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**ARABIC/FRENCH CODE SWITCHING AMONG
DOCTORS AND PATIENTS IN A RURAL
CONTEXT: THE CASE OF BENI SNOUS**

**Thesis submitted to the department of English as a partial fulfillment of the
Requirements for Master's degree in Language Sciences**

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Declaration of Originality

I, Lahmer Rayane Rihab, hereby declare that this thesis, entitled "Arabic/French Code Switching Among Doctors and Patients in A Rural Context: The Case of Beni Snous" is a result of my own original work and has been composed solely by myself, except where I have explicitly indicated the sources of quoted materials, which I have included either literally or in modified form. Also, I confirm that the research findings are generated by my own research. This extended essay has not been submitted for any other degree or professional qualification at this or any other institution. All sources of information and data used in this thesis have been duly acknowledged.

Lahmer Rayane Rihab

Signature:

Dedication

I dedicate this work to my family, whose unwavering love, support and encouragement have been the foundation of my success.

To my dear parents, whose sacrifices, guidance and prayers have shaped my path and have made this journey possible.

To my dear husband, whose patience, understanding, love, support and belief in me have been my anchor in times of challenges. To my precious son 'Ali', who brings joy and inspiration into my life.

To my lovely brothers 'Tareq & Moussa', whose encouragement and belief in my abilities have been invaluable.

This thesis is dedicated to you all, with immense love and gratitude.

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Abstract

In the medical field, communication is an important component of clinical practice for both doctors and patients to provide a satisfactory medical care. Poor interaction can lead to inaccurate diagnosis. The main objective of this research was to examine language use in the Algerian rural healthcare contexts, and to look into the problems of communication that existed between doctors and patients as a result of historical, educational, social, and economic factors which led to linguistic gaps among members of the community. Also, the research sought to identify the main reasons of alternation between Algerian Arabic and French among doctors and patients. A case study was conducted in some private medical offices and public hospital in 'Beni-Snous' valley which is situated in Tlemcen, Algeria. Relying on a number of sources and research instruments for data collection, a questionnaire was conducted for doctors, another one for patients and consultation observation using note-taking and recording. The data collected from these research tools were analysed quantitatively and qualitatively. The results revealed that language barriers existed between doctors and patients due to variation in French language proficiency as well as the use of complex medical terminology. Thus, doctors code switch between Arabic and French to achieve many functions. This study came to conclusion that language barriers and code switching are sociolinguistic phenomenon that existed in the medical field in Algerian healthcare settings in general and rural healthcare settings in particular.

List of Acronyms and Abbreviations

Ar :	Arabic.
Fr :	French.
AA :	Algerian Arabic.
MSA :	Modern Standard Arabic.
CA :	Classical Arabic.
CS :	Code switching.
DPI :	Doctor-patient-Interaction.
H :	High.
L :	Low.
L1 :	First language.
L2 :	Second language.
ML :	Medical language.
EL :	Everyday language.
US :	United States.
LEP:	Limited English Proficiency.
IOM:	Institute of Medicine.

List of Phonetic Symbols of Arabic Phonemes

Arabic	Phonetics	Short vowels	Long vowels
Consonants	Symbols		
أ	ʔ	a	a:
ب	b	u	u:
ت	t	i	i:
ث	θ		
ج	dʒ		
ح	h		
خ	x		
د	d		
ذ	ð		
ر	r		
ز	z		
س	s		
ش	ʃ		
ص	sʕ		
ض	dʕ		
ط	t̤		
ظ	ðʕ		
ع	ʕ		
غ	ɣ		
ف	f		
ق	q		
ك	k		
ل	l		
م	m		
ن	n		
هـ	h		
و	w		
ي	j		

N.B

The phonetic symbols listed above are the conventions the researcher has used in transcribing her own data.

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General Introduction

General Introduction

Language stands as a powerful tool, playing a crucial role in communication, particularly within the complex dynamics of healthcare interactions. In Algeria, multiple languages, including Arabic (hereafter Ar), Berber, and French (hereafter FR), are used daily due to its diverse linguistic and cultural landscape. The healthcare system in Algeria caters to a linguistically diverse population, mirroring the nation's historical and cultural influences. Doctors and patients continue to rely on mutual understanding to identify illnesses. In rural contexts, this diversity is particularly evident, as individuals often switch between Ar, Berber languages, and Fr in their day-to-day activities. The interplay of these languages in medical consultations forms a compelling area of study, impacting the effectiveness of doctor-patient communication and, consequently, healthcare outcomes.

This dissertation delves into the nuanced phenomenon of code switching (hereafter CS) among doctors and patients in the unique context of rural Algeria, where linguistic diversity and cultural intricacies shape healthcare encounters. This study seeks to investigate the linguistic barriers in doctors and patients interactions, and to unravel the patterns, motivations, and consequences of CS, aiming to provide valuable insights for enhancing the communicative efficacy of healthcare practices.

Indeed, effective communication is fundamental to successful medical interactions. However, the use of multiple languages and CS between doctors and patients introduces a layer of complexity that demands scholarly attention. A person with minimal or no Fr language skills and limited health literacy may experience lower-quality healthcare services, because physicians in Algeria are taught and trained in Fr and they are deeply influenced by Fr and medical jargons.

Actually, this research is an attempt to examine communication issues that are induced by the coexistence of different language varieties in Algeria, and to uncover the patterns, motivations, and consequences of CS in medical consultations

within the unique context of Algerian rural areas. First, it aims to investigate the reasons behind the communication barriers between doctors and patients. It also investigates the factors responsible for Ar-Fr code switching.

Consequently, the researcher strives to answer the following questions in order to specify the discussed topic issue:

- 1- What are the problems of communication that exist between doctors and patients during the medical consultation in the Algerian rural healthcare settings ?
- 2- Why do doctors code-switch between Ar/Fr during the medical consultation in the Algerian rural healthcare settings?

The above mentioned questions led to formulate two hypotheses:

- 1- Language barriers contribute significantly to communication problems between doctors and patients in Algerian rural healthcare settings during medical consultations.
- 2- Doctors code-switch between Ar/Fr can be a tool to achieve many functions such as to simplify medical information, to fill lexical gaps or to provide prescription instructions.

In order to reach the previously set objectives, the researcher designs an exploratory case study research dealing with The Algerian rural healthcare settings in Beni-Snous (Tlemcen). This case study will collect qualitative and quantitative data from different sources relying on a set of research instruments: a questionnaire for doctors, a second one for patients and observation of the medical consultation using recordings and notes taking. The results will be analysed and triangulated on the basis of a mixed approach combining qualitative and quantitative methods.

To carry out this case study research, the present work is purposefully divided into two interrelated chapters: The first chapter is the theoretical part and it consists of two parts. The first one is devoted to the description of the Algerian linguistic profile and the status of the different languages. The second one is the literature review of language barriers and CS in healthcare contexts. It also offers an

overview of the previous research works on language in doctor-patient communication and concepts in relation to the study. On the other hand, the second chapter is the practical part and it is divided into two sections. The first one gives description of the methodology used during the investigation, however, the second section is concerned with the analysis and interpretation of the data collected to see whether the hypotheses are valid or not, and finally a general conclusion.

Chapter One

The Algerian linguistic profile

&

literature review

1.1 Introduction

It is by no mere chance that Algeria has a multilingual profile. This diversity is due to historical, social and political events of that country. Algeria was settled by the Berbers, also, it was invaded for centuries by different powers, for instance, Romans, the Vandals, the Byzantines, the Arabs, the Turks, the Spanish, the Italians and finally by the Fr power. To this day, a numerous linguistic varieties are coexisting and used by Algerian speakers: Algerian Arabic (hereafter AA), Modern Standard Arabic (hereafter MSA), Fr and Berber. Also, the Fr language has been preserved as the language of medicine, doctors and science in general. However, not all the members of its population are multilinguals nor bilinguals. The primary objective of this contribution is to explore certain phenomenon related to language contact in Algeria. While Algeria is predominantly an Ar-speaking country, Berber is also spoken in certain regions. In light of these linguistic nuances, the dynamics of language contact in Algeria has occurred across distinct historical periods, involving diverse languages and their respective variations. Notably, over 130 years of contact between Fr and the native population has yielded to significant outcomes. This chapter provides a picture about the sociolinguistic situation in Algeria, and a broad study of phenomenon that are related to language contact, in addition to an overview of the linguistic side in the healthcare setting.

1.2 The sociolinguistic situation in Algeria

Algeria stands out as a multilingual country with a fascinating and diverse linguistic landscape. It is known for its rich blend of languages, reflecting its historical, cultural, and ethnic diversity. Ar and Berber are the two main languages in Algeria. The current work does not intend to delve into the intricacies of the language situation in Algeria. However, it is essential to provide a brief overview of its general framework.

1.2.1 Algerian Arabic

AA is a simplified version of CA. It is the colloquial form of Ar spoken by the majority of the population. It is acquired at home and it is considered as the mother tongue of Algerians. AA has various accents and regional dialects.

AA is influenced by the language of Algeria's former conquerors. Hence, there still remain traces of Turkish words in the dialects of Northern places like Tlemcen, Constantine, Algiers, etc. Some Spanish terms exist in the dialects of the North-Western areas such as Oran, Mostaganem and Sidi Bel-Abbes. In addition to Italian and Maltese words in the centre and the Eastern coast of Algeria (Bouhadiba, 2010 :44). However, the major influence comes from the Fr language. AA has adopted and adapted a lot of Fr words which are used and mixed with Ar in conversations.

1.2.2 Classical Arabic

Classical Ar is called /العربية الفصحى/, which means 'clear Ar' (Dendane, 2006 : 78). Western authors generally use old or literary Ar. Linguistically speaking, CA is in proximity to MSA, The fundamental difference between CA and MSA primarily stems from the connection of CA with religious books of Islam, for instance, the Holy book 'Quran', the collection of sayings of the Prophet Mohamed (PBUH), the books of 'Hadith' in addition to the ancient literary heritage such as the AR poetry of the period before Islam.

In fact, MSA is used primarily in formal and written contexts, such as in government, education, and the media. It is employed and written similarly to CA. They share the same grammatical structures and the same rules. Indeed, MSA has new vocabularies which have been originated from other existing Ar words. Moreover, other terms are newly borrowed or coined from other languages. Nevertheless, Arabisation policy was carried out by the government after independence in order to replace to Fr language, as Benrabah (2007: 195) assumes it:

One of the main objectives of Arabization was to make Algerians abandon French as well as their first languages (Algerian Arabic and Tamazight or Berber) in favour of Literary Arabic as the primary means of communication and socialization (in the media, administration, education, home and employment).

Nonetheless, this could not be reached. CA and MSA are learnt at schools and mosques and they are only used for formal purposes.

1.2.3 Berber

‘Tamazight’ is another term used to refer to the Berber language. It is a language spoken by various ethnic groups, including the Kabyles, Chaouis, and Mozabites. It has several dialects, and efforts have been made to promote its use and recognition. In 2016, Tamazight was recognized as Algeria’s second national and official language after AR. Berber contains Numerous Ar lexical items, this is due to, according to Benrabah (2014: 44), both Ar and Berber are part of semitic language family and they have a genetic predisposition to take in linguistic features and structures from each other. However, Berber people can speak and understand AA, conversely, the reverse is not accurate.

1.2.4 French

French was the colonial language during the period of Fr rule in Algeria (1830-1962). Despite gaining independence, Fr continues to play a significant role in various domains, including administration, education and teaching purposes in scientific fields at universities, business, and in written and speaking media.

Fr is also used by many Algerian bilinguals in their conversations. It has long been the first foreign language taught at primary and middle schools. It is also the language of instruction in medical studies. Besides, Algerians mix between Fr and the local varieties (AA and Berber) in their everyday interactions. This alternation is used to fill linguistic and conversational gaps that may occur in interactions (cf. Kebbas and Abbes, 2012:44). Also, there are many Fr words which are adopted in AA and Berber, and they are used as components of these vernacular local varieties. Moreover, the utilization of the Fr language is frequently linked to individuals in Algerian society who are considered well-educated and

knowledgeable. Professionals such as doctors, academics, journalists, and various state officials commonly employ FR in both their professional and everyday discussions.

1.3 Overview of the linguistic diversity in Algerian healthcare settings

In Algerian healthcare settings, linguistic diversity is due to the country's colonial history, cultural exchanges, and regional dialectal variations, the predominance in Algeria of Fr over Ar was in the first place due to the introduction of modern medicine and medical education by the Fr in 1833 (Khiati, 2000). The Fr coloniser introduced modern medicine in Algeria during the colonial period. After independence, the Algerian doctors who undergo education in Fr could not deliver medical teaching in Ar because of their Fr literacy. Hence, for long decades after independence, Fr has been preserved as the language of medicine, science and modernisation in general.

Healthcare professionals need to be proficient in both Ar and Fr to effectively communicate with patients and colleagues. In Algerian healthcare, different languages and cultures are common, so healthcare workers need to be culturally sensitive and communicate effectively. They should understand patients' language preferences and cultural norms to provide the best care.

1.4 Language Contact

Language contact represents a significant point in sociolinguistics and has garnered considerable attention through various studies in recent years. It plays a crucial role in shaping new languages and linguistic variations, as well as contributing to the prevalence of multilingualism across the globe. The complexity of language contact has been thoroughly investigated in contemporary research (Muysken 2013; Myers-Scotton 2006; Poplack 1980).

1.4.1 Diglossia

The term diglossia¹ brought into sociolinguistic by Charles Ferguson (1959). Ferguson's conceptualization of diglossia can be summarized as follows:

DIGLOSSIA is a relatively stable language situation in which, in addition to the primary dialects of the language (which may include a standard or regional standards), there is a very divergent, highly codified (often grammatically more complex) superposed variety, the vehicle of a large and respected body of written literature, either of an earlier period or in another speech community, which is learned largely by formal education and is used for most written and formal spoken purposes but is not used by any sector of the community for ordinary conversation . (Ferguson, 1959 :336)

Thus, diglossia is a situation where two varieties of the same language 'exist side by side throughout the community with each having a definite role to play' (Ferguson, 1959: 325), and used under different conditions. This concept was primarily devised to characterize language situation found in four distinct regions in the world: The Arab world, Switzerland, Haiti and Greece.

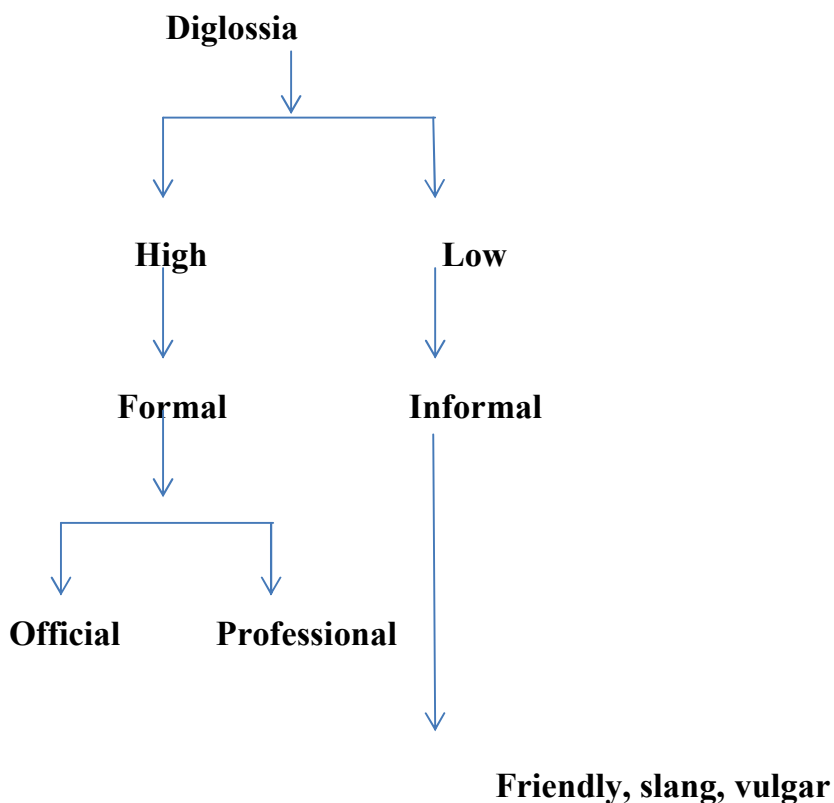
¹ The term diglossia was first coined by W.Marçais (1930-1931) to describe the AR language situation. He defines it as 'la concurrence entre une langue savante écrite et une langue vulgaire, parfois exclusivement parlée'

Table 1.1. Typical cases of diglossia according to Ferguson (1959)

Country	H- variety	L-variety
German speaking part of Switzeland	Standard German	Swiss German dialects
Haiti	FR	Haitian Creole (FR based creole language)
Greece	Katharévusa (purified Greek)	Dhimotiki
Arab notions	Classical AR	Regional varieties of AR used in colloquial speech

These varieties are used in different context or for different purposes. One variety is often referred to as the **‘high’** variety. High variety (hereafter H) is considered the standard variety of language usage, typically employed in formal or official contexts such as governmental proceedings, conferences, official correspondence, broadcasts, religious ceremonies, and educational settings. It serves literary and literacy functions and is utilized for formal, public, and official purposes (Spolsky, 2008). This standard form of language is often referred to as high variety or H-variety (Longman Dictionary of Applied Linguistics, 1985).

