of protecting all portions of the non-active population, while 'before 1983 it was distributed in a common fund for self-employed staff and employers. After 1992, a new reform put in place, it is about the creation of:

- CNAS (national social insurance fund)
- CASNOS (national fund for non-salaried social insurance)

A certain organization was announced in the 90s whose purpose are:

- The birth of a special retirement scheme.
- Integration of certain advantages for a specific category of insured
- The emergence of new social security funds (unemployment, etc.)
- Support for a non-active category.

⁸¹ Lamri L., Health insurance monograph, Algeria, September, 2001, P.07.

⁸² National economic and social council (CNES), Medication: Platform for social debate, Algeria, 2003, p.17.

⁸³ Lamri L., Ibid., P.13.

Chapter II: Insurance in the Health sector

In the current Algerian social security system, the unification of regimes and the standardization of benefits have been achieved. The Algerian social protection regime applicable to all persons exercising a professional activity includes:

- Social insurance: (sickness, maternity, invalidity and death),
- Work accidents and occupational diseases retirement,
- Unemployment insurance,
- Early retirement.⁸⁴

2.5.2. . Health insurance in Algeria:

Healthcare insurance is a branch of social security. Its importance comes from the number of people covered (85-87% of the population).⁸⁵ The national health insurance system offers all insured Algerians (i.e. 34 million social insured and beneficiaries, representing a rate of 80% of the population) basic coverage for prescribed drugs⁸⁶. It guarantees the risks associated with all psychiatric or stressful conditions needing care and likely halting clinical practice, except those which are subject to the provisions of particular legislation: Workplace injuries and occupational illnesses, military or invalidity insurance. In order to do so, it offers incentives in kind reflected by repayment of the expenses required for the wellbeing of the insured or his dependents and cash compensation in the form of regular payments equivalent to wage replacement wages during the time of cessation of jobs.⁸⁷

Private medical facilities are becoming popular in Algeria. There are more than 250 private clinics operating today, with even more scheduled. Entry to private medical coverage, however, is very limited as their facilities are usually not provided by the national health insurance scheme and few Algerians in the private healthcare sector can afford out-of-pocket costs for medical attention.

Although there is no current private health care system in Algeria. Foreigners are recommended to prepare for international health insurance before arrival in the country to prevent out-of-pocket costs, especially if they are posted in remote areas of the region. It is necessary to ensure that medical relocation to the expat's home country or a country with better health services is included in the health insurance package.⁸⁸

2.5.3. . Organization of health insurance in Algeria:

⁸⁴ Bougrine P., Social security health insurance, setting up health care systems: The experience of the National Social Insurance Fund for salaried workers, regional conference of the International Social Security Association for Africa, 9 August 12, 2005, <http://www.issa.int>, viewed: 08/08/2020.

⁸⁵ Algérie chiffre clés, In: www.gipspsi.fr, viewed : 08/08/2020.

⁸⁶ Mahfoud N., Brahamia B., Yves C., Op.cit.

⁸⁷ Hannouz M., Khadir M., Social security details for the use of health professions and social insurance, OPU edition, Algiers, 1996, P43.

⁸⁸ Pacific Prime, Health insurance in Algeria, pacificprime.com, viewed 20/8/2020. <https://www.pacificprime.com/country/africa/algeria-health-insurance-pacific-prime-international/>

Chapter II: Insurance in the Health sector

In Algeria, health insurance is managed by social security organizations, namely: the National Social Insurance Fund (CNAS) for employees, and the National Social Insurance Fund for Non- Employees (CASNOS).⁸⁹

2.5.3.1. The CNAS: National social Insurance Fund:

According to Article 8 of Decree No. 92-07 of 4/01/1992, the CNAS is responsible for this:

- Control compensation in terms and cash for medical security, workplace injuries and industrial diseases ;
- Managing Family Resources;
- Ensure collection, monitoring and enforcement of donations intended to fund the programs proposed above;
- Contribute to supporting industrial and occupational disease prevention policies and maintain the funds;
- Manage the gains for citizens benefiting from international conferences and arrangements on social welfare;
- Organization, preparation and training of patient tests;
- Enforce measures in the form of health and social milestones as mandated by legislation;
- Carry out prevention, education and health information measures following a proposal from the fund's board of directors;
- Manage relief and assistance funds;
- Negotiations conclude;
- Continue Social Security and Employees Registration;
- Reimburse the costs incurred by the operation of the various commissions or jurisdictions to be decided in the wake of disputes arising from the fund 's decisions;⁹⁰

The CNAS contains the following types of social security policyholders (Bougrine P, 2005)

- salaried employees, regardless of their field of activity;
- self-employed staff working on their own behalf;
- Retired employees receive social security payments (invalidity or retirement compensation, work injury or occupational illness compensation, unemployment insurance payments);

Also beneficiaries are the holders of the right of the insured, namely (Ziani F, 2010):

- The spouse;
- Dependent children (up to 18 in all cases, up to 21 for students, 25 for apprentices, no age limit for invalids and housewives);
- Dependent ascendants when their resources do not exceed the minimum amount of the retirement pension.

⁸⁹ Mahfoud N., Brahamia B., Yves C. Op.cit.

⁹⁰ National Labor Institute (INT), Social Security Law, INT edition, Algiers, 2001, P.44.

Chapter II: Insurance in the Health sector

2.5.3.2. The CASNOS (Social Insurance Fund for Non-salaried Workers):

According to article 3, of decree n ° 93-119 of 05/15/1993, CASNOS is responsible for⁹¹:

- Administer social security payments in kind and in cash for self-employed persons;
- Manage non-employee benefits and retirement allowances;
- Manage to the termination of the privileges, salaries and benefits of beneficiaries;
- Ensure the compilation, management and prosecution of donations intended to fund the programs provided for in the preceding paragraphs;
- Manage, where appropriate, incentives for people benefiting from international social security conventions and arrangements, Plan, arrange and exercise medical control;
- Taking measures in the field of wellbeing and social success;
- Manage the assistance and relief fund;
- Concluding, in accordance with the social insurance funds involved, the arrangements set down by state law;
- Proceed with the registry of recipient social insured persons;
- Ensure the data of the beneficiaries;
- Reimbursement of costs borne by the service of the different bodies or jurisdictions which have been called upon to rule on the grounds of conflicts arising out of decisions made by the Fund;
- Join arrangements with social security agencies to include medical checks and benefits.

From January 04, 1992. According to this decree, CASNOS has for mission:

- Collection of compensation in kind and in cash from social security for self-employed persons;
- Management of retirement pensions for non-employees;
- To ensure the collection of contributions;
- Organizing and arranging health inspections;
- The registration of members;
- Beneficiary statistics.

⁹¹ National Labor Institute (INT), Op.cit., P 86.

Chapter II: Insurance in the Health sector

2.6. Conclusion:

Health insurance is different from other services as it is not clearly defined. In most sectors, goods or services should be standardized in order to increase productivity and consistency. Each customer of healthcare is structurally, chemically, and emotionally distinct.

There is no unified health insurance program in the world, this latter makes every country tries to find the suitable for its politics and ability to adopt. Like Algeria which had adopted a system that doesn't exist in any other country. For example there are some Scandinavians countries that have a high coverage percentage (80-90%) of the population are covered, but if you dig in details you will find it covering only few damages, while as, in Algeria, like mentioned before almost 85% of the population are covered in all kinds of risks.



**Chapter three:
Case study**

3.1. Introduction:

No scientific analysis can accomplish its objective unless it is rational, generalized, predictable or consistent, and that is to say, via a collection of protocols that are outlined in the functional aspects of field research and the instruments and means that it needs, as well as the data collected. Before, after and during the adoption of the proposed program. While we discussed the analysis and interpretation of the initial effects of the experiments and the correction of the variables to the protocol. This study also involved the applied study of the testing methods as well as the sample used in addition to the analysis techniques and tests used, as well as the methodological review and evaluation of findings and their consistency with the suggested hypotheses, and at the end of the study, conclusions and recommendations were made.