In contrast, the other variety, known as the **‘Low’** variety (hereafter L), it is employed in casual settings such as interactions with family members, neighbors, local markets, and conversations among friends or acquaintances (Spolsky, 2008). It serves the purpose of everyday conversation and is used informally in daily life. This informal variant is often referred to as the non-prestige variety, or L variety (Longman Dictionary of Applied Linguistics, 1985).



Sanjida Abedin Rafha

These two varieties are in functional separation within a community, i.e. each serving specific purposes or social context that the other does not.

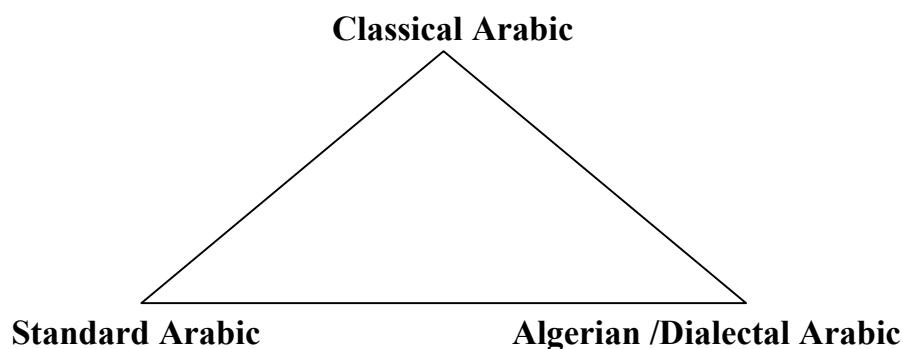
The sociolinguist Fishman (1967) expanded on the concept of diglossia to a broader range of language situation, he introduced the notion that diglossia could be extended to situations found in many societies where forms of *genetically unrelated* (or at least historically distant) languages occupy the H and L niches. He (1971: 75) mentions the example of Paraguay where Spanish (H) is the official language used in formal settings, and Guarani (L) at home in everyday interactions. Other examples include Biblical Hebrew and Yiddish for many Jews, and even Standard English and Caribbean Creole.

The best example of diglossia is the Algerian diglossic situation which is highly precise on which Schiffman's definition may be applied². He asserts that 'in some linguistic cultures, all speakers exhibit diglossic behaviour (i.e. use both H

² In Hudson(2002 :05).

and L varieties in complementary distribution), while on the other hand, others, only a minority or elite control the H domain successfully' (1997: 206). Fishman expanded the characteristics of diglossia language from three to nine, encompassing aspects related to function, prestige, literary heritage, morphology, syntax, phonology, acquisition, and standardization (Fishman, 1967).

In Algeria, MSA and Fr are the H varieties to be used in formal spheres, and AA and Berber as L. The distribution of the two varieties is not equal among the members of the Algerian community. The promulgation of the Arabisation policy failed to fully arabise people, only individuals who are educated can utilize the H variety, i.e. either MSA or/and Fr. Conversely, illiterate people may not be able to use FR and/or MSA appropriately³, for instance, the radio or television is a formal context in which only H varieties are used, it is unavoidable to come across Algerians making calls during religious programs in the Quran channel where only MSA is to be used, speaking in Berber or AA to the animator, due to the fact that they lack proficiency in MSA. The same happens during programs of the Algerian radio 3rd channel in which the Fr language is employed and many participants use L variety instead of Fr.



³ Similarly, a speaker who has not FR as a language of instruction in higher education may not be able to use FR appropriately enough.

This research intention is not to get deeper into the Algerian diglossic situation, but to introduce another phenomenon ‘Bilingualism’ which is resulted from diglossia.

1.4.2 Bilingualism

According to Weinreich (1957 :01) ‘two or more languages will be said to be in contact if they are used alternately by the same persons’, language contact refers to a situation in which individuals within a community engage with each other using two or more distinct languages. This contact, in the long term, typically results in bilingualism or multilingualism. Diebold (1964 :496) writes ‘when two languages come into contact, speakers of either language may learn elements of the other language. This acquisition of non-native language produces bilingualism’. The concepts of bilingualism and bilinguality have been the focus of many linguists. Scholars have provided varying definitions of bilingualism in a continuum ranging from MCNaman’s (1967a) definition-indicating that a bilingual is an individual who has a minimal competence in one of the four language skills, listening, speaking, reading and writing in a foreign language - to Bloomfield’s (1935: 56) perspective that the bilingual should have ‘native-like control of two languages’ which is a very restrictive view of only ‘perfect bilingual’. Thus, it would be recognized that ‘Bilingualism is not an all or none property, but is an individual characteristic that may exist to degrees varying from minimal competency to complete mastery of more than one language’ Hornby (1977: 03), i.e. Bilingualism is a personal characteristic that can range from a basic proficiency to complete fluency in more than one language in the four skills.

Also, Hamers and Blanc (2000: 06) defines ‘**bilinguality**’ as a situation of a person who has the chance to use more than one linguistic code⁴ for social communication. While bilingualism is the result of the spread of some bilinguality among members of a community .Bilingualism can be seen along a continuum ranging from basic usage of few words in a second language to complete fluency in

⁴ The term is relatively neutral conceptualization of linguistic variety, be it a language or a dialect.

two or more languages. Consequently, every bilingual person can be positioned at a specific point along this continuum within a multilingual society.

Moreover, another important question: Why do we become bilingual? There are numerous reasons including:

- ❖ Being born into a family where both parents speak two different languages;
- ❖ Living in a bilingual society where the language spoken at home is not the same as the foreign language.
- ❖ Moving to another nation.
- ❖ Needing it for certain jobs (like teaching, translating, or international journalism), etc.

Weinreich drew a distinction between bilinguals in terms of ‘**compound**’, ‘**coordinate**’ and ‘**subordinate**’ bilingual. The first case involves an individual acquiring two languages in the same environment, such as a child raised by parents who consistently use two languages interchangeably. Conversely, a coordinate bilingual first learns their primary language at home from birth, then, acquires a second language in different setting, such as at school. They maintain a separation between the languages even though they may be equally proficient in both languages. However, subordinate bilingual learns an additional language later in life and typically does not attain the same level of proficiency as in their first language.

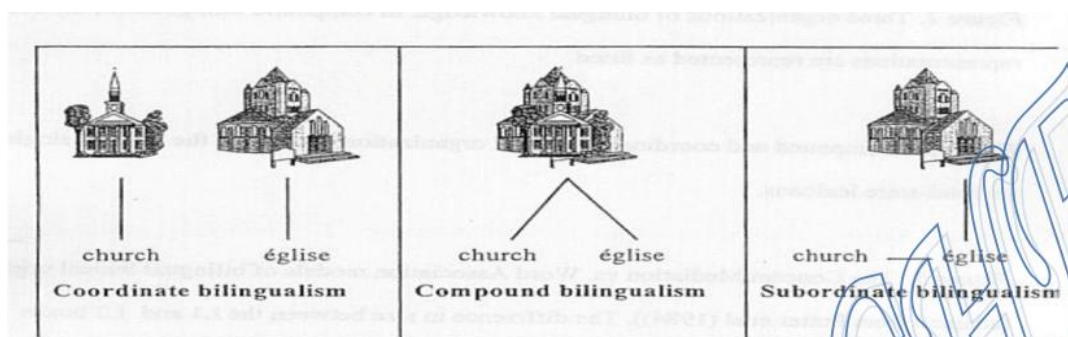


Figure 1.1. Three bilingual cognitive storage representations (Betram et.al 2005)

Moreover, scholars classified bilinguals according to the age of acquisition into ‘early bilingual’ and ‘late bilingual’.

a) Early Bilingual

It involves a child acquiring a second language alongside their mother tongue, i.e. when children start to regularly learn two languages from birth (simultaneous bilingual), often facilitated by parents communicating with their children both languages simultaneously, this process, known as ‘additive bilingualism’⁵, it is also called a process of bilingual first language acquisition (two first languages) (Meisel, 1989; De Houwer, 1990, 2009). The second case is when they start to hear a second language at a late age before the age of six (sequential/consecutive/successive early bilinguals), they are going through a process of early second language acquisition (De Houwer, 1990, 2009). For example, when a child relocates to a new linguistic community, like Algerian immigrants’ children learning Fr in France, They are exposed to a dominant language.

b) Late Bilingual

‘Late bilingualism’ refers to the acquisition of second language after the first language, typically, occurring after the age of 6-7. Late bilinguals utilized their first language as a foundation for learning the second, leading to transfer the previously acquired linguistic structures.

1.4.3 Code switching and its types

Code switching is among the most apparent and immediate phenomenon arising from bilingualism. Most bilingual individuals worldwide naturally switch between languages or mix them in their everyday speech, often without full awareness of the process.

In bilingual communities, this constant language switching and mixing can function as a third code for communication. CS likely occurred historically

⁵ The term refers to the situation where a person has acquired the two languages in a balanced manner. It is a stronger bilingualism.

whenever two languages were in contact, with users acknowledging or observing its use in various social settings. The systematic study of CS and its reasons began in the early 20th century when linguistics became a modern science. Gumperz and his associates are recognized as pioneers in systematically studying CS, acknowledging its widespread usage in communities with diverse language varieties. Their objective is to propose a theory of CS from an ethnographic perspective.

The phenomenon of CS, an eventual outcome of language contact situations is likely to occur when two languages have been in sufficient contact, and speakers may possess a relative fluency in a second or foreign language. It is defined as the alternation of codes in a single speech exchange (Gumperz 1982: 59). Nevertheless, Researchers have been compelled to propose various definitions due to the diverse range of practices within CS and the multiple perspectives from which it can be examined.

Bentahila and Davis (1983: 302) described CS as ‘...the use of two languages within a single conversation, exchange or utterance’. Milroy and Muysken (1995: 7) Expressed a similar perspective when they said that CS is ‘*the alternative use by bilinguals of two or more languages in the same conversation.*’

Myers-Scotton (1993b: 3) provides a more detailed definition arguing that “Code switching [...] is the selection by bilinguals or multilinguals of forms from embedded variety (or varieties) in utterances of a matrix variety during the same conversation.” Myers-Scotton introduced her markedness model, which examines CS in bilingual conversations within bilingual communities. The model is grounded in the participants' intention to convey a range of rights and obligations. According to her perspective, speakers employ CS to signal their perceptions of self and others by utilizing unmarked (expected) and notably marked (unexpected) language selections. These choices are linked to the communication of social meanings, encompassing aspects such as deference, anger, power, solidarity, and distance.

Blom and Gumperz (1972) introduced the terms "situational code switching" and "metaphorical code switching" to distinguish between the tendency to switch codes when the context changes and when the topic changes, respectively.

For example, a teacher in a classroom may use the standard form (MSA, for instance), but switch to a colloquial variety when interacting with students outside the classroom. However, a metaphorical switch may occur even in the same setting if the conversation shifts to a topic that requires a different linguistic code.

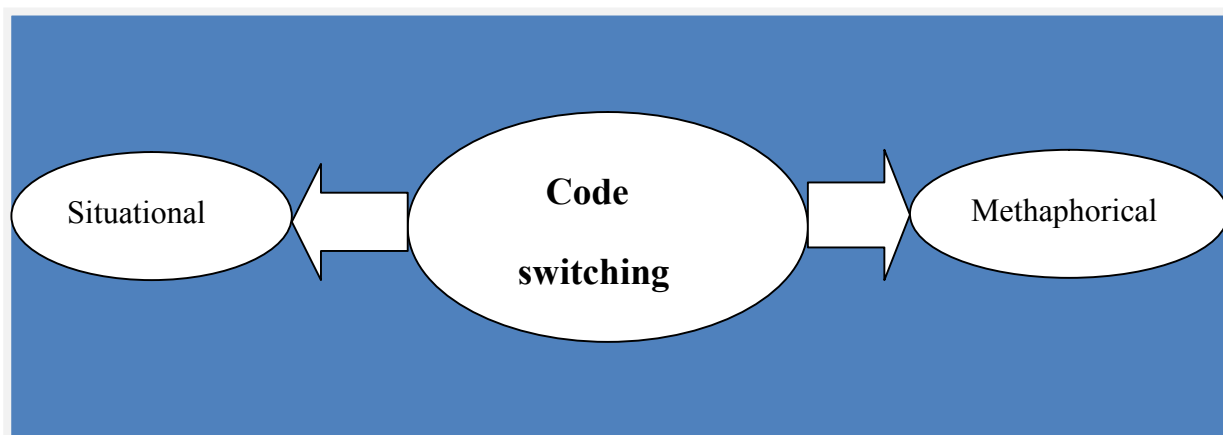


Figure 1.2.Types of Code Switching

In Algeria, during informal discussions, interlocutors might switch to standard Ar (MSA) when discussing religious themes or topics that dialectal forms cannot adequately express. Similarly, doctors may consistently switch to Fr when addressing professional matters and issues that are challenging to explain in Colloquial Ar or MSA. In other words, situational switching occurs as a result of a change in the situation because of the change in some external factors, like the setting, the participants, the topic, etc. However, metaphorical switching occurs without any change in the external factors of the speech situation. Instead, it is used to indicate a shift in the topical emphasis of the speech situation. Subsequently, Gumperz(1982) replaced the term metaphorical switching with conversational switching which he defines as “the juxtaposition within the same speech exchange of passages of speech belonging to two different grammatical systems or subsystems” (1982 : 4).

Poplack (1980) has proposed three types of CS:

1.4.3.1 Intersentential Code Switching

It happens at the boundary of a sentence or even at the boundary of a clause. This occurs when the speaker starts with a sentence or clause in L1, then switches to L2 for another sentence or clause. The best example that most linguists use is that of Puerto Rican bilingual Spanish/English speech: ‘sometimes I’ll start a sentence in Spanish y termino en espanol’ (Poplack :1980 : 594).

*For example: "Nous devons faire une échographie pour vérifier حالة الجنين."
(We need to perform an ultrasound to check the fetus' condition.)*

1.4.3.2 Intrasentential Code Switching

It occurs within a single clause or sentence. The shift is done in the middle of the sentence/clause combining small units from both languages, without any pause indicating the switch. For example:

"المريض a été admis في قسم الطوارئ لتلقي des soins immédiats."

(The patient was admitted to the emergency department for immediate care.)

1.4.3.3 Extra-Sentential Switching

It is also known as tag-switching, refers to the practice of incorporating exclamations, tags, and pre-existing expressions from the embedded language into the recipient language. For example:

"Le patient a été diagnostiqué avec une hypertension artérielle, mais بإذن الله il va bien se rétablir."

(The patient has been diagnosed with high blood pressure, but God willing, he will recover well.)

1.4.4 Reasons for Code Switching

The social science literature has provided a full description of CS, which is the common linguistic phenomenon of mixing languages, dialects, tones, or lexicons within a single discussion. Of fact, there are a number of reasons why people switch codes (Holmes, 1992). They are as follow:

a. Asserting power, pride and status

People mix or switch between languages because it increases the status, authority, and power of the speaker.

b. Declaring Solidarity

One such reason why people use CS is to show support for a specific social group or audience.

c. Expressing Ethnic Identity

One of the most significant aspects of human symbolic activity is language, which has evolved into a social group's identity. According to Alexander, in Malesevic (2004: 49), ethnicity is defined as the actual or perceived innate characteristics that belong to a group because of a common race, religion, or national origin; in the latter case, linguistic and other cultural traits connected to a shared geographical ancestry are included.

d. Expressing Self Emotion

In this situation, a speaker might indicate self-emotion, such as anger, sadness, or happiness, by changing their code, or language.

e. Being More Competence

Speakers can have difficulty finding the right term in the language being used. As a result, they mix or switch to a different language (lack of vocabulary).

f. Being More Informative (message oriented)

No matter where they are speaking, people can choose a specific type of code to make it simpler to discuss a certain subject in a conversation (Holmes, 1992: 29). Furthermore, language can be used by speakers of any language to place themselves in relation to both the people they are speaking to and the people they are speaking about, according to Hudson (2001: 131). It is crucial to keep in mind these languages as a counterargument to the notion that language exists only to efficiently deliver messages because the core components of their grammatical systems are devoted to this significant social role.

g. Conveying the speaker's attitude to the listener

CS was typically employed by the speaker to express their attitude and encourage participation from the listener.

1.4.5 Functions of Code Switching

As previously mentioned, several linguistic perspectives have extensively explored the reasons behind code switching. Due to limitations in the scope of this research, it's not feasible to apply multiple linguistic perspectives simultaneously. Thus, the researcher has chosen one linguistic perspective to analyze the functions of CS exhibited by the study sample. The selected perspective is based on the functional model of CS proposed by Appel and Muysken (2006). Additionally, Hoffman's model of code switching, which outlines ten functions, is also utilized. This is illustrated in (Figure1.3) below.

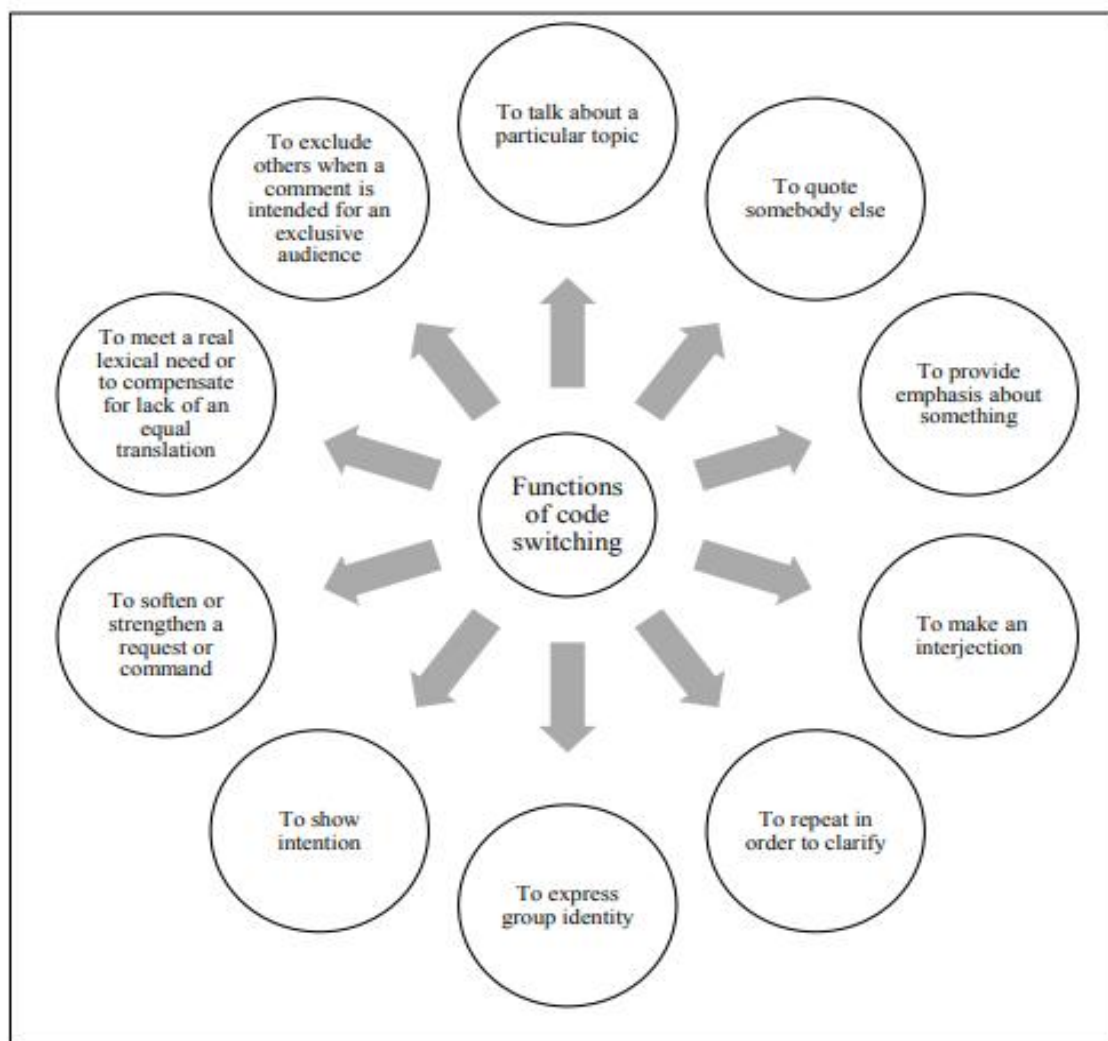


Figure 1.3. Functions of Code Switching (Hoffman, 1991)

Hoffman's model of CS functions, as depicted in the above figure, suggests that individuals typically engage in CS for various purposes. These include discussing specific topics, expressing group identity, quoting others, repeating for clarification, emphasizing points, interjecting, addressing exclusive audiences, conveying intention, finding suitable vocabulary, or compensating for translation gaps, and modifying the tone of requests or commands.

1.4.6 Borrowing

Languages worldwide, throughout history, have consistently borrowed and lent words due to contact with other cultures and peoples. This interaction has led to situations where languages, like English, have more borrowed words than native ones. Etymology emerged as a crucial tool within comparative historical

linguistics to identify borrowed words and track the sound changes they have undergone. Initially relying on philological research methods, later supplemented by dialectological data, etymology helps understand the linguistic evolution of words. Pioneering scholars such as Whitney (1881), Sapir (1921), Bloomfield (1933), Haugen (1950), and Weinreich (1953) have significantly contributed to this field.

The process of borrowing has been examined from multiple angles, encompassing vocabulary, phonology, and morphology of loanwords, to enhance our comprehension of “how languages influence one another” (Sapir 1921). Previous research has demonstrated how borrowings entered languages like English and underwent structural transformations over time due to differing phonological and morphological systems. Apple and Muysken (2005:153) concur that “words are borrowed in a relatively abstract form, which is subsequently adapted to fit the sound patterns of the receiving language.”

Thomason & Kaufman (1988: 21) describe borrowing as ‘to refer to the incorporation of foreign elements into the speakers’ native language’. The concept borrowing is based on a strange metaphor (after all, the donor language does not expect to receive its word back), thus, the term *transfer* or *transference* (e.g. clyne 2004) would be preferable.

The language from which a loanword has been borrowed is called the donor language and the language into which it has been borrowed is the recipient language. Alternative terms that could be found in the literature are *source language* / *borrrwing language* and *model language/replica language*. The word that served as a model for the loanword is known as source word.

An illustrative case can be found in Algeria: the Fr term 'pompe' found its way into AA as a necessity to describe a mechanical or electrical pump introduced during colonization for water drawing. Due to the absence of the voiceless bilabial plosive in Ar, [p] was naturally replaced by its voiced counterpart [b], resulting in the pronunciation [bumba]⁶. However, to avoid confusion with the Fr word 'bombe,'

⁶ The final vowel [-a] in [bumba] reveals a morphological adaptation of the loanword, as it represents the feminine suffix in the AR pausal form in nouns.

which sounded similar, it eventually evolved into [pumpa]. This linguistic interference led to Algerian Ar adopting the /p/ phoneme. Numerous other loanwords, termed 'cultural borrowings' by Myers-Scotton (1993b), entered the Algerian speech community out of necessity for concepts lacking established equivalents in Ar. For instance, the FR term 'tracteur' (tractor) was phonologically adapted as [trektu:r] upon integration into the language. Despite efforts of Arabization post-independence, these loanwords persist, with attempts to propose Ar equivalents like 'جرار' for 'tracteur' and 'مضخة' for 'pompe'. These are essentially loan translations, providing literal renderings of cultural borrowings adapted into Ar patterns. Similarly, many lexical borrowings related to Islamic culture have recently entered European languages, such as 'hijab,' although they may lack precise equivalents, like 'veil' in English or 'voile' in Fr, failing to fully capture the concept in Islam. Prestige also motivates borrowing, with receiving languages often embracing words from higher-status languages, be it the colonizer's language, such as FR in colonial Algeria, or globally recognized languages like English today. Such integration is not always imperative, evident in shared terms like 'week-end' used across various languages. These examples, as Collinge (2006:528) suggests, highlight that lexical borrowing represents the most common form of interlingual interference. However, this process extends beyond mere word acquisition, often leading to complex language contact phenomenon such as bilingualism, CS, and significant contact-induced changes and language shifts within communities over time.

1.4.7 Code switching Vs code mixing

Considerable confusion surround phenomenon resulting from the alternation of linguistic elements across two or more languages. This confusion exists not only among language students but also within research circles.

While CS and code mixing are frequently used interchangeably, some bilingualism researchers advocate for distinguishing between them. Code mixing, for instance, has been identified as intrasentential CS, where speakers incorporate small linguistic elements, words, or brief expressions within sentences, whereas true

codeswitching involves switches occurring between sentences or, at the very least, phrase boundaries (Poplack, 1980). One notable distinction lies in perceiving codeswitching as connected to sociolinguistic factors and the bilingual speaker's linguistic performance, while code mixing is described in terms of formal aspects of language structure, such as phonological, grammatical, and lexical competence (Muysken, 2000:1). Grosjean (2008, 2018) suggests that understanding these various outcomes or "categories" (borrowing, codeswitching, code mixing) is enhanced by considering "the bilingual's language modes," viewing bilingual speakers as shifting along a continuum of language practices. This involves deactivating one language when interacting with monolinguals and fully activating the languages used within the bilingual community when conversing with other bilinguals. This dynamic is evident in the Algerian context, where speakers adjust their language use based on their awareness or assumptions about their interlocutor's linguistic repertoire. For instance, a native speaker of Tizi-Ouzou (Kabylia) is unlikely to use Berber when communicating with or in the presence of non-Berber speakers.

1.4.8 Code Switching Vs Borrowing

The differentiation between CS and borrowing remains a debated topic. Poplack (1980) and later Sankoff and Poplack (1981) emphasize morphosyntactic adaptation as a key principle for distinguishing between the two phenomenon. In his exploration of language contact phenomenon, Heath (1989: 23) defines borrowing as "...the adaptation of a lexical item P_y from L_y into L_x , becoming P_x (that is, a regular lexical item in L_x satisfying phonological, canonical-shape, and morphological rules for this language)." However, Myers-Scotton (1993b) challenges the criterion of morpho-syntactic adaptation for distinguishing lexical loan from codeswitching, arguing that both phenomenon exist along a continuum where codeswitching may evolve into borrowing over time with repeated use. Nevertheless, Myers-Scotton (1993b: 169) delineates two forms of borrowing: cultural borrowings and core borrowings. Cultural borrowings represent objects or concepts new to the matrix language culture, while core borrowings consist of items for which the matrix language always has equivalents.

1.5 Language Variation

Variation is evident in all languages, it is 'the rule rather than the exception' (Jorgensen *et al.*, 1995: 153). Sapir (1921: 147) states that 'everyone knows that language is variable'. The study of language variation examines how language varies in response to various contextual elements like education, social-class, geography, age, gender, etc. The same speaker may employ various language varieties for various purposes and depending on the situation in which they find themselves. Furthermore, language enables us to determine a person's background as well as the organizations and communities to which they belong.

According to Hudson (1996: 22), a linguistic variation is 'a set of linguistic items with similar social distribution', i.e. a collection of language elements that are shared and utilized by a group of people or by members of a speech community. However, it should be emphasized that when using this term, "linguistic variety," it is not necessary to compare it to a fully formed language with a developed vocabulary and grammar. For instance, slang and jargon can also be referred to as linguistic varieties, despite their lack of development compared to larger linguistic varieties like AR or English, which have more developed grammar and a larger body of vocabulary.

People interact in ordinary discussions using local regional variations like dialects and accents, but in professional situations, specific variants like jargon and register are used.

1.5.1 Regional Variety

The fact that natural languages are dynamic and differ over time, geographically, and within social groups is a fundamental characteristic of them. "A variety of language which differs grammatically, phonologically, and lexically from other varieties, and which is associated with a particular area [...]" is one definition of a "regional variety." (Trudgill, 1992: 23) Put otherwise, as a person travels from one place to another, they will note that the vocabulary, syntax, and pronunciation

of the language vary. According to Trudgill, a language's regional variation is a sub-variety of its broader variant, which is made up of a number of social and regional varieties. Our study does not address the implications that these linguistic variations have, either positively or negatively.

1.5.2 Register

In general, language plays a crucial role in every society member's daily existence. These members need to adapt their language to the situation because they come from a variety of backgrounds, have different hobbies, and engage in different activities. For instance, formal lectures on science, physics, or mathematics are not delivered in the same way as casual conversations. Lewandowski (2010: 66) claims that "the restricted language, first described by J. R. Firth as a variety'serving a circumscribed field of experience or action', 'can be said to have its own grammar and dictionary' (Firth 1957: 87-98)', was the precursor to the idea of register.

The term 'Register' means that the same speaker may use various language varieties for various purposes in different contexts. As an instance, a doctor may speak in at least two dialects: one for usage at home with family members or as shop-keeper, and another for use in professional settings or when conversing with other doctors.

According to Halliday, three factors may impact register. The first factor is tenor, which refers to register as a formality signal, with variations depending on the social relationships between the actors in the communication act. The second factor is mode, describing the communication medium, whether expressed orally or in writing. The third factor is the field, where variation is influenced by speaker activity and the subject matter, necessitating a specific vocabulary often referred to as "jargon."

1.5.3 Jargon

Certain phrases, words, and idioms have particular meanings. Known as "jargon," they are defined in reference to a specific topic, profession, or area of

interest, such as computing, medical, sports, etc. The sociolinguistic jargon includes terms like "CS," "bilingualism," "sociolect," and "vernacular," among others. Jargon is defined by Hornby (1995: 637) as the particular technical vocabulary used in restricted contexts by particular organizations. This indicates that people outside of the group do not utilize or share it. Jargon is made up of obscure and confusing technical terms that are difficult for the average person to grasp. As a result, it can also be a barrier to communicating with the general public. However, Van Herk (2012: 110) notes that 'Jargon makes communication more effective for in-group members', suggesting that its use may not be meant to alienate non-group members. In this way, it facilitates quick and effortless self-expression among users without requiring a lot of time for interpretation and clarification. As an example, a clinician might inform a parent straight out that their child has "pertussis" (called "la coqueluche" in Fr), without to add or clarify that *Bordetella pertussis* is the highly contagious bacterial disease causing it.

1.6 Doctors and Patients Communication

In the complex landscape of healthcare, the interaction between doctors and patients stands as a cornerstone of effective treatment and holistic well-being. This essential communication channel not only facilitates the exchange of medical information but also fosters trust, understanding, and effective collaboration.

1.6.1 The Linguistic Approach to DPI

Throughout the twentieth century, the professional use of language, particularly in medicine, garnered considerable interest from linguists and researchers across various disciplines including social sciences, communication, medical education, psychology, and anthropology. The primary focus was on examining the gap between the technical and everyday usage of language. The researchers investigated patients' capacity to understand the specialized terminology used by doctors, highlighting how linguistic gaps could impact DPI and medical encounters. Their shared perspective is that dialogue is the cornerstone of medical

consultation. Therefore, comprehending the dynamics of dialogue in this context lead to significant contribution in unfolding and assessing medical consultations.

This research direction focuses on the transfer of information through conversation, viewing talk as a channel for transmitting medical knowledge and persuading patients to take appropriate actions. Key concerns include the effectiveness of delivering negative prognosis, patient compliance with treatment instructions, and the impact of detailed explanations on patients' adherence to medical decisions.

These investigations primarily rely on correlational methods, using surveys to examine the attitudes of both doctors and patients regarding their perceptions. For instance, in an analysis involving a sample of 336 encounters, Waitzkin evaluates various correlations between information giving and the characteristics of doctors, patients, and the medical environment of the interaction. Findings indicate that doctors tend to spend minimal time informing their patients, overestimating the duration of consultations, and underestimating patients' desire for information. Waitzkin establishes a link between inadequate information transfer and satisfaction with medical care, adherence to doctors' advice, and even physiological responses to surgery. Waitzkin (1985: 81) argues that:

Information transmittal was associated with (1) doctors' income, social class background, political ideology, and perceptions of patients' informative needs; (2) patients' age, sex, social class, education, and prognosis; and (3) situational characteristics such as the length of acquaintance, numbers of patients seen per day, and the types of patients in the doctors' practices.