To obtain accurate findings, all experimental analysis work involves methodology and techniques. Thus, in order to be able to validate our conclusions and accomplish the goals of our work, we found it helpful to carry out a qualitative analysis on the field.

We will discuss the approach we have adopted to solve our problem as well as the results of the survey in order to confirm or infirm the hypotheses.

3.2. Target population:

In consideration of the difficulty of arranging a systematic general survey, we are depending on the organization of a partial sample survey. The group affected by the study comprises users of health items, particularly patients, whether they are health goods or services.

The sample is a plot or replication unit of the larger population; the use of the sampling procedure is justified because the population to be analyzed is huge. Running a sample analysis decreases the number of inquiries (in cost and time) thus producing findings that we assume can be considered valid at the mother population level.

The sample has been chosen randomly from among social media users.

3.3. Methodology used in the research:

In order to better understand the effect of health insurance on the patient, a vulnerable user, considering the complicated and ethical nature of the healthcare industry.

We were supposed to make a field research at two insurance companies, one at a basic insurance (CNAS) and the other one at a complementary insurance (CAAT). We wanted to make a comparison in the amount of consumption between the ones who are covered by the government and the ones who pays from their pockets.

But, because of the current situation a practical internship within the organizations was not possible.

So, we used the questionnaire approach as it represents a basic mode of analysis that is simple to create, obviously easy to use, and offers several objective outcomes. Even if all questionnaires look the same, their content will differ. The nature of our research makes it important to use the questionnaire, to collect standardized verbal knowledge, to be realistic and less costly.

We carried out a quantitative descriptive study of a sample of more than 170 persons in the region of Jijel based on a survey. We have made a questionnaire with the help of Google survey, then we distribute it on social media mainly between individuals or users who lives in Jijel. Due to the current situation of COVID 19 virus, it was impossible to make it on paper and distribute it among individuals. We could collect more than 170 responds, we insert them in SPSS program and made our analysis, the results will be found bellow.

3.4. Data analysis:

The data used in this study were collected from a survey (questionnaire) ⁹²distributed on a sample on different characterized individuals.

Ps: all the figures and tables bellow are realized by the researcher himself.

Table (04) shows the distribution of the sample (N=176) according to their gender.

Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	man	50	28.4	28.4	28.4
	woman	126	71.6	71.6	100.0
Total		176	100.0	100.0	

Table 04: Distribution by gender

Source: Realized by the researcher himself

Interpretation:

From the above table (04) we found that minority 28.4% of the total sample are men, while 71.6% are women.

These results show clearly in the figure below.

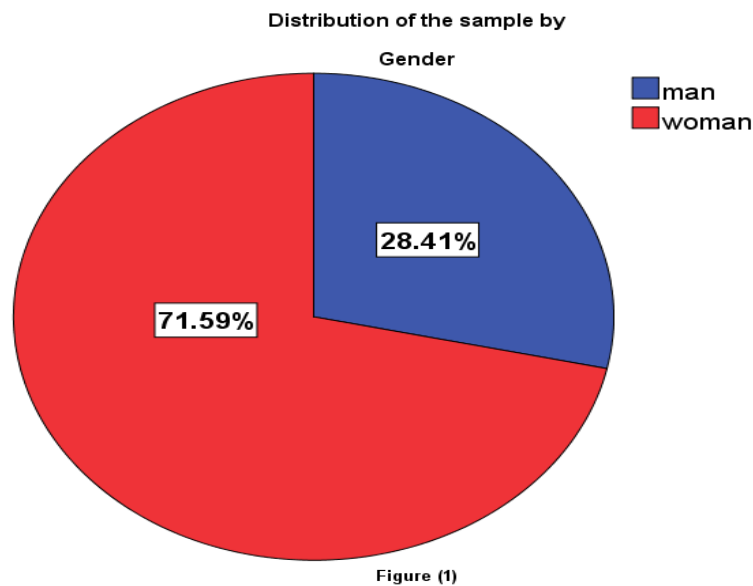


Figure (3)

Source: Realized by the researcher himself

⁹² Annex 1, you will find at the end of the document just before the table of content

Chapter III: Case Study

Table (05) represents the distribution of the sample (N=176) according to their age.

		Age			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 20 y	13	7.4	7.4	7.4
	between 20 & 30 y	125	71.0	71.0	78.4
	between 30 & 40 y	22	12.5	12.5	90.9
	between 40 & 50 y	6	3.4	3.4	94.3
	between 50& 60 y	4	2.3	2.3	96.6
	more than 60y	6	3.4	3.4	100.0
	Total	176	100.0	100.0	

Table (2):
dis

Table 05: Distribution by age.

Source: Realized by the researcher himself

Interpretation:

From table (05) it seems that 7.4% of the sample are less than 20 years old, 71% are between 20 and 30 years old, 12.5% are between 30 and 40 years old, 3.4 are between 40 and 50 , 2.3% are between 50 and 60 and 3.6% are above 60 years old.

These results shows clearly in the figure bellow.

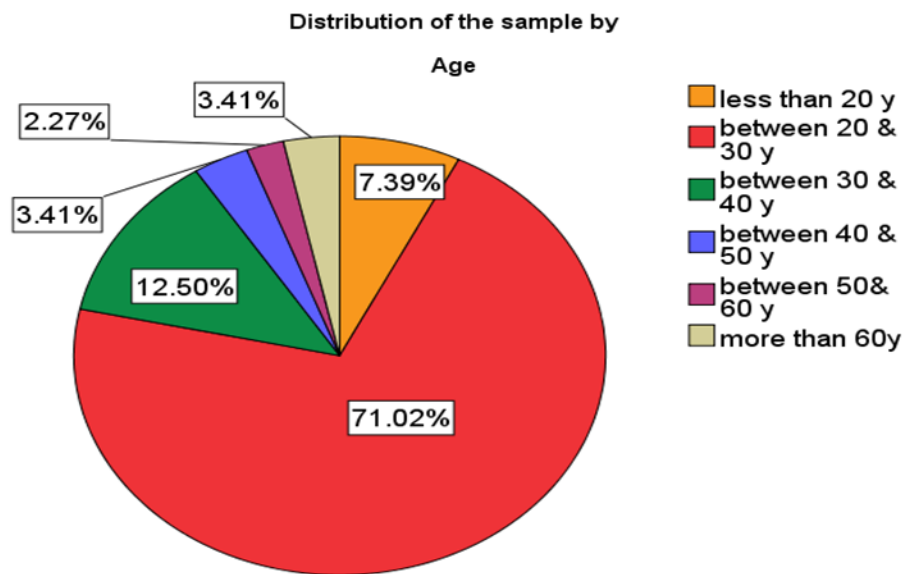


Figure (2)

Chapter III: Case Study

Figure (4)

Source: Realized by the researcher himself

Table (06) shows the distribution of the sample (N=176) according to their relationship status.

		Relationship status			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	single	131	74.4	74.4	74.4
	married	40	22.7	22.7	97.2
	divorced	1	.6	.6	97.7
	widowed	4	2.3	2.3	100.0
	Total	176	100.0	100.0	

Table 06 : Distribution by the relationship statuses .

Source: Realized by the researcher himself

Interpretation:

From table (06) it is seen that majority of the sample 74.4% are single, 22.7% are married, 2.3% widowed and 0.6% are divorced.

The figure below shows these results clearly:

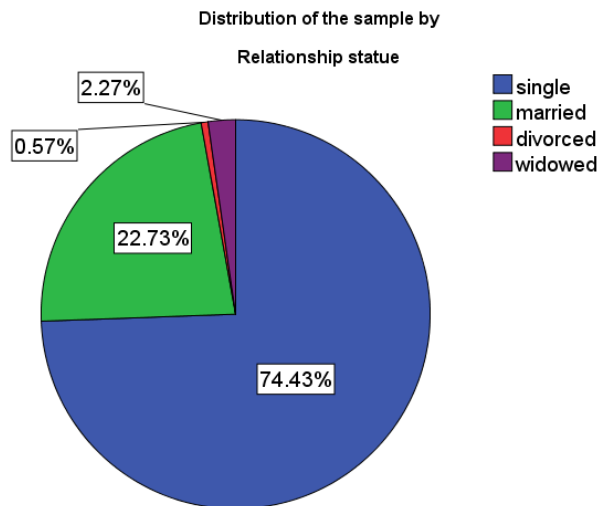


Figure (3)

Figure (5)

Source: Realized by the researcher himself

Chapter III: Case Study

Table (07) shows the distribution of the sample (N=176) according to their level of education.

		Level of education			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	university	161	91.5	91.5	91.5
	high school	9	5.1	5.1	96.6
	less	6	3.4	3.4	100.0
Total		176	100.0	100.0	

Table 07: Distribution by the level of education.

Source: Realized by the researcher himself

Interpretation:

From table (07) we can see that the majority of the sample 91.5% have university education, only 5.1% and 3.4 are have high school or less education (respectively).

Figure below shows it clearly:

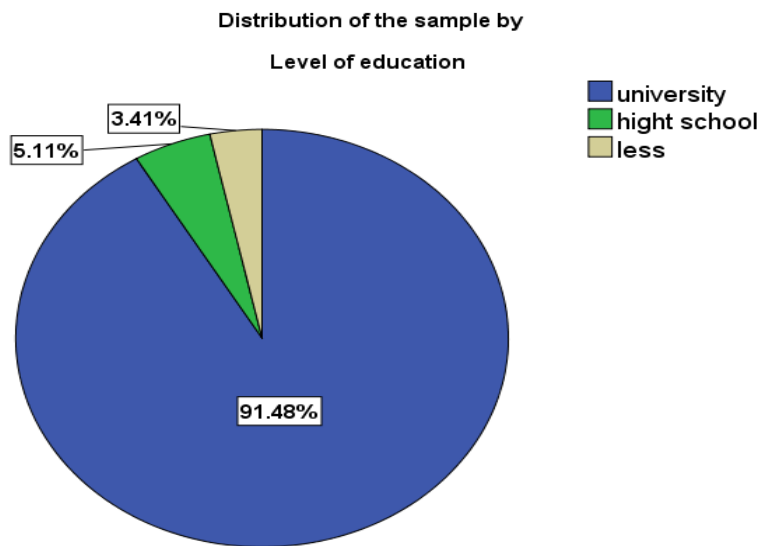


Figure (4)

Figure (6)

Source: Realized by the researcher himself

Table (08) shows the distribution of the sample (N=176) according to their occupation.

Occupation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	not working	20	11.4	11.4	11.4
	student	92	52.3	52.3	63.6
	worker/ employee	44	25.0	25.0	88.6
	merchant	3	1.7	1.7	90.3
	self-employed	15	8.5	8.5	98.9
	retired	2	1.1	1.1	100.0
	Total		176	100.0	100.0

Table 08: Disteribution by the occupation.

Source: Realized by the researcher himself

Interpretation:

We found that 52.3% of the sample are students; 25% are workers, 11.4% not working, 8.5% are self-employed, 1.7% merchant and 1.1% of the sample are retired.

The figure bellow shows these results clearly:

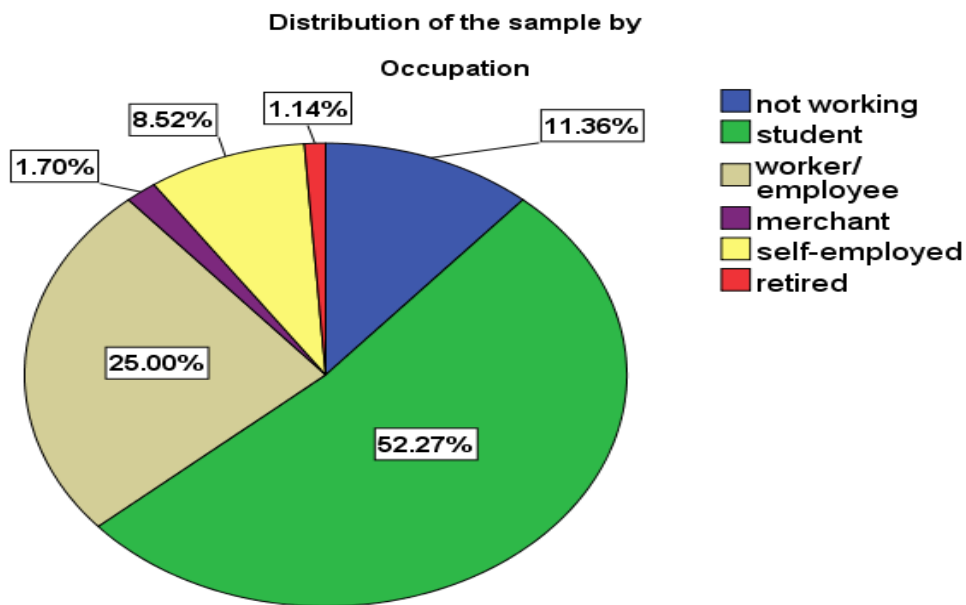


Figure (7)

Source: Realized by the researcher himself

Table (09) represents the distribution of the sample (N=176) by their income.

Chapter III: Case Study

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than 20000DA	99	56.3	56.3	56.3
	20000 to 30000 DA	16	9.1	9.1	65.3
	30000 to 40000 DA	33	18.8	18.8	84.1
	40000 to 50000 DA	12	6.8	6.8	90.9
	more than 50000 DA	16	9.1	9.1	100.0
Total		176	100.0	100.0	

Table 09: distribution by income.

Source: Realized by the researcher himself

Interpretation:

The table shows that 56.3% of the sample income is less than 20 000DA, 9.1% are between 20 000 & 30 000DA, 18.8% between 30 000 & 40 000DA, 6.8% between 40 000 & 50 000DA and 9.1% of the sample are more than 50 000DA.

The figure bellow shows this clearly:

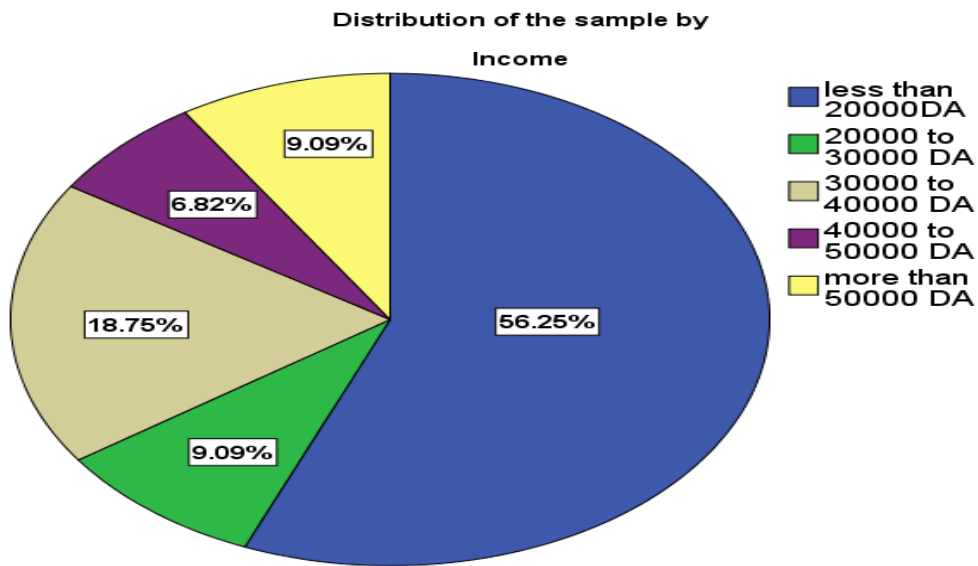


Figure (6)

Figure (8)

Source: Realized by the researcher himself

Chapter III: Case Study

Question		Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Total
Do you consume health products because you are well insured?	N	21	21	49	30	55	176
	%	11.9	11.9	27.8	17	31.3	100
If health products prices decrease, will your consumption increase?	N	23	16	36	32	69	176
	%	13.1	9.1	20.5	18.2	39.2	100
Do you think that your insurance company gives enough information about its services?	N	19	18	57	38	44	176
	%	10.8	10.2	32.4	21.6	25	100
Are you willing/ ready to pay any price for your health?	N	19	15	15	37	90	176
	%	10.8	8.5	8.5	21	51.1	100

Table 10: Individuals use of health products

Source: Realized by the researcher himself

Interpretation:

The table above resumes the questions studied by Lickert scale; the last question used Osgood scale:

The 1st question concerning the consumption while insured “Do you consume health products because you’re well insured?” 31.3% have strongly disagreed to that question while 17% have disagreed, 27.8% were neutral, 11.9% have agreed and strongly agreed.