Waitzkin (1985 :81)

Similarly, Hagstrom (2004) claims that although patients desire information, they often refrain from asking questions during medical encounters due to a perception that it may irritate doctors. Conversely, physicians argue that what patients perceive as disinterest is not real and attribute it to the linguistic and competence gap between doctors and patients. Within the same context, Morgan

(2003) asserts that doctors tend to overestimate the amount of information they convey to patients. Furthermore, medical terminology poses a barrier to effective communication, as it is both unavoidable when providing information and challenging for patients to comprehend. Moreover, it can be misleading if used or interpreted incorrectly by patients (Belaskri, 2017).

1.6.2 Code Switching in DPI

Unlike most patients who lack medical training, doctors understand both the role of a physician and that of a patient. This dual understanding allows them to easily switch between "doctor talk" and "patient talk" (Simons, 1998:96), adjusting their communication style and language - whether using medical jargon or everyday terms - based on the people involved in the medical interaction. Similarly, Ong et al. (1995:27) compared doctors to bilingual individuals, noting that they are proficient not only in their EL but also in ML. Essentially, doctors are skilled at moving between these linguistic realms as needed "Doctors are bilingual: they speak their native everyday (EL) language, but they are also fluent in medical language (ML)". In contrast, most patients are monolingual, "patients are typically unfamiliar with ML. and are only conversant in their everyday language." i.e. in their EL language, lacking familiarity with medical terminology (ML), They rely on using EL words well. Within the dynamic of doctor-patient communication, CS occurs when doctors switch between ML and EL, or when patients know some medical words. They use medical words to communicate better with doctors. Bourhis et al. (1989) view says physicians using medical words can be hard for patients. Everyday words help patients understand better.

Mishler (1984: 14) introduces another dimension, suggesting a division between 'the voice of medicine' and 'the voice of life world.' These represent, respectively, the technical language used in clinical settings and the natural use of EL. Both doctors and patients find it necessary to employ 'the voice of medicine' when discussing medical history and exchanging healthcare information, but they transition to 'the voice of life world' when expressing personal thoughts and meanings.

1.6.3 Communication Barriers

Communication is a fundamental aspect of human interaction, facilitating the exchange of ideas, feelings and information. Zastrow (2001: 130) states that ‘a breakdown in the communication process may occur if the intended messages was not encoded or decoded properly’. In many cases, effective communication is often hindered by certain obstacles that interfere with the transmission and understanding of the message. These barriers may be physical⁷, psychological, social, and linguistic barriers. Also, Adedina (2006: 89) defines communication barriers as the hindrances that ‘affect the flow of information in communication process’.

1.6.3.1 Linguistic Barriers

Various linguistic barriers or issues with language patterns frequently hinder communication between interlocutors, with three primary factors standing out. Firstly, a lack of a common language creates a barrier when the sender and receiver speak different dialects or languages without a shared linguistic code. Secondly, semantic barriers arise when individuals interpret the same word or expression differently, a phenomenon Rodriques (2000: 46) refers to as ‘semantic noise,’ noting that ‘a word can have different meanings to different people at different occasions’ (ibid: 100), thus leading to communication failure. Lastly, poor vocabulary, which refers to a limited or insufficient range of words and expressions used by individuals that the addressee does not understand, is a major obstacle to effective communication.

1.6.3.2 Physical Barriers

Different physical barriers can affect communication. In doctor-patient communication, time constraints mainly disrupt the information flow, creating a barrier to effective communication. A physician, like anyone else, may sometimes deliver brief and unclear messages without much explanation

⁷ In information theory the term ‘noise’ is used.

because of time constraints. Additionally, various sociological, psychological, and geographical factors such as gender, age, education, region, attitudes, and beliefs can also impact how we communicate, serving as significant barriers to effective communication.

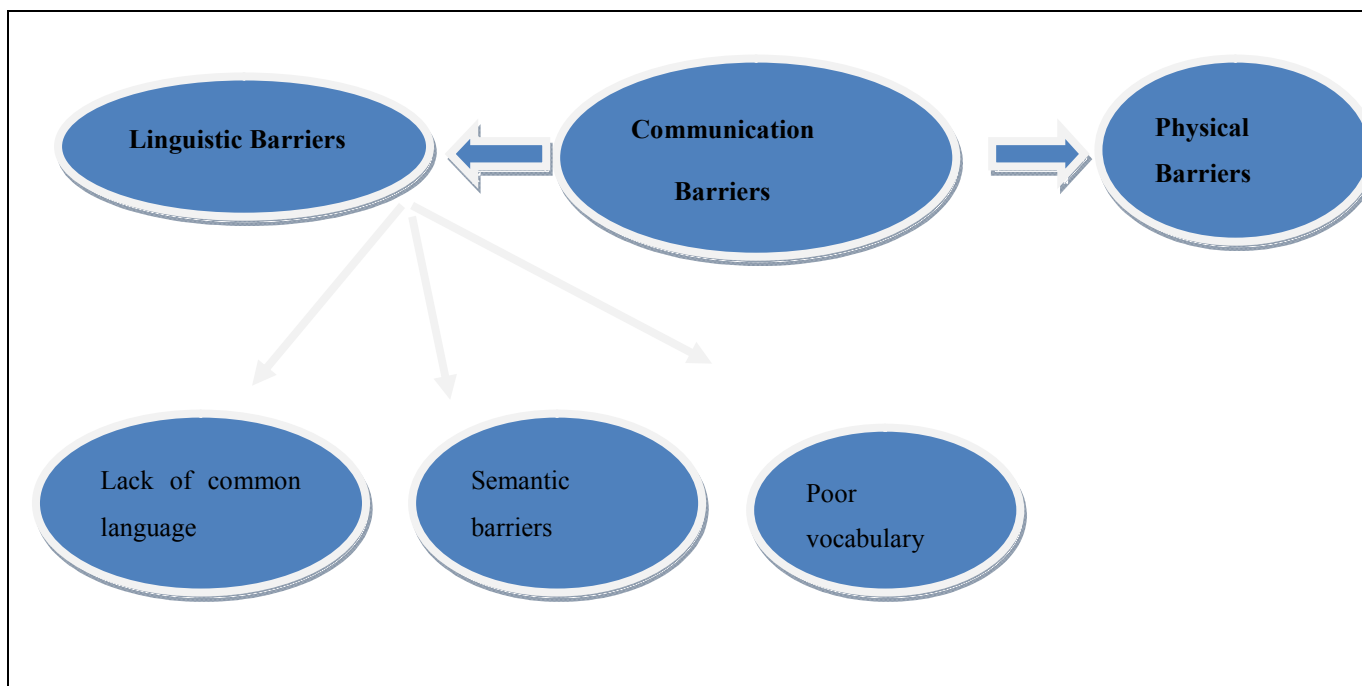


Figure 1.4. Communication Barriers

1.6.4 Barriers to healthcare communication in DPI

Language and various communication obstacles pose significant challenges for both physicians and patients during medical interactions, ultimately impacting the quality of healthcare provided. One notable example of countries vulnerable to communication difficulties is those experiencing rapid growth in immigrant populations, leading to a significant rise in linguistic and cultural diversity. As indicated by the 2001 Supplementary Survey conducted by the US Census Bureau, 12.5% of the US population are foreign born, and reports indicate that 55% of them speak English either 'not well' or 'not at all'. Limited English Proficiency (LEP) presents language barriers for both foreign-born individuals and monolingual American physicians during medical consultations. In P.M. Schyve's (2007) analysis, LEP is categorized as part of what they refer to as the 'triple treat'

to effective healthcare communication in the US, alongside low health literacy and cultural barriers.

1.6.4.1 Language

Issue regarding language as a barrier to communication in healthcare involves individuals with LEP, differences in linguistic varieties and languages, communication disorders and conversational differences. The National Health Strategy Issues Paper(1993 : 19) states :

The lack of a common language between patient and Health professional can have serious implications for their communication, for diagnostic accuracy and overall quality of care.

Within the identical paper, it is clarified that language differences lead to dissatisfaction and frustration among patients because it prevents them from describing the symptoms of their illness and asking for clarification. Woloshin and his associates state that ‘Without effective use of language, the physician-patient relationship is seriously impaired’ [(Woloshin *et al.*, 1995: 727) in Sharon M.Lee,2003: 05)].

1.6.4.2 Health Literacy

Rotzan and Parker (2000) were the first who developed the concept of ‘health literacy’ then used by the institute of Medicine (IOM) within the 2004 report ‘Health Literacy :A Prescription to End Confusion’ as ‘the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions’ (IOM, 2004 : 32), according to this definition, many individuals may be regarded as functionally illiterate, because, language of medicine is very technical and might pose challenges for people who are not familiar with the subject. Inability of the patients to comprehend the physicians and to effectively communicate their needs may make them overwhelmed. So, they leave the physician’s office without asking for clarification.

1.6.4.3 Culture

Culture significantly shapes how individuals perceive and respond to illness and health. Terry L. Cross *et al* (1989 :iv) describe culture as ‘the integrated pattern of human behaviour that includes thoughts, communication, actions, costumes, beliefs, values and institutions of a racial, ethnic, religious, or social group’. It is evident from this definition that language and culture are closely intertwined. Also, Leininger and McFarland(2002 : 47) indicates that culture refers to ‘the learned, shared and transmitted knowledge of values, beliefs, and life ways of a particular group that are generally transmitted intergenerationally and influence thinking , decisions, and action in patterned or in certain ways ’. It is clear from these two definitions that culture is frequently linked with culture and influences people’s behaviour and practices including communication, choice making, and decision taking.

Predominantly, cultural preferences result in misinterpretation of medical messages and prescriptions. However, there are people who are born in the same place and share the same language but do not share the same culture. There are some individuals who believe that some illnesses are caused by ghosts and spirits and use strange terms to refer to them.

1.7 The Significance of Patients’ Education

Communication can be affected by hurdles caused by differences in social class and level of education (Scheppers et al., 2006). Without a doubt, education has a significant impact on the standard of medical care. Patients with low literacy levels are unable to accurately and purposefully describe the symptoms of their illness in a natural way (Mustajoki et al., 2015). Clinicians may also need to examine less educated patients more frequently since they may have mental and intellectual barriers to communication.

Alkatheri and Albekairy (2013) evaluated the educational backgrounds of a sample of ninety patients who were visiting King Abdul Aziz Medical City, a tertiary care facility in Saudi Arabia, as well as the impact of prior counseling and education on medicine knowledge. The study showed that better educated people

will comprehend their physicians and have good knowledge of the medicines they are prescribed. It was also shown that patients' age and education levels were highly correlated. The authors proposed designing a patient-counseling program to the educational background of the patients in order to increase the patients' understanding of their medications, especially the negative effects. These programs might make it easier to diagnose medical conditions, which would improve patient outcomes.

Conversely, social status could lead to differences in health communication. In a study conducted by Verlinde et al., social class was determined by education (2012). Patients from higher socioeconomic classes were generally more engaged in the communication process and got more information overall than patients from lower socioeconomic classes, according to their evaluation of the literature.

1.8 Conclusion

To conclude, this chapter has provided a comprehensive overview of the Algerian linguistic profile and key writings about language contact, CS, and doctor-patient interactions. Exploring Algeria's sociolinguistic landscape revealed intricate interplay among languages like AA, CA, Berber, and Fr, each with its distinct status and importance. Grasping this is vital for examining language use in contexts like healthcare. The literature review covered key concepts like diglossia, bilingualism, CS, code-mixing, and borrowing. Defining and distinguishing them laid the groundwork for nuanced analysis of doctor-patient language behaviours. For example, we clearly differentiated CS from code-mixing and borrowing. Moreover, the discussion on doctor-patient communication highlighted the importance of linguistic approaches in understanding the dynamics of healthcare interactions. Recognizing the prevalence of CS in doctor-patient communication, the researcher explored its functions and implications for effective healthcare delivery. Additionally, the identification of communication barriers, both linguistic and physical, underscored the need for tailored strategies to address language-related challenges in healthcare contexts. Furthermore, the elucidation of linguistic barriers,

including language proficiency, health literacy, and cultural factors, emphasized the intricate nature of doc-patient communication and the role of language in shaping healthcare experiences. Finally, the examination of the reasons and the functions of CS provided insights into its role as a communicative strategy for negotiating social identities, expressing solidarity, or conveying specialized knowledge in healthcare interactions. Overall, Chapter One sets the stage for a deeper exploration of CS among doctors and patients in the Algerian rural context, laying the groundwork for subsequent chapters to delve into empirical investigations and practical implications for enhancing healthcare communication and promoting health equity in underserved communities.

Chapter Two

Methodology

&

Data Analysis and Interpretation

Section One Methodology

2.1 Introduction

Due to Algeria's complex linguistic situation, there are at least four varieties that compete with one another in various fields, and the fact that it has affected Algerians' repertoire, the study of language contact phenomenon has drawn the attention of many researchers in Algeria in general and Tlemcen in particular. In our study, the researcher emphasizes CS in the context of the DPI topic of study.

This section presents the methodological approach of the study. Its main goal is to provide an overview of the methodology used in this investigation. It attempts to examine and analyse the use of the phenomenon of CS in DPI, and to test the hypotheses through mixed research to increase validity and accuracy, then, to discuss the obtained results.

This Section is concerned with the methodology used in data collection and consists of five subtitles including: the objective of the research, the research method used for collecting data, describing the context, the participants involved and the instrumentation used. This section's summary highlights the major points of the methodology.

2.2 Research Objective

This section aims, first, at giving a description of the target population. Second, to clarify the research tools used in collecting data. Third, to explain the way in which the researcher proceeds to analyse these data in order to search for the reasons that create problems of communication in DPI during the medical consultation in the Algerian rural healthcare setting, and to depict the various reasons behind the use of CS in DPI, in addition to the most important factors that affect the speech during the medical consultation.

2.3 Describing the Context

This study is conducted in ‘Tlemcen’, a town situated in the north-west of Algeria. Zooming in on dialect contact within the Algerian context, this study focuses on a village among the many in Algeria that are situated near major cities. The valley of ‘Beni-Snous’ (hereafter BS), a small ex-Berberophone region, located in the Algero-Moroccan border about forty-five Kilometers southwest Tlemcen.

Thirteen settlements situated in the valley of BS, among these sub-communities, Khemis and El-Fahs were chosen as field work which represents the centre of BS and comprises numerous administrative, socioeconomic, and cultural institutions. These areas are where all BS' residents gather to go about their daily life practices. This study is conducted in the public hospital of BS and the private offices in the same valley.

2.4 Research Design

Any scientific investigation needs to stick to a specific methodology paradigm in order to be more reliable and objective. It should be either quantitative, qualitative approach or mixed method approach.

In this study, the researcher has chosen the mixed approach to collect data for her research. It incorporates aspects of both qualitative research which relies on the collection of data by structured methods like structured observation, questionnaires and interviews in which close-ended questions are used, And quantitative research which uses “research questions and semi structured methods such as open-ended and in-depth interviews, ethnographic field notes, focus groups, open ended questions on surveys, and participant observation.” (Kattel, 2010, P. 25). Thus, it can provide a more comprehensive picture about the investigation.

The mixed method approach has three broad advantages. First, it enables the researcher to examine and validate data. Second, it elaborates and develops a thorough analysis that produces more valuable details. Third, it increases the

researcher's awareness and offers a better understanding of how to handle conflicts and paradoxes between the two data sources.

2.5 Sample Population

Sampling is the procedure by which a researcher chooses informants from a sizeable population of interest. In order to generalize the sample's study results to the total community, the sample population needs to be sufficiently representative.

In this research, the sample population was selected using 'non-random' sampling, it consists of 14 doctors from the public hospital of BS and from outside of the hospital, i.e. private offices. A group of 50 Patients from both genders, male and female and from different ages.

2.6 Research Instruments

Research instrument is a tool used to collect, measure and analyse data of the research. The current study's selection of research tools is closely related with its objective, thus, the researcher opted for two questionnaires for doctors and Patients and observation of the DPI during the medical consultation.

2.6.1 Questionnaire

Two questionnaires one for doctors and one for patients were distributed to Patients and doctors in the public and private service sectors and were used as the main source of data collection for this study.

Each survey is structured with two sections; Part one asked questions regarding the gender, social and educational background of informants, whereas the second part included questions that provided broad information about language use and CS in medical settings.