The 2nd question concerning products prices and consumption “If health products prices decrease, will your consumption increase?”, 39.2% of the participants have strongly agreed to this question while 18.2% disagreed, 20.5% were neutral, 9.1% have agreed and 13.1% have strongly disagreed.

The 3rd question was about insurance service information “Do you think that your insurance company gives enough information about its services?”, 25% has strongly disagreed while 21.6% disagreed, 32.4% were neutral, 10.2% has agreed to this question and 10.8% have strongly agreed.

The 4th question was about the willingness to sacrifice for the health “Are you ready to pay any price for your health?” , 51.5% has strongly disagreed to this, 21% disagreed, 8.5% were neutral, while 8.5% agreed and 10.8% has strongly agreed.

Synthesis:

It is noted from the results above that most of our sample are young middle-aged adults, who have a high education, mostly university. Also, most of the sample are occupied, have a job and salary.

And from the last table we can see that individuals do not take advantages of the insurance; their consumption is within reason and in case of need when they are ill. So, individuals of the chosen sample we have chosen are educated and care more about their health, but most of them are not ready to pay any price for that.

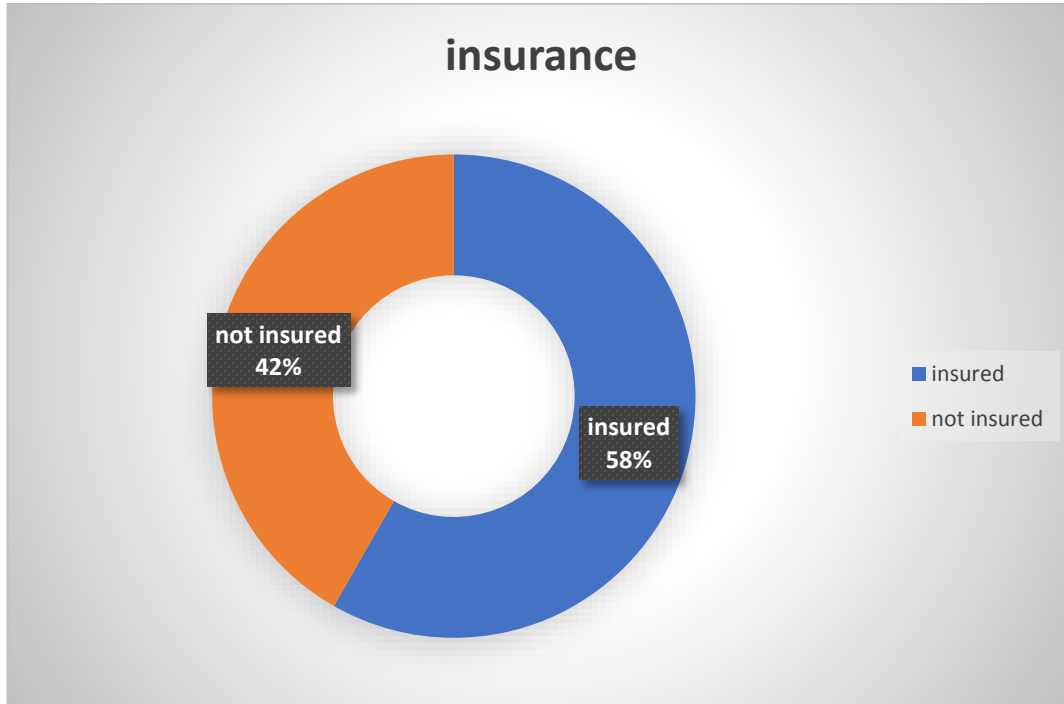


Figure 09: population covered by insurance.

Source: Realized by the researcher himself

Interpretation:

From the above pie-chart we can see that only 58% of the population are covered by insurance while the rest 42% are not covered.

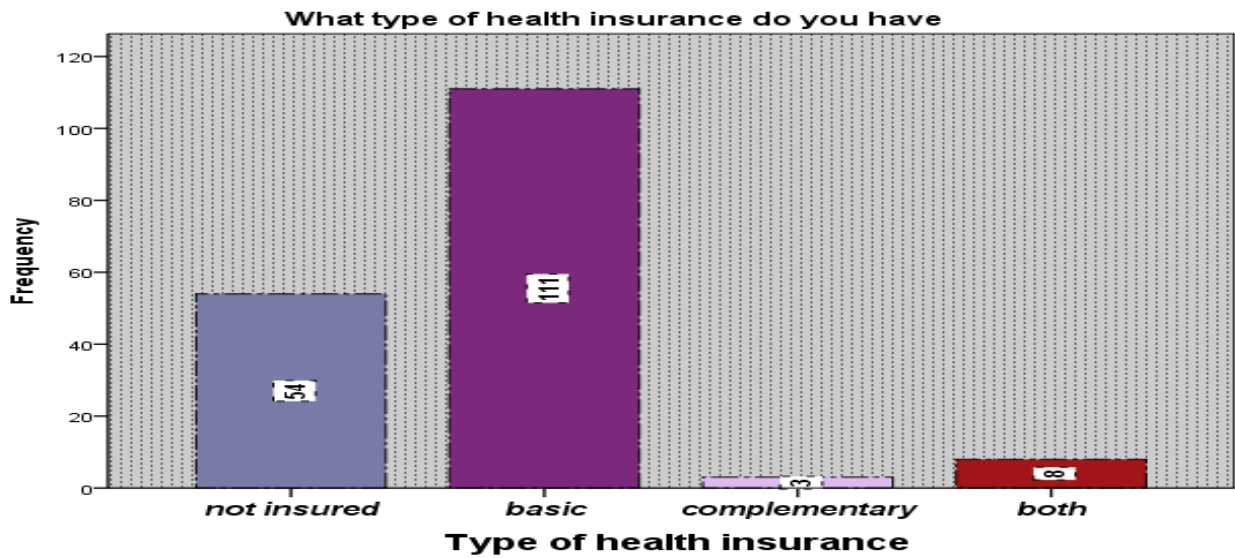


Figure 10: types of health insurance in Algeria.

Source: Realized by the researcher himself

Interpretation:

From the figure above we found that 54 of the people interviewed do not have any insurance coverage, the rest 122 are covered, 111 by basic insurance 3 by complementary insurance and 8 by both of them (basic & complementary).

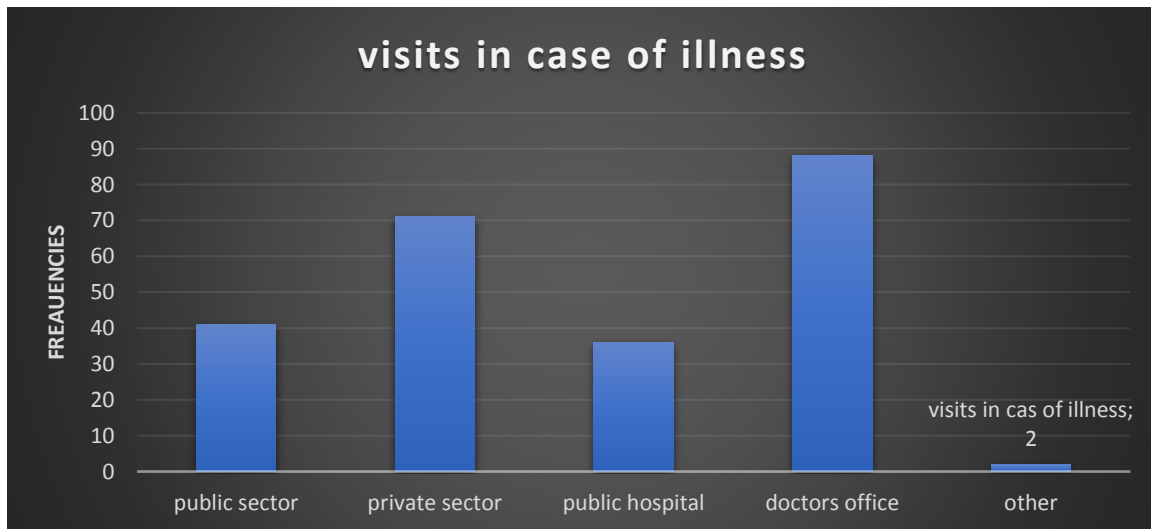


Figure 11: Individual's sector choice.

Source: Realized by the researcher himself

Interpretation:

Most of the population interviewed chooses to visit the doctor's office or go to a private sector, while only 30 or 40 people chose the public sector.

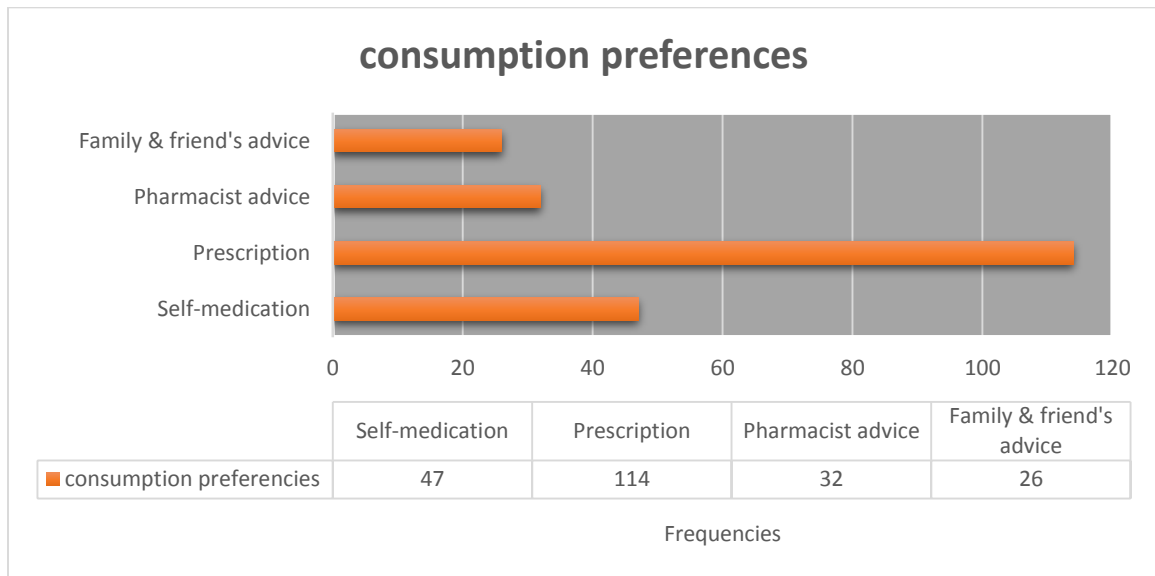


Figure 12: individual's preferences

Source: Realized by the researcher himself

Interpretation:

From the figure above we can see that most people (more than 67%), in case of illness, prefer prescription, about 28% prefer self-medication, 18% take their pharmacist advice and 13% take advice from their family members or friends.

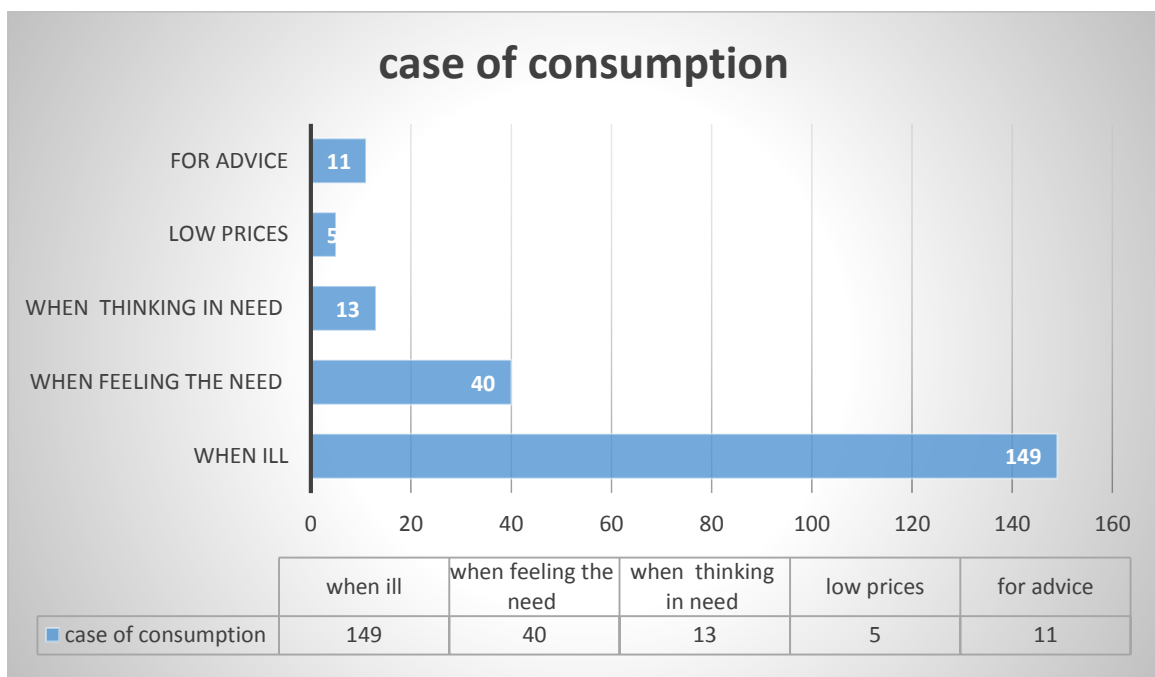


Figure 13: cases of consumption of health products.

Source: Realized by the researcher himself

Interpretation:

Figure 11 illustrates when people decide to go to a doctor or hospital or consume any kind of health products, as we can see most of the population interviewed (+80%) consume health products when they are ill, about 20% when they feel in need, only few go to the doctor because they think they have issues, for advice or because the price is low.

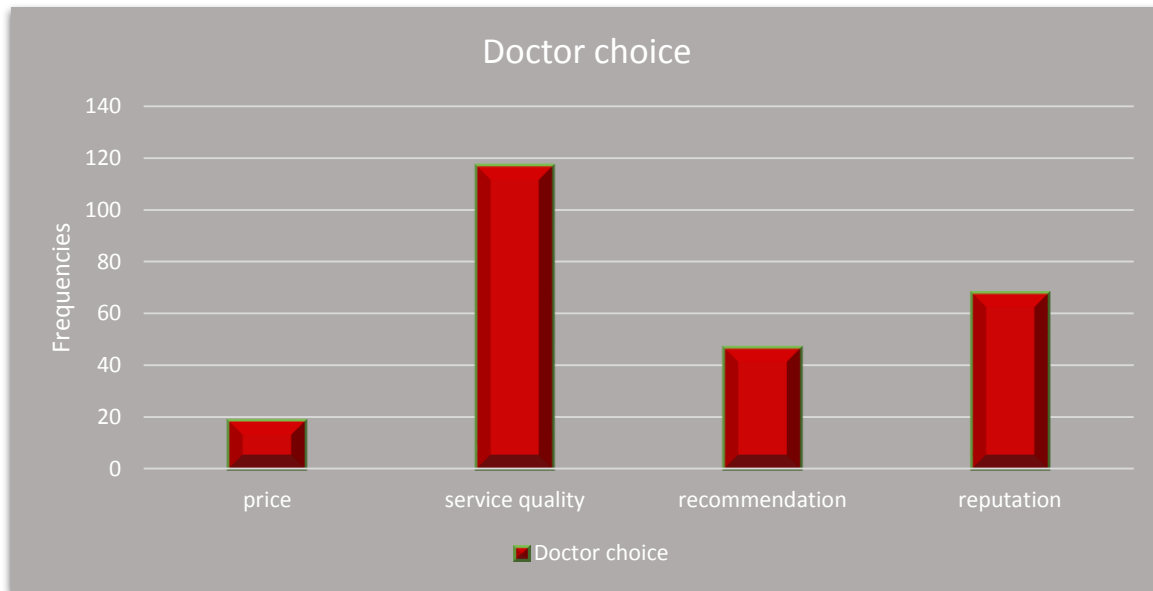


Figure 14: reasons of choosing the doctor.