2.6.1.1 Questionnaire for Patients

The Patients' questionnaire (See appendix A) was written in English then translated to MSA⁸. It was distributed to Patients in a 'Non-random' way. The researcher used a researcher-completed questionnaire in which the questions were asked orally and the answers were written by the researcher. This methodology was used because not all the Patients are educated (some of them were not able to read, write, or even understand MSA).

Fifty questionnaires were distributed taking into consideration both males and females belonging to different educational backgrounds. Its major purpose is to see the problems of communication that exist between doctors and Patients, and their opinion regarding the use of Ar / Fr CS during the medical consultation. Moreover, it included questions which consist of close-ended, multiple choice and open-ended questions in order to reach representativeness which generally leads to generalization.

2.6.1.2 Questionnaire for Doctors

The second questionnaire (See appendix B) was created to elicit data from physicians at both public and private service sectors in BS valley. It was written in English then translated to MSA.

The initial strategy was to stay with the correspondents while filling the questionnaire, so that the researcher could talk further with them about communication issues, language hurdles and the use of Ar / Fr CS in DPI. Since Beni-Snous is a small village, there is a limited number of Patient, about 14 doctors, thus, 14 questionnaires were distributed.

2.6.2 Observation

The current study uses an ethnographic methodology. It mixes participant observation with observation of language use and the use of Ar/Fr CS in healthcare environments. It helps to collect qualitative data. The researcher examined

⁸ The reason behind using MSA because it is a variety that could be used in a written form and it is understood by most Patients.

interactions and language use in the consultation rooms and hospital hallways using recording and notes taking. However, the limited time made it hard to monitor everything. Furthermore, there was a lot of people and noise which made it hard to get clear data.

2.6.3 Recording and Notes Taking

Note-taking and recordings are research tools used during the observation of the DPI during the medical consultation. They help to gather qualitative data. It should include the speech of people and other necessary details trying to make the investigation complete and reliable. Notes should be written down (see appendix c) or recorded during data collection activity. In this case, the researcher is responsible for taking detailed notes about how doctors and patients spoke in the medical conversations and how they switch from one code to the other. After that, the researcher should expand these notes into a descriptive text.

2.7 Conclusion

In this section, the researcher described the methodology used in his study on CS in the context of DPI in the Algerian rural healthcare setting. By adopting a mixed research approach, blending qualitative and quantitative methods, the researcher aims to give a comprehensive analysis of CS phenomenon in DPI. The sample population was selected through non-random sampling, includes both doctors and patients from public hospitals and private offices. The research instruments, including questionnaires and observation, have been developed to gather relevant data and enable a comprehensive analysis. In summary, highlights the methodological rigor that guided our research, opening the door to a thorough investigation of CS phenomenon in rural healthcare settings in Algeria and language barriers in the same context.

Section Two

Data Analysis & Interpretation

2.8 Introduction

The purpose of this section is to present, analyse and interpret the data collected previously by using research instruments that have been described in the above section. The results will be analysed statically to quantitative data in addition to qualitative data which will be analysed and interpreted to approve the numerical data and to solve the research issues.

2.9 Analysis and interpretation of patients' questionnaire

➤ Section A (The social background information)

The first part of the questionnaire is concerned with the basic information of the social background of patients including: gender, age, educational level and occupation.

a. Gender

Out of 50 informants, 27 were females representing 54% of the sample population, and 23 males that made up 46%.

Table 2.1. Patients' Gender

Genders	Number of patients		Total %
	AF	RF	
Male	23		46%
Female	27		54%
Total	50		100%

Even during the medical consultations, the researcher noticed that the number of female in the public and private services exceeded that of males. Yet, the doctor said that both genders are equal in having health problems except that women complained more than men about their health.

b. Age

The age of the informant is significant in a sociolinguistic research. The results of the age have been divided into five age categories as it is presented in the figure below:

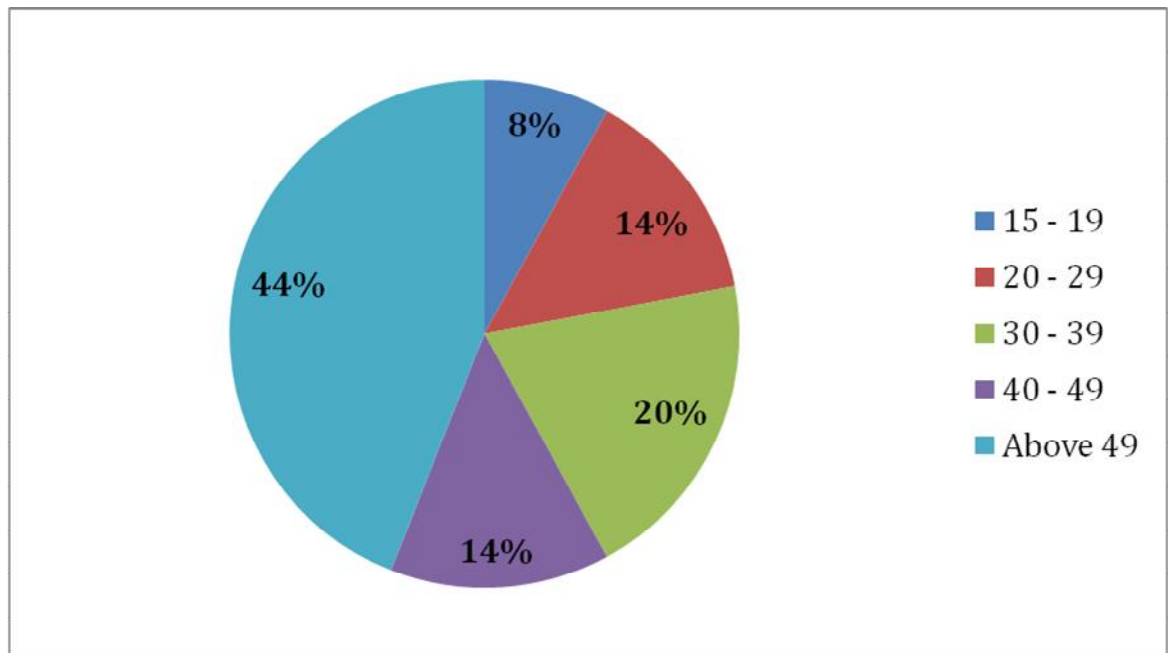


Figure 2.1. patients' ages

c. Educational Level

The educational level is an important factor to determine the social status of the informants. The results are presented in the table below:

Table 2.2. Educational Level of Patients

Level of Education	Number of Informants
No education	13
Primary school	3
Middle school	3
Secondary school	11
University	20
Total	50

The results show that 13 participants were uneducated , i.e. 26% from the whole sample population, 3 informants with a primary level of education which represents 6% and they were over 50 years old and they received a minimum education during the colonial period. The same percentages were found for informants who attained middle school. Finally, 20 informants about 40% of the whole sample population had either university degree or were university students, most of them were under 49 years old.

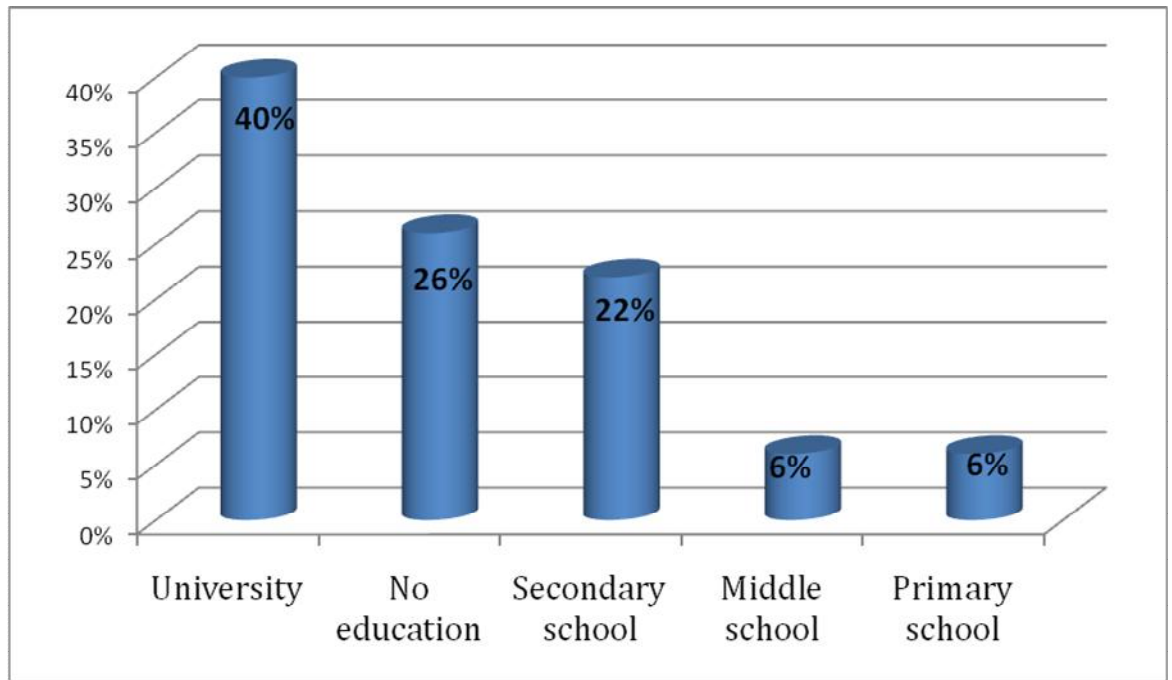


Figure 2.2. Educational Level of Patients

Undoubtedly, the ability of using different language varieties is correlated with the educational level, thus, an individual with higher educational level typically requires a high degree of proficiency in MSA and FR. Yet, this correlation is not indicative that all educated Algerians are proficient in both MSA and FR. Also, the participants' level of education appears as a significant factor in determining the ability of switching between FR and MSA/AA.

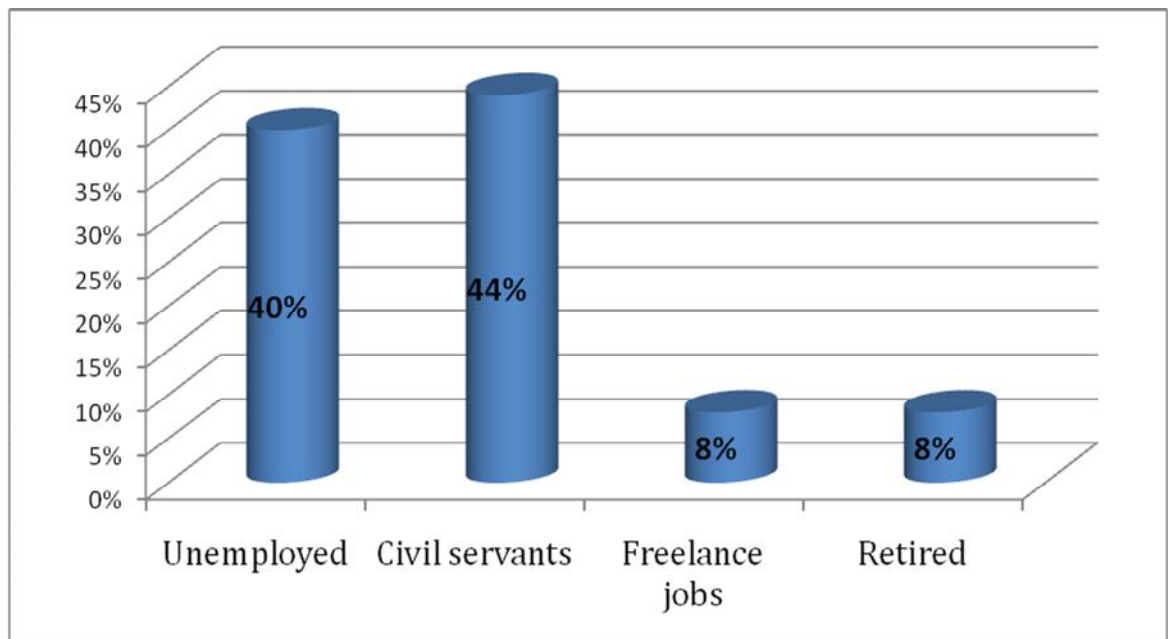
d. Occupation

The occupation of the individual reflects his/her socio-economic status. The results of the investigation are presented in the following table:

Table 2.3. Patients' Occupation

Patients' occupation	Number of patients
Unemployed	20
Civil servants	22
Freelance jobs	04
Retired	04
Total	50

The results indicate that the majority of the informants fell in the two first cases (unemployed and civil servants). Unemployed participants recorded the highest rate 40% out of which 25% were still university students, 20% did not achieve university level, 5% with university degree and the remaining 50% are uneducated. The second high rate was 44% and it was noted by civil servants. Finally, the two next categories, i.e. informants who work on their own and retired represent 8% for each one. The results are illustrated in the figure below:

**Figure 2.3. Patients' Occupation**

Section B: Linguistic Background of Patients

This section aimed at eliciting both qualitative and quantitative data by using close-ended, multiple choice and open-ended questions. It gives an overview of the linguistic background of the patients, in addition to general information of language use in medical settings.

Q1) How often do you visit your doctor in your rural area? (Regularly/Occasionally/ Rarely)

The aim of this question is to find out how frequently people who live in rural areas visit their doctor. The following table illustrates the findings:

Table 2.4. Frequency of doctor visits among rural residents

Frequency	Patients' Number	Total %
Regularly	12	24%
Occasionally	21	42%
Rarely	17	34%
Total	50	100%

The results note that the majority of respondents, about 42% fell into the category of ‘Occasionally’. This indicates that they visit their doctor from time to time. This could imply that most people seek medical attention when they have specific health issues.

On the other hand, 34% said rarely, this group represents more than the third of the informants. This could be due to various factors such as most people living in rural areas reported that in their rural areas there are only generalists and they prefer visiting specialists of their illness in the town.

Finally, approximately a quarter of the sample population visit their doctor on a regular basis, i.e. around 24% out of the whole population. Most of them have diabetes, cholesterol, blood pressure and arthritis.

Q2) What language do you use for daily communication?

(Arabic/French/Berber)

The purpose of this question is to understand the primary language used by the informants in their everyday interactions. The outcomes are shown in the table that follows:

Table 2.5. Language used for daily communication among respondents

Languages	Number of informants
Arabic	44
French	4
Berber	2
Total	50

Findings reveal that the majority (88%) of the sample population stated that they use Ar (AA) for their daily communication as it is their mother tongue, the primary language of the community and the dominant language in various aspects of daily life.

Fewer people around 8% stated that they regularly communicate in Fr. This implies that there may be a Francophone minority within the community. Whereas only 4% out of the sample population which represents the minority indicated Berber as their language of daily communication, mostly they use it at home and with other Berbers, they have no difficulty in speaking AA. The following figure illustrates the percentages of the previous finding:

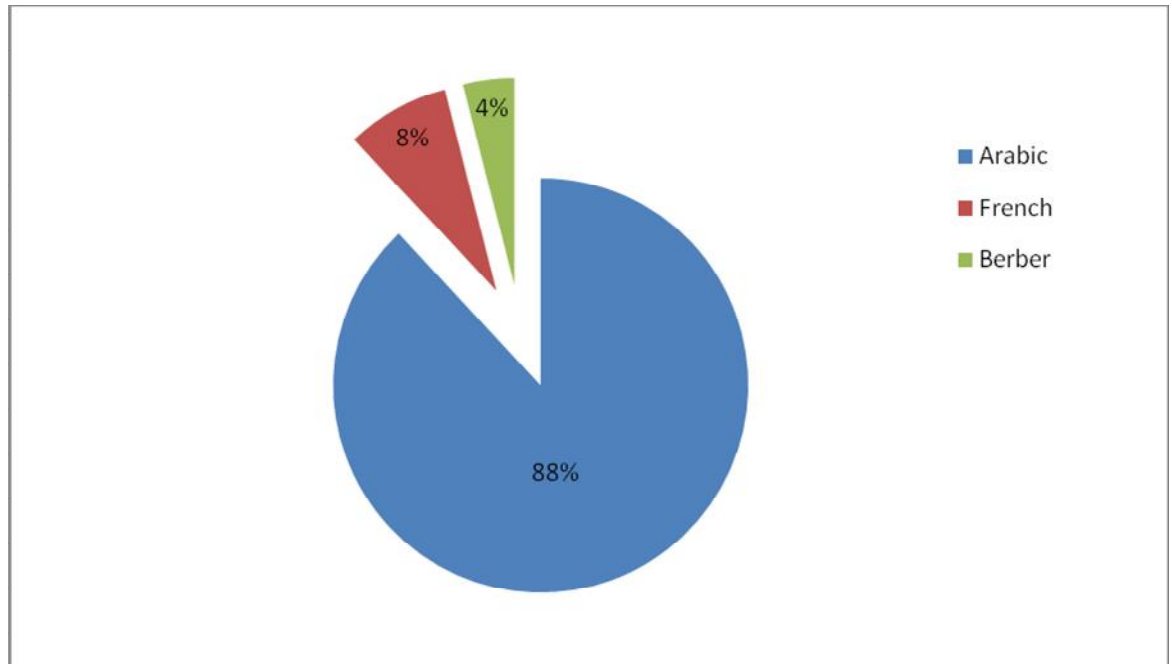


Figure 2.4. Language used for daily communication among respondents

Q3) Have you ever encountered difficulties due to language differences when discussing your medical condition?(yes/no)

The purpose of this question is to understand whether patients have faced challenges as a result of the language differences during DPI. The majority of the sample population 31 patients (62%) reported that they faced difficulties due to language differences when discussing their medical conditions. This indicates that language barriers are common in health communication in the rural areas, 32. 25% had an average level of education (between primary, middle and secondary school), 22.58% are educated (university level) and 45.16% are uneducated.