Source: Realized by the researcher himself

Interpretation:

We found that almost 120 of the population interviewed choose their doctor regarding to his service quality, about 60 look to the doctor's reputation, about 40 chose their doctor by recommendations from friend or family and only 20 pick the doctor by his service price.

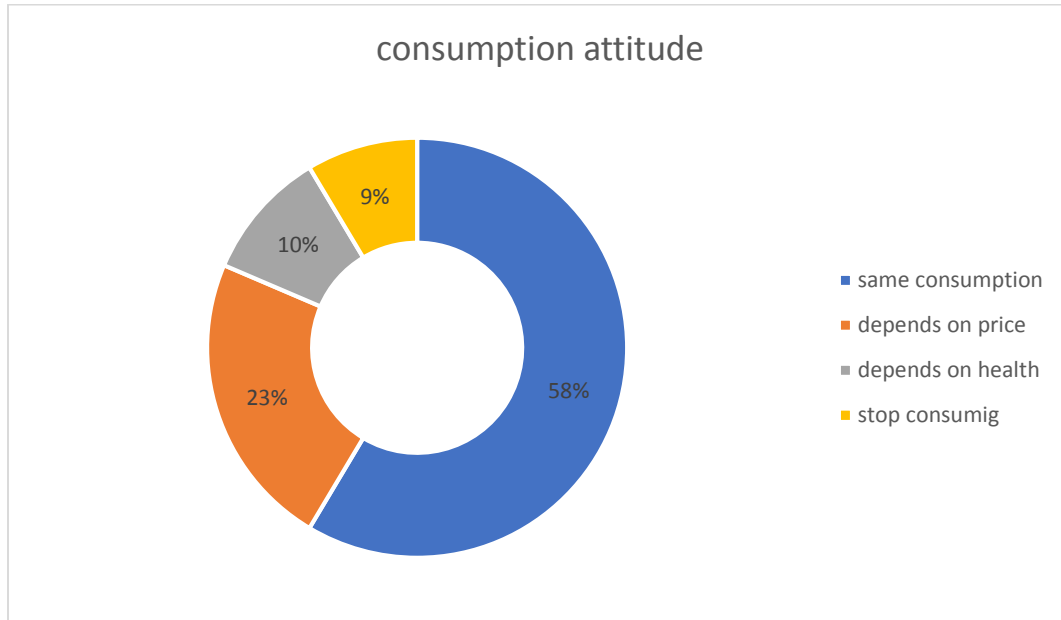


Figure 15: Individuals attitude when the health products prices rise
Source: Realized by the researcher himself

Interpretation:

We found that when health products prices rise, almost 60% of the population keep the same consumption, 23% look to the percentage of change, 10% choose to behave depending on their health condition and 9% decided to stop consuming.

Synthesis:

From the above-mentioned figures, we can note that more than the half of the population is covered, mostly by a basic insurance (obligatory). They prefer prescription in doctor's office or self-medication rather than public hospitals, and they visit mostly in case of illness doctors who are known by a good quality services, caring much about their health than about the prices.

	Not insured	Basic insurance	Complementary insurance	Both insurance	Total
Public sector	9.6% (17)	21% (37)	0.58% (1)	1.7% (3)	32.9% (58)
Private sector	21.1% (37)	42.1% (74)	1.1% (2)	2.8% (5)	67.1% (118)
Total	30.7% (54)	63.1% (111)	1.7% (3)	4.5% (8)	100% (176)

Table 11: sector choice and the type of insurance
Source: Realized by the researcher himself

Interpretation:

Chapter III: Case Study

From the table above, it is clear that 30.7% of the sample are not insured, the rest who are insured, the majority of them have basic insurance (63.1% of the sample). Only 1.1% have complementary insurance and 2.8% have them both (basic and complementary).

We can also see that the majority of the sample 67.1% choose to go to the private sector regardless what sort of insurance they have, 32.9% choose the public sector.

Income		Less than 20000da	20000- 30000da	30000- 40000da	40000- 50000da	More than 50000da	Total
Private sector	Insured	18.2% (32)	5.7% (10)	9.1% (16)	5.1% (9)	7.4% (13)	45.5% (80)
	Uninsured	14.2% (25)	0.5% (1)	4% (7)	0.5% (1)	0.5% (1)	19.7% (35)
Public sector	Insured	14.9% (26)	1.7% (3)	4.5% (8)	2.8% (5)	1.2% (2)	25% (44)
	Uninsured	6.3% (11)	1.2% (2)	1.7% (3)	0%	0.5% (1)	9.7% (17)
Total		53.6% (94)	9.1% (16)	19.3% (34)	8.4% (15)	9.6% (17)	100%

Table 12: income and its relation with the sector choice

Source: Realized by the researcher himself

Interpretation:

From the table above we can note the following:

- Most of the population are insured;
- More than half of the population 53.6% have low or average incomes;
- The majority of the sample are insured, mostly those with low incomes, also the ones with average incomes (30000 to 40000) they take the second position in being insured;
- The insured individuals mostly choose the private sector, 45.5% go to the private sector while 25% go to the public;
- Almost all Individuals with high incomes are insured;
- Individuals with high incomes mostly go to the private sector;

Age		Younger than 20Y	Btw 20-30Y	30-40Y	40- 50Y	50- 60Y	Older Than 60Y	Total
Self- medication	Insured	3.4%	9.4%	2.5%	0.9%	0.5%	0	17%
	uninsured	0%	4.5%	0%	0%	0	0	4.5%
	Insured	3.4%	20.7%	3.9%	2.5%	2.5%	0.9%	34%

Chapter III: Case Study

Doctor's prescription	Uninsured	0.5%	13.4%	1.9%	0	0	0	16%
	Insured	2.5%	7.9%	1.5%	0.9%	0.9%	0.9%	14.5%
Pharmacist advice	Uninsured	0%	3.9%	0.9%	0%	0	0	5%
	Insured	1.5%	3.9%	0.9%	0%	0	0	6%
Family advice	Uninsured	0%	2.5%	0.5%	0%	0	0	3%
	Total	11%	66%	13%	4%	4%	2%	100%

Table 13: relationship between age, prescription choice and insurance.

Source: Realized by the researcher himself

Interpretation:

From the table above we can note the following:

- The majority of the sample (66%) is aged between 20 and 30 years old;
- Most individuals of this category are insured (41.9%);
- In case of sickness they mostly choose to visit a doctor for prescription;
- The majority of the insured individuals of the sample prefers the doctor's prescription (34%), 17% prefer self-medication and 14.5% go to their pharmacist for advice when they are ill ;
- Older individuals, from 40 to 60 years old and older represent the minority of the sample. They all have healthcare insurance;
- Also the uninsured individuals prefer the doctor's prescription;

Synthesis:

We can note from the tables above that most of the population whether insured or not prefer the private sector, no matter how much they have or which type of insurance they have, the private sector is the most visited by patients.