The difficulties stated by patients are:

- The use of difficult medical jargons;
- The over use of FR language which is a strange language to them.
- Limited health literacy.

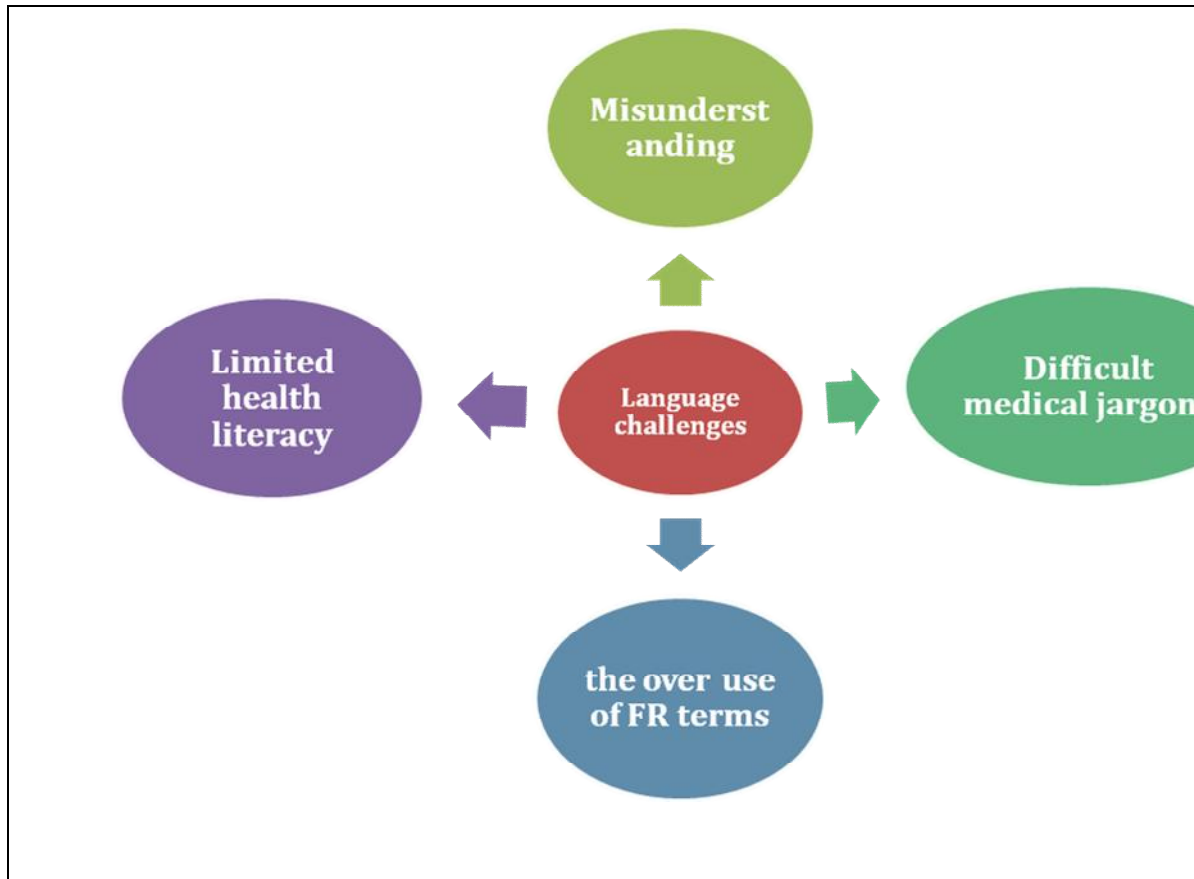


Figure 2.5. Language Challenges

On the other hand, 38% said ‘No’, i.e. they have not encountered such difficulties, 68.42% had university level, 26.31% had baccalaureate level, however, 5.26% are uneducated. This suggests that language barriers in healthcare settings may not be universal within the community.

Q4) In which language do you feel most comfortable when interacting with doctors? (Arabic/French/Berber)

This question aims to understand the preferred language for healthcare communication among patients. The results are as follow:

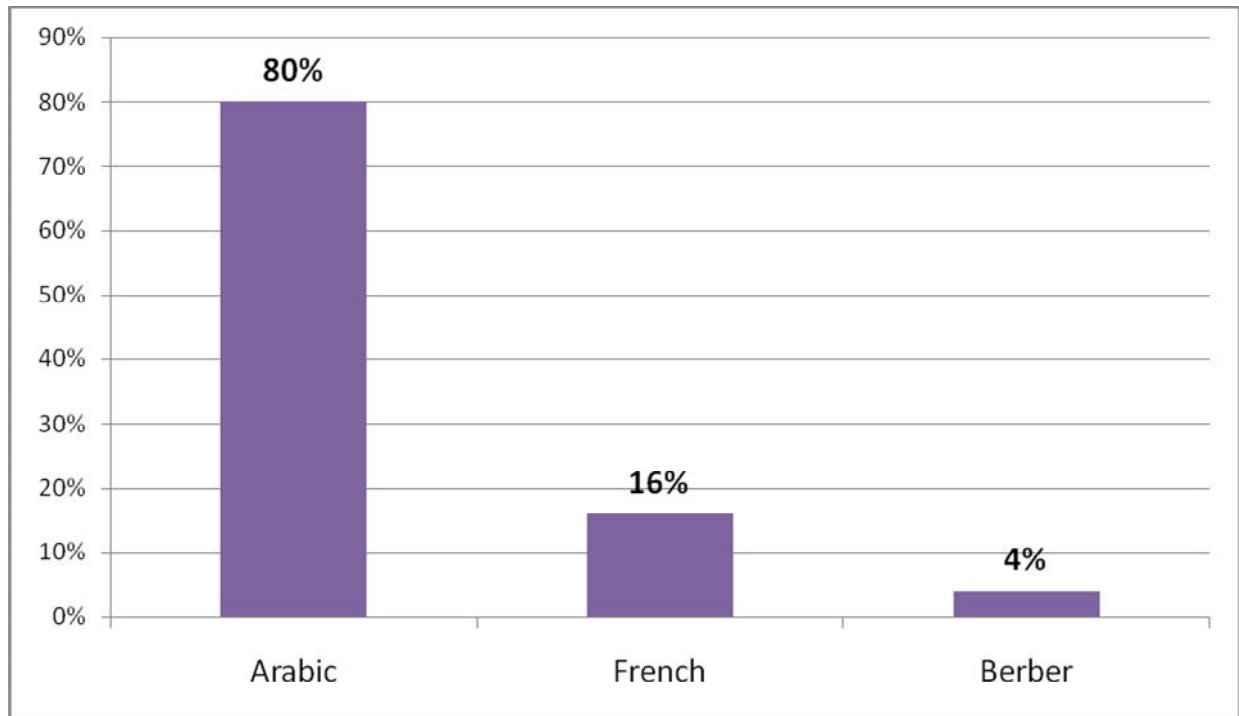


Figure 2.6. Preferred language among patients during medical consultation

As demonstrated in the previous figure, the highest rates were recorded in the category ‘Arabic’ around 80% from the whole population. 16% of the sample preferred interacting in ‘French’, however, only 4% feel comfortable when using ‘Berber’ during the medical consultation. This suggests that most of the patients prefer interacting in their mother tongue and feel comfortable while using it during DPI.

Q5) How confident do you feel in understanding medical information provided by your doctor? (Confident/Somewhat confident/ Neutral/ Not confident at all)

This question aims to assess patients’ confidence levels in understanding medical information provided by their doctor, and to have insights into patients’ health literacy and comprehension of medical information. The results are represented in the figure below:

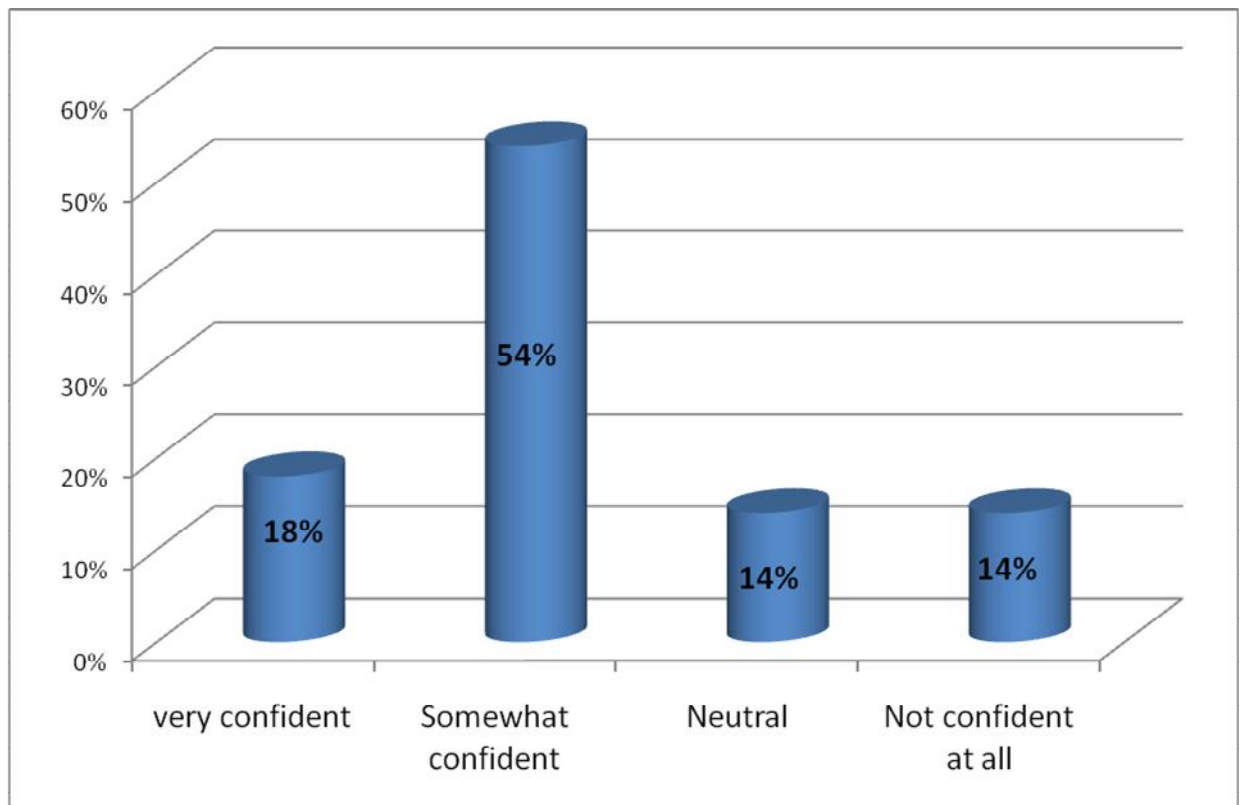


Figure 2.7. Confidence levels in understanding medical information among patients

In the first category 'confident', a minority of informants reported feeling confident in understanding the medical information provided by their doctor. All of them were educated except a female who was uneducated but she claimed that she had a high level of Fr as she learnt it during the colonial period, thus, she did not have any problems in understanding doctor while interacting in Fr.

The following category is 'Somewhat confident' which was chosen by the majority of the patients, 27 patients, i.e. around 64% from the whole population, 4 patients had between primary and middle school level, 4 patients are uneducated but they claimed that doctors used a simplified language while discussing with them, 9 had baccalaureate level and the rest of this category's informants were university graduated.

In the next category, a small percentage of respondents indicated a 'Neutral' stance, they were 7 patients, around 14% of the whole population. 3 of them were uneducated, a boy was studying at secondary school and 3 patients had university level. These individuals may neither feel particularly confident nor unconfident in their ability of understanding medical information.

Finally, all the patients who said that they do not understand doctors (patients who chose 'Not confident at all') had difficulties in discussing their medical condition due to language differences, also, they are uneducated. This category represents 7 informants, around 14% from the whole population. This suggests that the level of education is the main factor in understanding medical information.

The results suggest that the patients' level of education and the language used by doctors play an important role in DPI. Additionally, it is necessary to tackle the root causes of poor confidence such as language barriers or health literacy limitations in order to facilitate efficient communication and patient-centred care.

Q6) Do you code switch between Arabic and French during medical consultation? (yes/no)

The purpose of this question is to understand whether patients engage in Ar/Fr CS during medical consultation. 54% of the sample population said that they code switch during the consultation, however, 46% said that they do not switch between Ar and Fr when interacting with doctor.

Q7) How do you perceive the use of Arabic /French code switching during medical consultations? (Facilitates understanding/ Hinders understanding/ No impact)

This question was submitted to the sample to understand patients' perception of Ar / Fr CS during the medical consultation, in another word, to know whether it facilitates or hinders understanding or has no impact. The findings are provided in the table below:

Table 2.6. Patients' perception of Ar/Fr Code switching in medical consultations

Patient's perception of CS	Numbers of patients
Facilitates understanding	31
Hinders understanding	15
No impact	4

Results show that 31 patients, around 62% of the sample population stated that AR/FR CS facilitates understanding. The results suggest that alternating between AR and FR helps to improve communication between doctors and patients. This may reflect patients' language proficiency and cultural familiarity with CS.

On the other hand, 15 patients, around 30% of the sample population indicated that CS hinders understanding during the medical consultation as it may create confusion due to the use of medical terminology that is unfamiliar in one language but not the other.

Finally, only 4 participants (8%) reported that it had no impact on understanding medical information. This perception may indicate that patients are neutral or indifferent towards code-switching practices and do not perceive them as either facilitating or hindering understanding.