Also, the aged population are all insured and prefer the private sector.

We can say , when we see that 40% of the population are uninsured, that they do not know their own good, but in reality they are not aware of their rights and not their well-being.

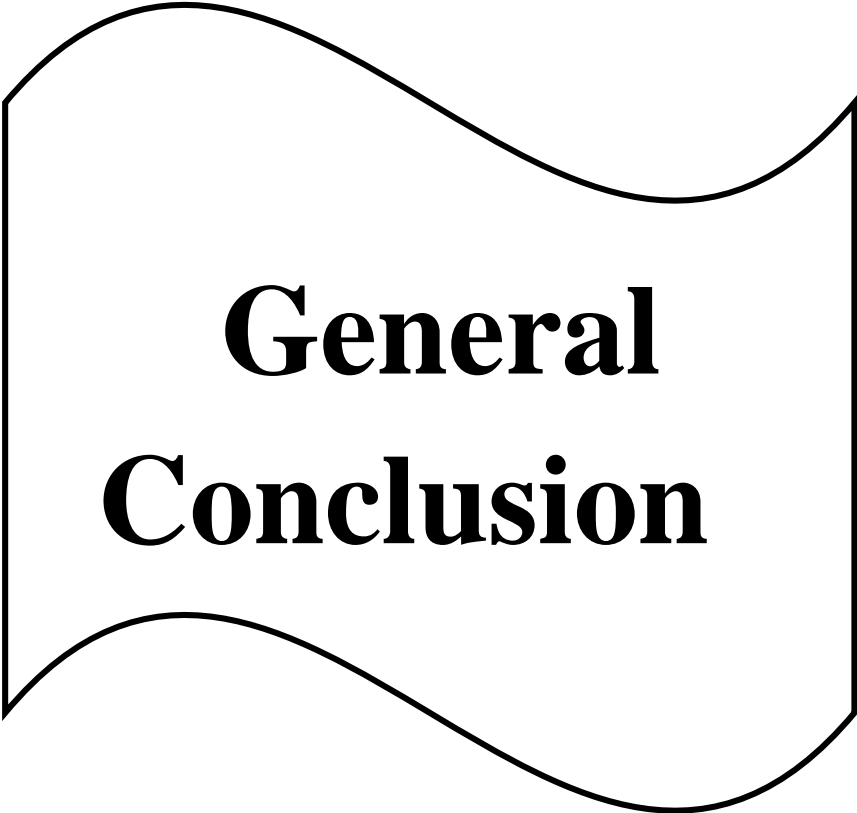
3.5. Conclusion:

At the beginning of our work, we had a lot of questions which we have summarized in one “How would people’s consumption behavior be when they are covered by healthcare insurance?”. In order to answer this question, we have put two hypotheses, the 1st: When individuals are covered by health insurance, they become irrational and consume health goods and services more.

And the 2nd: People-patients- behave rationally, when it comes to their health they reasonably consume.

Since we have found that, in Algeria the population is young and educated mostly, so when it comes to their health, to their well-being they are rational and they do not think about taking advantages of the privilege they have, like for example consuming health products, whether they are goods or services just because they can consume. Besides, the lack in communication between the higher authorities and the public is what made that gap, and raised the number of uninsured individuals.

We were able to reject the 1st hypothesis and confirm the 2nd one.



**General
Conclusion**

Conclusion:

“Consumers make decisions every single day. They decide whether to get medical help, when to have surgery, when to vaccinate themselves or their children, and how frequently to go to a follow-up appointment by the physician. The method of making such decisions may be complex because it can require the weighting of future costs and benefits, investments, family members' advice, and providers. There are times when rational choices are made by customers. However, in their health care decisions, there are still times when they do not make rational choices.” (Babaloula O., 2017)

The nature of the consumers, particularly in the health sector, is very specific, their demand of health can be an investment because they consider their health as a human capital, Grossman believes that every individuals was born with a “stock of health capital” that depreciate with age and that the investment in this capital could be with medical care, diet, exercise, recreation, and housing. And in order for this investment to succeed they need to produce.

Thought, the health production function can be influenced by several factors like age, area, social category, incomes...and the most important is the level of education that influence the efficiency of the production processes.

Moreover, health insurance can influence the demand of health goods and services, from hospital care to drugs and small equipment and dressing, when the price and quality changes the demand changes as well, and when you pay the whole costs or when an insurance company helps you with it you won't behave the same way.

Also, health spending around the world changes depending on the system and methods of each country. For example in one year the spending from one country to another changes, in 2017 France spent 11.31 % of its GPD and 8.6% in 2018, US 17.06 of its GPD and 17.11 %in 2018, and Algeria with 6.4% in 2017.

When insurance covers a person, it finds itself in front of number of, if we can say, issues. Consuming healthcare products came generally as a result of a need for the continuation of life and not a desire like in the case of a regular consumer. Likewise, consumers of healthcare product, or patients, find themselves in a dilemma of information about what their health condition and what they need. This lack of information, called information asymmetry between patients and the suppliers of healthcare leads to adverse selection, that presents usually a situation where the supplier has information which the demander does not have or inversely.

Moreover, Moral hazard is a direct example of asymmetric information that exists when there is a degree of uncertainty about certain factors, as well as the request for unnecessary medical care.

As it is already mentioned, there isn't a unified system of insurance in the world, there is the Beveridge, the Bismarck and the Mixed system, the mostly known, every country chooses the one that fits it.

General Conclusion

Algeria is known by its mixed system. It is a public health monopoly system lead by government and financed by employer and employee contributions and collected taxes.

So, in order to understand the behavior of the Algerian consumer and how it might differ when they are insured and when they are not, whether or not it would affect their consuming decisions. We have asked the question: How would people's consumption behavior be when they are covered by healthcare insurance? How would healthcare insurance influence the patient's decision?

After a field research, we could find that the Algerian consumers are educated when it comes to their health, they mostly consume the health products when needed and they do not abuse in consumption. And the proof was that more than 40% of the sample were not insured even though they still choose the private sector in case of illness, even if they have low incomes. Also we have seen that the young population whom do not have income (low than 20000da) they still prefer the good quality of services and product due to their educating background. Thus, insurance does not have a huge influence on the demand, or consumption of health products.

Consequently, we can reject our first hypothesis that states "H.1: When individuals are covered by health insurance, they become irrational and consume health goods and services more." And confirm the second one that says: "H.2: Individuals are conscious and well educated , when it comes to their health they reasonably consume."

We needed our analysis to be briefly discrete and this to extract tangible added value from our work.

It should be noted, however, that our memory has come up against a considerable lack of information, especially statistical data, exacerbated by the great dissimilarity of a few available sources, the nature of the customer, particularly in the health sector, and the lack of awareness of the different administrations about how to communicate with its consumers.

On the practical side, a major handicap in the analysis was the world's health situation in the recent time, that imposed on us a certain method of research that keeps us away from the direct contact to others.

During our research we found that insurance in Algeria is on its way to develop. Like the public insurance for example CNAS has a plan that has been put into consideration in 2015 that will cover individuals retirement by 100%, how is that? For now, the CNAS covers up to 80% of the individuals costs the rest 20% is an out of pocket, the government has made an article to make the mutual pay for the rest but they still didn't start to work with it.

Another important point that we have noticed is that the Algerian life and health insurance market "is lagging behind neighboring countries" and that we don't have complementary health insurance that people choose to adhere in them in order to cover them more. That's why a private insurance company the CAAT with the help of the FNI (BNA) and the BEA has created a new insurance company in 2011, Life insurance named Taamine Life Algeria (TALA) An institution specializing in insurance of persons.

General Conclusion

Further researches may address insurance companies influence the patients' behaviors, and their demand of healthcare products, and whether these companies will cover also the CCMG or CBSM. Hoping that the situation of the country will be better and necessary information will be available.

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Annex

The questionnaire

We are doing a survey to help the health sector to improve, for the good of population, so we welcome your comments. Please fill out this questionnaire, Thank you.