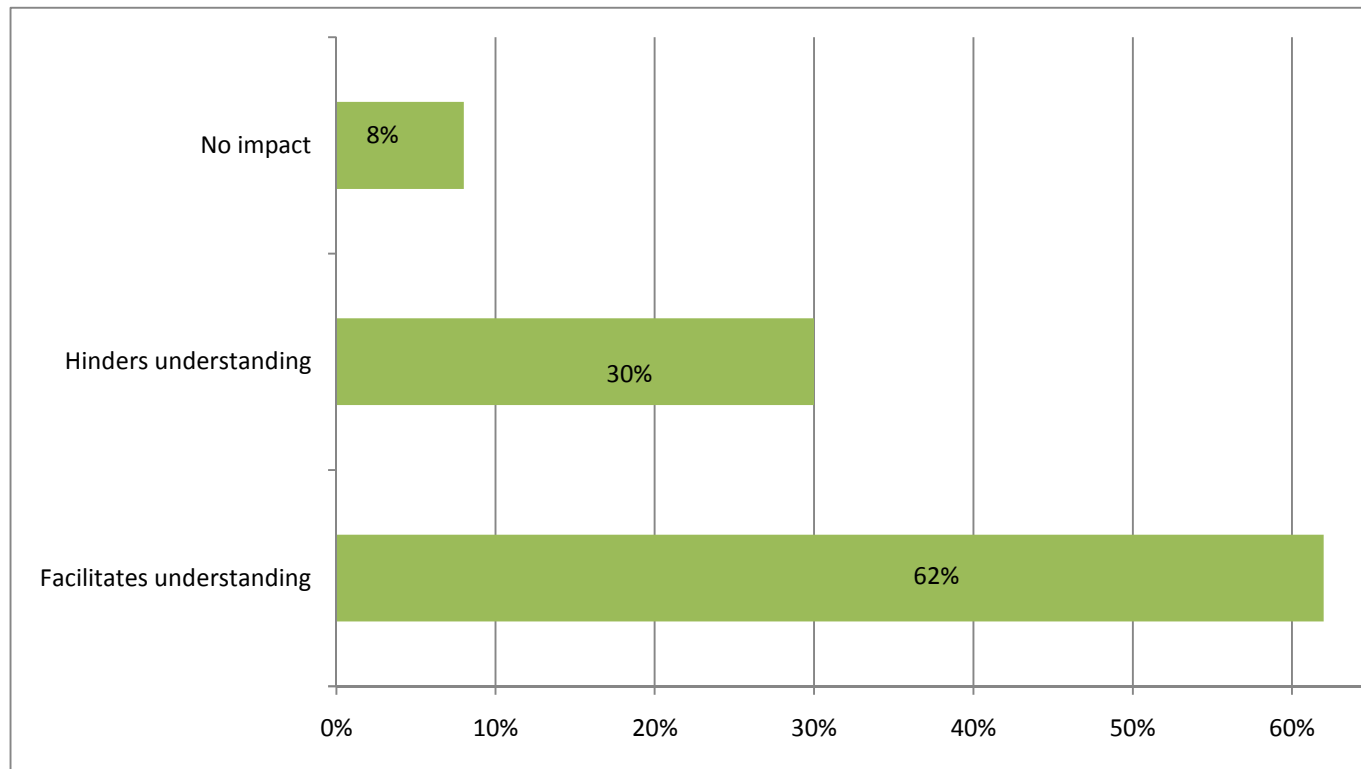


Figure 2.8. Patients' perceptions of Ar/Fr code-switching in medical consultations

Q8) Do you prefer your doctor to consistently speak in one language throughout the consultation or do you find code switching helpful?

(Consistent language use/ Code switching is helpful/ No preference)

This question was set to understand informants' preferences regarding language use during medical consultations. The results are illustrated in the following table:

Table 2.7. Patients' preferences for doctor communication

Patient's preferences		Number of patients	Total %
Consistent use	language	19	38%
Code switching is helpful		29	58%
No preference		2	4%
Total		50	100%

Results demonstrate that 19 patients which represents 38% of sample population prefer their doctor to speaking one language. This may facilitates comprehension and communication, especially for patients who may have difficulty with CS or in understanding multiple languages. The majority of informants 29 patients, about 58% out of the sample population, find CS helpful during medical consultations. This indicates that alternating between Ar and Fr is beneficial in DPI as it may facilitate the expression of complex medical information in a language that patients are more comfortable with. However, only 2 patients, 4% of the sample population, expressed 'No preference' regarding language use during medical consultation. Thus, healthcare providers should consider patients' preference when conducting consultations.

Q9) If you do not understand a term or phrase how comfortable do you feel asking your doctor to clarify in your preferred language?(Comfortable/ Somewhat comfortable/ Neutral / Uncomfortable)

This question aims to assess patients' comfort levels in seeking clarification from doctor when they encounter unfamiliar terms or phrases during medical consultation. The findings are shown in the table below:

Table 2.8. Comfort level in seeking clarification of medical terms in preferred language among patients

Comfort level	Number of patients
comfortable	20
Somewhat comfortable	13
Neutral	1
uncomfortable	16
Total	50

The majority of patients 20 patients feel ‘comfortable’ asking doctor to clarify a term or an expression if they did not understand it. This may contribute to improve understanding and satisfaction with healthcare encounters. 13 patients, around 26% feel ‘Somewhat comfortable’ to ask doctor to clarify a term or phrase in their preferred language. Only 2% out of the whole population (one patient) indicated a ‘Neutral’ stance regarding his/her comfort level for asking clarification. Finally, 16 patients, 32% of the whole population feel ‘uncomfortable’ asking doctor for more explanation if there is confusion or misunderstanding.

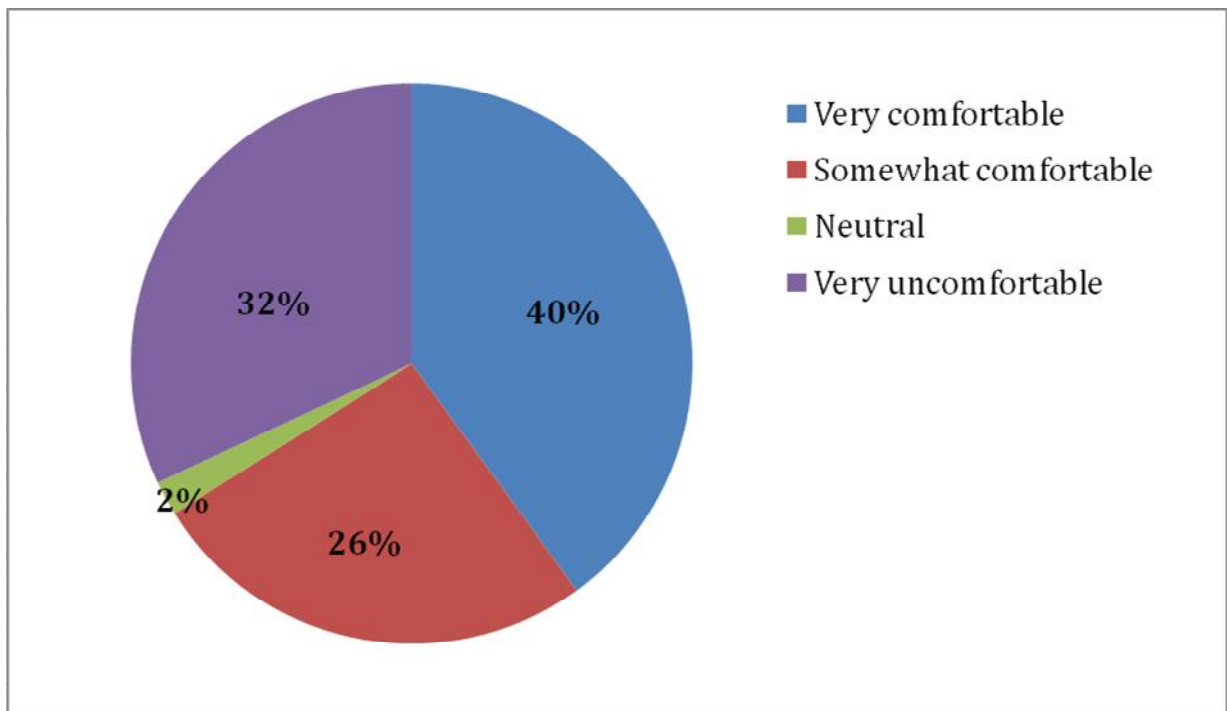


Figure 2.9. **Comfort level in seeking clarification of medical terms in preferred language among patients**

The results indicate that some patients may experience obstacles or hesitations when communicating with doctor, this may be caused by things like language barriers, judgmental anxiety or bad experience in the past with healthcare providers.

Q10) In your opinion, what measures could be taken to improve communication between doctor and patients from diverse linguistic background ?

This question collects qualitative data and the main intention behind it is to investigate about what patients think about possible ways to improve communication between physicians and patients.

Based on the responses, the following actions are possible:

- Doctors should reduce the use of Fr language;
- The use of CS so that doctors use Ar for clarification and Fr for medical terminology.
- Doctors should simplify medical information for patients.
- Linguistic diversification.
- The general level of society is what imposes on doctors the language of communication. It is an obligation not a choice, in another word, language should be chosen according to the cultural level of society.
- Doctors should take into account the patient's age and his/her educational level.
- Conducting courses for doctors to learn how to communicate with patients, and training them in the Ar language.
- The use of translation if the doctor feels that the patient is dissatisfied.

This responses offer a range of measures that could be taken to improve communication between physicians and patients.

Q11) Do you have any additional experience related to doctor-patient communication in the rural healthcare context in Algeria?

The purpose beyond this question is to gather qualitative insights into DPI in rural healthcare settings, in addition to their experiences there. This question was optional, thus, only four informants answered it. The responses were as follow:

- The good treatment is that the patient needs the doctor's humanity before his medication.
- The doctor can seek the help of an anthropologist or sociologist.
- Sometimes there exist misunderstandings between doctors and patients.
- Doctors find great difficulties in communicating which lead to misunderstandings, those results in a poor diagnosis for the patients.

Q12) On a scale of 01 to 10, how satisfied are you with the communication between you and your doctor? .../10

The aim beyond this question is to quantitatively assess patients' satisfaction level with doctors by using a numerical scale.

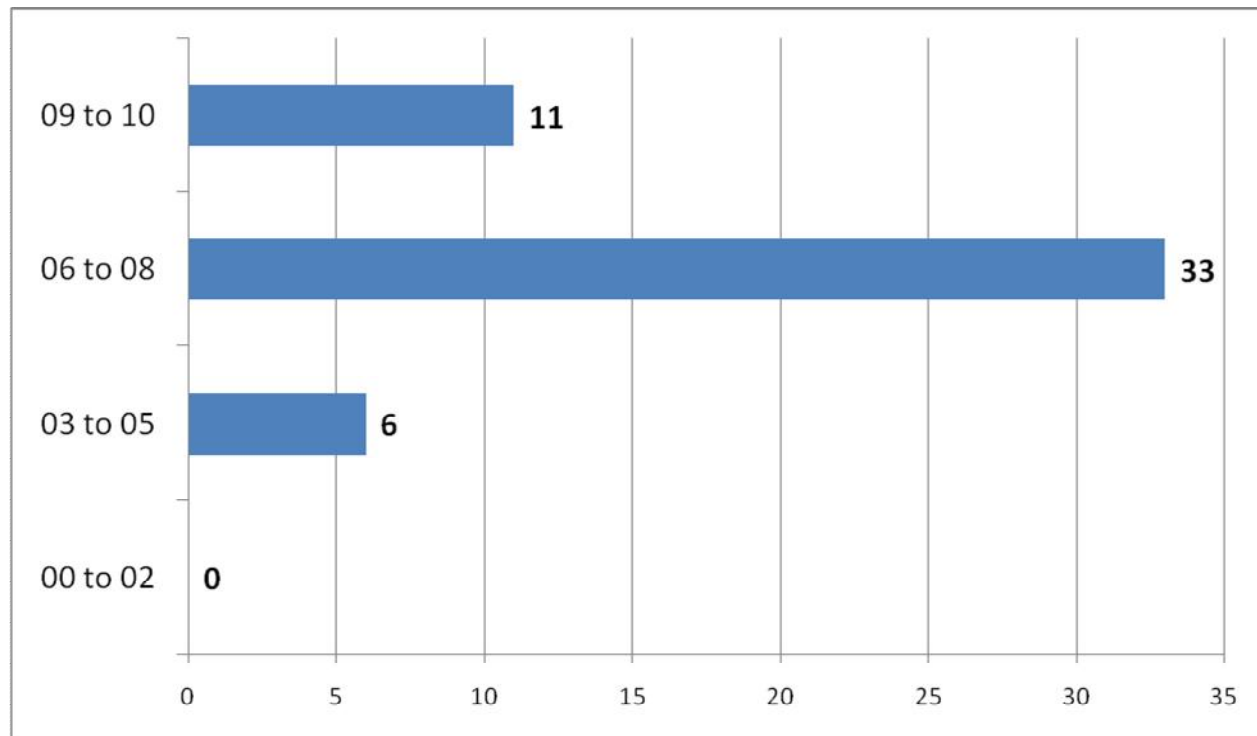


Figure 2.10. Doctor-Patient communication satisfaction ratings: A scale from 1 to 10

The majority of replies fell between 06 and 08, suggesting that a significant number of patients have a moderate level of satisfaction with their physicians. This implies that these patients' demands or expectations are largely being met by the doctor.

Following that, the next largest group falls within the range of 09 to 10, indicating high levels of satisfaction. This suggests that a sizable percentage of patients are satisfied with the care they receive.

A smaller group falls within the range of 03 to 05, representing patients who are somewhat dissatisfied or neutral about their experience. Moreover, it is interesting to note that no patient gave a satisfaction rating of between 00 and 02. This may suggest that the sample size is insufficient to fully represent all possible responses, or that the scale is not sensitive enough to measure extreme unhappiness.

2.10 Analysis and interpretation of doctors' questionnaire

➤ Section A (The Social Background Information)

The first part of the questionnaire is concerned with the basic information of the social background of doctors including: gender, age and years of experience in his/her career.

a) Age

The following table shows the study's findings regarding the age of doctors in both public and private sectors divided into four age groups.

Table 2.9. Doctors' Age Groups

Doctors' age group	Number of Doctors
20 – 30 years old	2
31 – 40 years old	6
41 – 50 years old	3
Over 50 years old	3
Total	14

The results show that 14.28% were doctors between 20-30 years old. One of them works in the public hospital and the other in his/her private office. Possibly, they were recent graduates.

The largest percentage which represents 42.85% of the whole population fell into the age group between 31- 40 years old. 21.42% fell within the range of 45 to 50 years old. These doctors may be considered mid-career professionals. Similarly, 21.42% of Doctors were over the age of 50. The percentages are represented in the figure below:

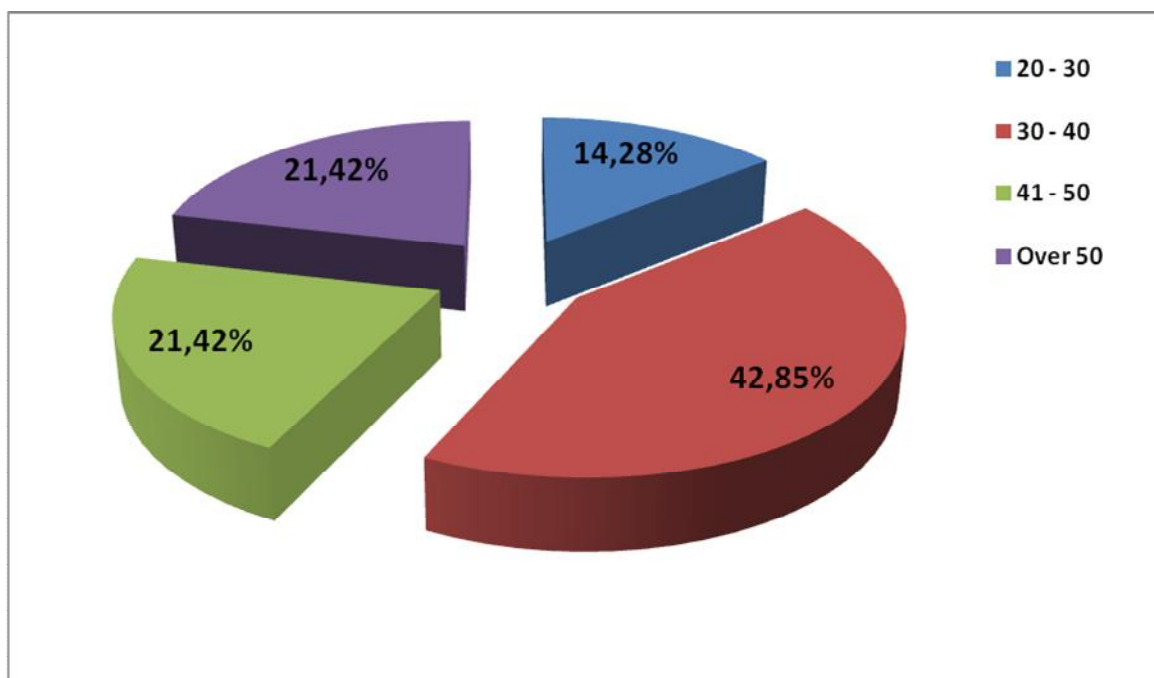


Figure 2.11. **Doctors' Age Groups**

In summary, the age distribution among doctors reflects a diverse workforce with varying levels of experience.

b) Gender

This question was asked in order to identify gender of doctors. Six Doctors, 42.85% out of 14 respondents were female doctor, and eight doctors, 57.14% were male doctors. Yet, most of male doctors were working in their own medical offices.

c) Years of Experience

This questions aims to have an insight about doctor' years of experience in their career to link to their linguistic interaction and experience with patients.

Table 2.10. Doctors' years of experience and some general information.