PS: the identity of the subscriber remains unknown.

1- Age:

- Less than 20 years;
- From 20 to 30 years;
- From 30 to 40 years;
- From 40 to 50 years;
- From 50 to 60 years;
- Older than 60 years;

2- Gender:

* Male

* Female

3- Your relationship statu:

- Single ;
- Married ;
- Divorced ;
- Widowed ;

4- Do you have children?

- Yes *No

5- Number of children;

.....

6- Number of children under 21 years;

.....

7- Level of education:

- University;
- High school;
- Or less;

8- Occupation:

- Not working;
- Student;
- Worker / Employee;
- Merchant;
- Self-employed person;
- Other;

9- Income

- Less than 20000 DA
- 20000 – 30000 DA;
- 30000 – 40000 DA;
- 40000 – 50000 DA;

- When the price is low;
- For advice;

21- Which one of the next determine your doctor choice decision;

- The price
- The quality
- Recommendation friend and family
- Being known/ his reputation;

22- Are you able and willing to pay any price for health care?

- Yes * No

23- If the prices of health goods/ services increase will you still consume the same way?

- Yes, I'll consume the same,
- It depends on the price,
- It depends on my health situation:
- I'll stop consuming;

Table of Contents

General Introduction	12
1. Research context:.....	13
2. Theoretical frame:.....	14
3. Research Question:	16
4. Study hypotheses:	17
5. Framework of the study:.....	17
1. Chapter I: Characteristics of Healthcare Demand	19
1.1. Introduction:.....	20
1.2. Most widely known theories of demand and consumption in the healthcare sector: 21	
1.2.1. Michael Grossman’s model:	21
1.2.2. Phelps and Newhouse’s model:	22
1.2.3. Price Elasticity of Demand:	24
1.3. The types of healthcare goods and services:.....	26
1.3.1. Hospital care:	26
1.3.2. Medical transportation:	26
• Non-emergency Medical Transportation	27
• Emergency Medical Transportation:.....	27
1.3.3. Ambulatory care:	27
1.3.4. Drugs:	28
1.3.5. Other medical goods:	29
1.4. Health spending around the world:	30
• In France for example:.....	30
• In the United States:.....	30
• In Algeria:.....	31
1.5. Factors influencing the consumption of healthcare:	34
1.5.1. Ageing:.....	34
1.5.1.1. Challenges in responding to population ageing:.....	34
1.5.1.2. Demographic shift:	34
1.5.2. Demographic change:.....	36
1.5.3. Age:.....	37

1.5.4.	The social professional category:	37
1.5.5.	Incomes:	38
1.5.6.	Level of education:	38
1.5.7.	Area:	39
1.6.	Conclusion:	41
2.	Chapter II: Insurance in Health Sector	42
2.1.	Introduction:	43
2.2.	The general theories of insurance:	44
2.2.1.	Health Demand and Influencing Factors:	44
2.2.2.	Information Asymmetry:	45
2.2.3.	Moral Hazard:	47
	2.2.3.1. Definition	47
	2.2.4. Different types of moral hazard:	48
2.2.5.	Adverse selection:	50
	2.2.5.1. What is adverse selection:	50
	2.2.5.2. Adverse selection in insurance:	50
2.3.	The health system:	52
2.3.1.	Definition:	52
2.3.2.	Health system in the world: This section provides a brief explanation:	52
	2.3.2.1. Beveridge (England, 1948):	52
	2.3.2.2. Bismarck (Germany, 1883):	53
	2.3.2.3. Mixed system (United States):	53
2.4.	The social insurance program:	54
2.4.1.	Health insurance :	55
2.4.2.	Complementary health insurance:	55
2.5.	The social Security system in Algeria	56
2.5.1.	Social security:	56
2.5.2.	. Health insurance in Algeria:	58
2.5.3.	. Organization of health insurance in Algeria:	58
	2.5.3.1. The CNAS: National social Insurance Fund:	59
2.6.	Conclusion:	61
3.	chapter III: Case Study	62
3.1.	Introduction:	63
3.2.	Target population:	64

3.3. Methodology used in the research:	64
3.4. Data analysis:	65
3.5. Conclusion:	79
General Conclusion	80
Bibliography:.....	84

Abstract:

Around the world, there are still people who are struggling to pay for their health care. Most of the ways they use to pay for its needs, in various countries, is health insurance, which covers the expense of medication and any incidental expenses. The nature of consumers is very unique, especially in the health sector. Usually, when they are insured, they tend to have the best quality treatments. For this reason, we have wondered how they would actually act. Would they be rational or not during their consumption of health products when they are covered? So, we carried out a quantitative descriptive study of a sample of more than 170 persons in the region of Jijel based on a survey. After analyzing the results, we could reject the hypothesis that says that people consume more whenever they are insured, and confirmed the one that says that when it comes to their health people are rational. Consequently, we can say that people's consumption behavior can be eliminated from the reasons of the high insurance fund expenses, and start to think of some new correct management tools for the insurance companies.

Key words:

Healthcare insurance, healthcare products, consumption of healthcare products, patient.

Résumé :

Dans différents pays du monde, ils existent encore des gens qui n'arrivent pas à payer leurs soins de santé. La plupart des moyens qu'ils utilisent pour subvenir à leurs besoins est l'assurance maladie, qui couvre les frais de médicaments et les éventuels frais accessoires. La nature des consommateurs est tout à fait unique, en particulier dans le secteur de la santé. Généralement, lorsqu'ils sont assurés, ils ont tendance à bénéficier des meilleurs traitements. Pour cette raison, nous nous sommes demandé comment agir réellement. Seraient-ils rationnels ou non lors de leur consommation de produits de santé lorsqu'ils sont couverts ? Ainsi, nous avons réalisé une étude descriptive quantitative d'un échantillon de plus de 170 personnes dans la région de Jijel à partir d'une enquête. Après avoir analysé les résultats, nous pourrions rejeter l'hypothèse qui dit que les gens consomment plus chaque fois qu'ils sont assurés, et confirmer celle qui dit qu'en ce qui concerne leur santé, les gens sont rationnels. Par conséquent, nous pouvons dire que le comportement de consommation des gens peut être éliminé des raisons des dépenses élevées des fonds d'assurance, et commencer à penser à de nouveaux outils de gestion corrects pour les compagnies d'assurance.

Mots clés :

Assurance maladie, produits de santé, consommation des produits de santé, patient.

ملخص:

في بلدان مختلفة من العالم ، لا يزال هناك أشخاص لا يستطيعون دفع تكاليف الرعاية الصحية الخاصة بهم. معظم الوسائل التي يستخدمونها لإعالة أنفسهم هي التأمين الصحي ، الذي يغطي تكلفة الأدوية وأي تكاليف أخرى عرضية. طبيعة المستهلكين فريدة للغاية ، لا سيما في مجال الرعاية الصحية. عادة ، عندما يكونون مؤمن عليهم ، فإنهم يميلون إلى الحصول على أفضل العلاجات. لهذا السبب ، تساءلنا كيف سيتصرفون بالفعل. هل سيكونون عقلانيين أم لا أثناء استهلاكهم للمنتجات الصحية عندما لذلك قمنا بإجراء دراسة وصفية كمية بناء على دراسة استقصائية لعينة من أكثر من 170 شخصًا (في منطقة جيجل). بعد تحليل النتائج ، تمكنا من رفض الفرضية القائلة بأن الناس يستهلكون أكثر عندما يكونون مؤمن عليهم ، وقبول تلك التي تقول أنه عندما يتعلق الأمر بصحتهم ، فإن الناس عقلانيون. لذلك يمكننا القول إن السلوك الاستهلاكي للأشخاص يمكن أن لا يعتبر من الأسباب الرئيسية لارتفاع نفقات صناديق التأمين الصحي، والبدء في التفكير في طرق إدارة صحيحة جديدة لشركات التأمين.

الكلمات المفتاحية:

التأمين الصحي، السلع الصحية، استهلاك المنتجات الصحية، المريض (المستهلك الصحي).