Doctors	Gender	Sector	Years of experience
Doctor 01	Male	Public	14
Doctor 02	Female	Public	05
Doctor 03	Female	Public	24
Doctor 04	Male	Public	16
Doctor 05	Female	Public	01
Doctor 06	Female	Public	12
Doctor 07	Female	Public	17
Doctor 08	Male	Private	21
Doctor 09	Female	Private	01
Doctor 10	Male	Private	30
Doctor 11	Male	Private	13
Doctor 12	Male	Private	16
Doctor 13	Male	Private	13
Doctor 14	Male	Private	09

In summary, two doctors were in the beginning their career (first year). Seven doctors exceeded ten years of experience. The rest had more than twenty years of career. Thus, each Doctor's experience vary from one to another.

➤ **Section B : Linguistic Background of Doctors**

This part used closed-ended, multiple-choice, and open-ended questions to collect data that was both qualitative and quantitative. In addition to providing

broad information about language use in medical settings, it provides an overview of the doctors' linguistic history.

Q1) What language are you proficient in for medical practice? (Arabic/ French/ Berber)

This question was asked to assess the language proficiency of Algerian doctors whose mother tongue is AA, but, their medical education was conducted in Fr. The results are presented in the following table:

Table 2.11. Language proficiency for medical practice among doctors

Language	Doctors' Number	Total %
Arabic	2	14,28%
French	3	21,42%
Berber	0	00%
Arabic & French	9	64,28%
Total	14	100%

The results show that around 14.28% of doctors stated AR as their proficient language because it is considered as the official language of the country. However, according to 21.42% of doctors, Fr is their language of proficiency, even though FR is the language of medicines in Algeria, a relatively small percentage of doctors reported being fluent in the language.

Moreover, none of the doctors stated proficiency in Berber. Despite being one of Algeria's official languages, it is not widely used in medical practices because it is rarely spoken in the areas of the study.

Finally, the majority, 64.28% of the sample population stated proficiency in both Ar and Fr. This indicates that most of Algerian doctors are bilingual, this is likely a result of their educational background and the linguistic diversity in Algeria

(see figure 2.12). All in all, the results highlight the bilingual proficiency of Algerian doctors in both Ar and Fr.

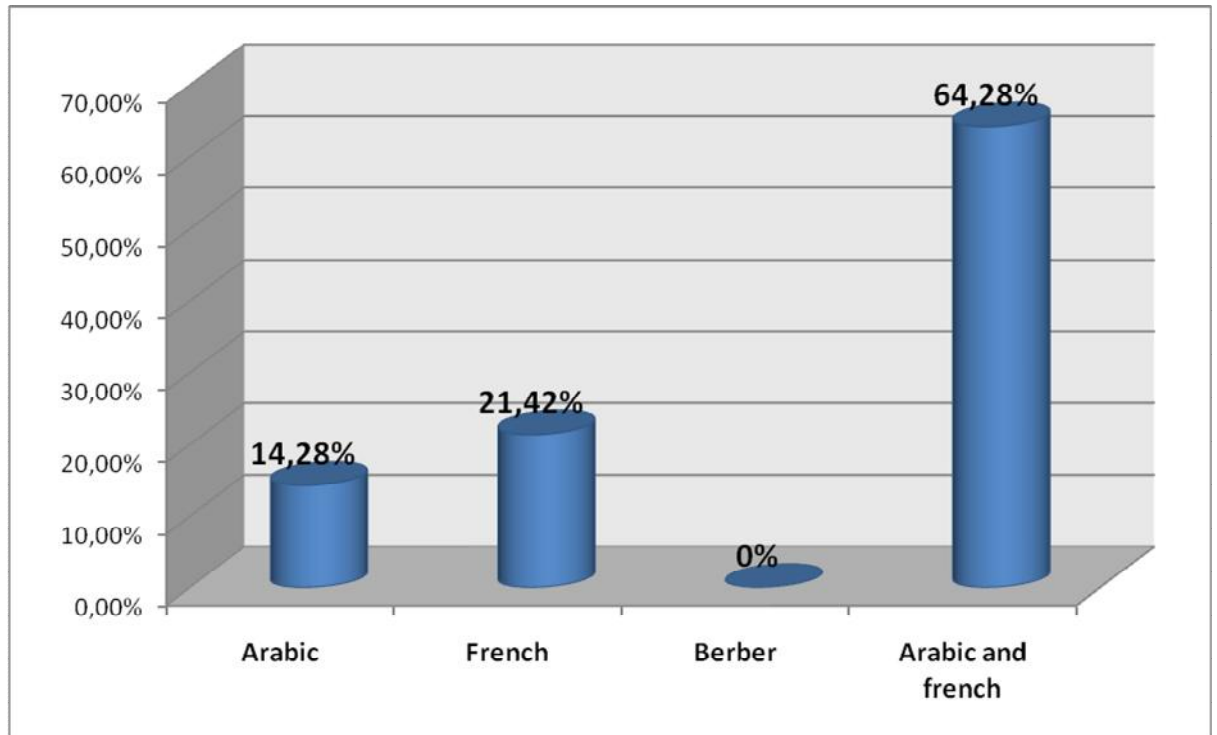


Figure 2.12. Language proficiency for medical practice among doctors

Q2) In which language do you speak with patients ? (Arabic/ French/ Berber)

The purpose of this question is to know more about the preferred language of Algerian physicians when interacting with patients. The findings are as follows:

Table 2.12. Language usage in patient communication among doctors in rural Algeria

Language	Doctors' number
Arabic	09
French	00
Berber	00
Arabic and French	05
Total	14

The majority of doctors (64.28%) stated Ar as their language of interaction with patients. They reported that the doctor should speak the language of the community to facilitate understanding for the patient.

Unusually, none of the doctors surveyed stated Fr as their preferred language for communication with patients. This may be due to patients' comfort and familiarity with the language, as well as the doctor's own proficiency in Ar. Similarly, none of the doctors stated Berber because it is rarely spoken in Beni-snous valley.

Finally, 35.71% of doctors noted the use of both Ar and Fr. They stated that they use AR for explanation and FR for medical terminology. (The percentages are shown in figure 2.13)

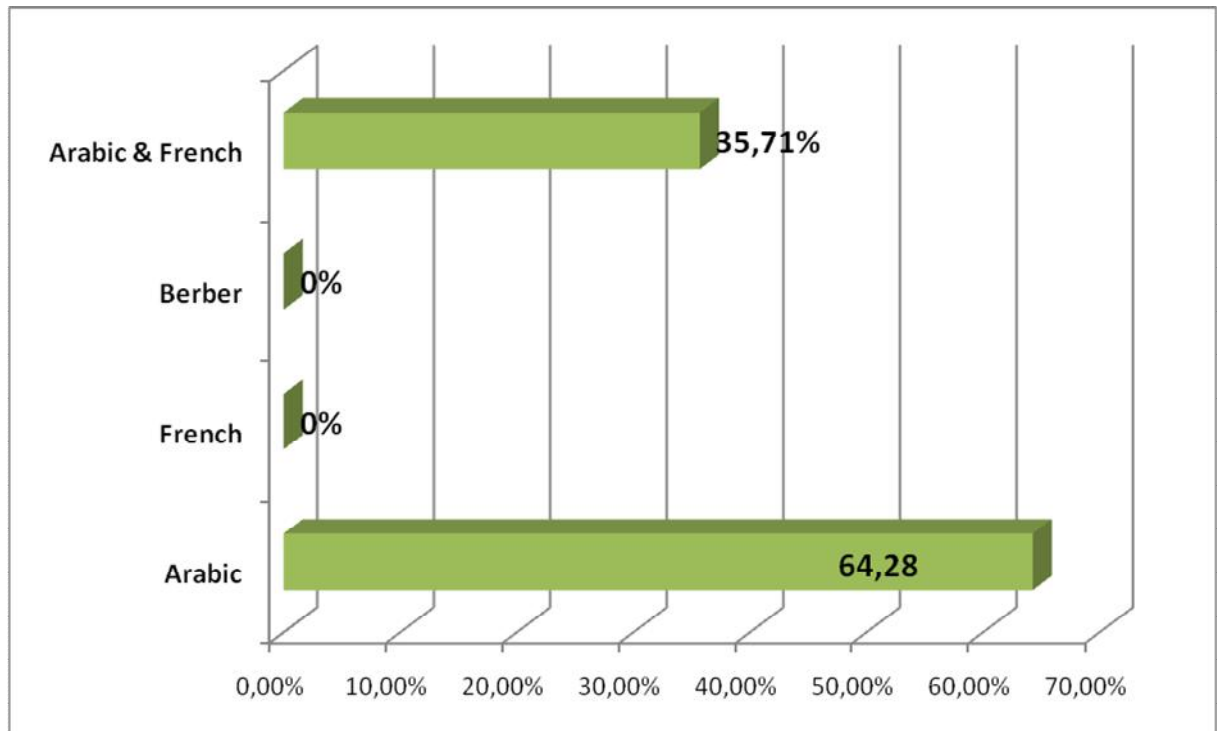


Figure 2.13. Language usage in patient communication among doctors in rural Algeria

Q3) Have you encountered problems in communicating effectively medical information due to language differences? (yes/no)

The aim of this question is to evaluate the extent to which language differences impact effective communication with patients during the medical consultation.

The results showed that 10 doctors, around 71.42% of the whole population said that they did not face any challenges when communication with patients. One of these doctors reported that he was working in ‘Tindouf’, a town situated in the South of Algeria , and most of the patients there were ‘polisario’⁹ people who uses a dialect called ‘ Al-Hassania’ which is close to Arabic ,that’s why he is used to speak only in Arabic.

⁹ Sahrawi nationalist organization

Moreover, this suggests three possibilities, the first is that these doctors are able to effectively navigate language challenges and deliver medical information to patients without difficulties. The second possibility is that these doctors often associated ineffective communication with being bad doctor and lacking communicative competence. The last possibility is that these physicians were not aware of the existence of language problems.

Whereas, only 4 doctors (28.57%) declared that they faced difficulties in communication due to language differences which are a notable issue in rural healthcare settings. The researcher asked them to provide him with some examples. The responses were as follows:

- Lack of understanding of the patient;
- Difficulty of defining medical concepts;
- Difficulty when dealing with Africans;
- Due to conducting medical studies in Fr, sometimes doctor can not name the disease in Ar.

Q4)Do you use Arabic and French during medical consultation? (yes/no)

The goal of asking whether both AR and FR language are used during medical consultations among Algerian doctors is to assess the linguistic diversity and communication practices in rural healthcare settings. The results demonstrated that 11 doctors, about 78.57% of the sample population use both Ar and Fr when interacting with patients. Each language is used for specific purposes, i.e. Ar is used when explaining and clarifying diagnosis, and Fr language for medical terminology and names of medicines, this means that most physicians found difficulty to avoid using Fr in the consultation.

On the other hand, only 3 doctors (21.42%) said that they do not use both language (speak only in Ar). One of them belongs to the area of study (Beni-Snous valley), another has more than 20 years of work in Beni-Snous.

Q5) How often do you code switch between French and Arabic with patients? (Always/ Frequently/ Occasionally/ Rarely)

This question seeks to understand the frequency at which Algerian physicians working in rural areas code-switch between Ar and Fr during DPI. The findings are illustrated in the table below:

Table 2.13. Frequency of code-switching between French and Arabic among doctors

Frequency of CS	Number of Doctor
Always	03
Frequently	07
Occasionally	03
Rarely	01
Total	14

The results showed that half of respondents (50%) indicated that they ‘Frequently’ code-switch between Fr and Ar when communicating with patients, noting that patients in rural areas may have different levels in both languages, thus, physicians who frequently code-switch may do so to make sure that information concerning patients is understood and communicated effectively.

Next, about one-fifth (21.42%) of the respondents stated that they ‘Occasionally’ code-switch, this means that there are still instances where physicians find it necessary to switch between languages, or in situations where patients express a preference for one language over the other. A similar percentage of informants reported that they ‘Always’ code-switch, this indicates that for some doctors, interaction in both Ar and Fr simultaneously is standard practice with patients.

Lastly, a small percentage, about 7.14% of doctors stated that they ‘Rarely’ code-switch between Fr and Ar due to patients’ preference (the percentages are illustrated in the figure 4.14.).

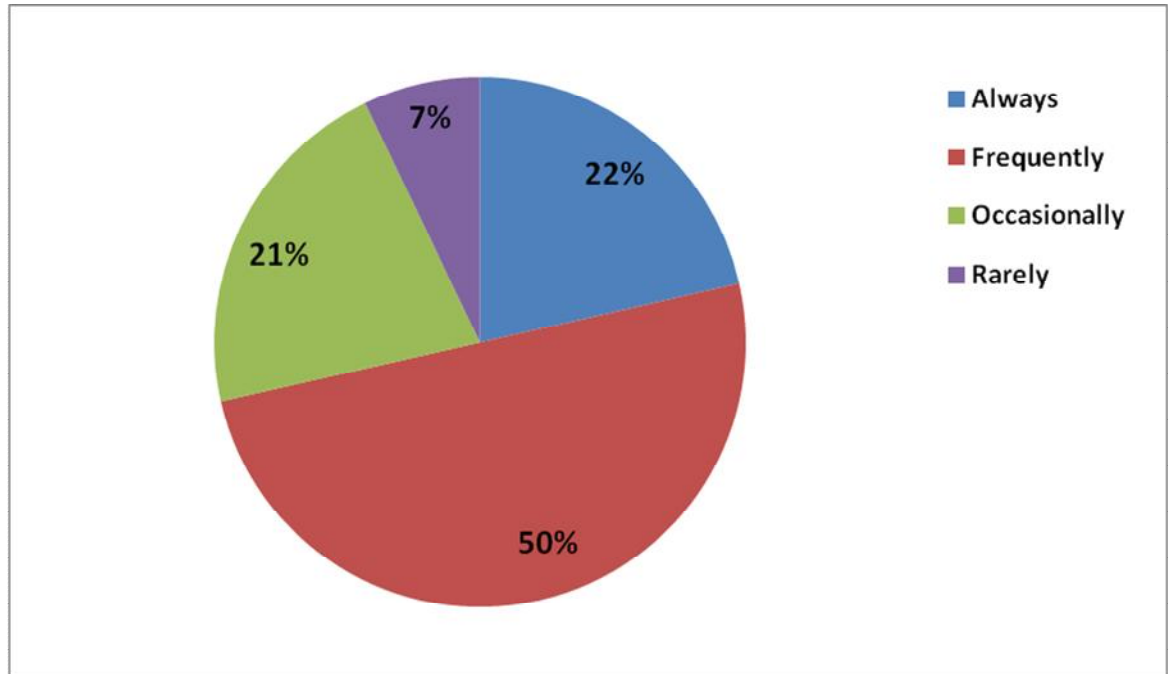


Figure 2.14. **Frequency of code-switching between French and Arabic among doctors**

Q6) Why do you code switch from Arabic to French?

(Language proficiency/ Patients' request/ Medical terminology)

The question’s goal is to determine the factors that make doctors code-switch between Ar and Fr. The findings are demonstrated in the following table:

Table 2.14. Reasons for code-switching from Arabic to French in medical practice.

Factors	Doctors' number	Total %
Language proficiency	00	00%
Patients' request	02	14.28%
Medical terminology	11	78.57%
Patients' request & Medical terminology	01	7.14%
Total	14	100%

The data indicates that 78.57% of doctors code-switch from Ar to Fr due to medical terminology. Only 14.28% of doctors code-switch because of patients' request. One doctor has chosen both medical terminology and patients' request. However, none of physicians surveyed code-switch because of his/ her language proficiency, i.e. they put give more importance to the patients (patients-centred communication)

Thus, the findings highlight that physicians working in rural areas in Algeria code-switch between languages to enhance communication, patient satisfaction and when it necessary to use medical terminology to provide description of treatment and diagnosis.

Q7) How does code switching affect doctor-patient's communication?**(Positively/ Negatively/ No effect)**

This question was distributed in order to understand how Algerian physicians in rural areas view the impact of CS on DPI, by exploring whether doctors believe that it affects communication positively, negatively or has no effect .The data collected are presented in the following table:

Table 4.15. Impact of code-switching on doctor-patient interaction

Impact	Number of Doctors
Positive	6
Negative	5
No effect	3
Total	14

The majority of doctors, around 42.85% of the whole population, declared that CS has a positive effect on DPI as it facilitates understanding, helps to bridge language barriers and establish truth. In contrast, 35.71% of the whole population indicated that CS has a negative impact on DPI because it disrupts the flow of communication and leads to misunderstanding or decreases patient confidence. Moreover, 21.42% of doctors perceive CS as having no impact on healthcare communication. They may believe that effective communication depends more on elements like empathy, active listening and cultural sensitivity.

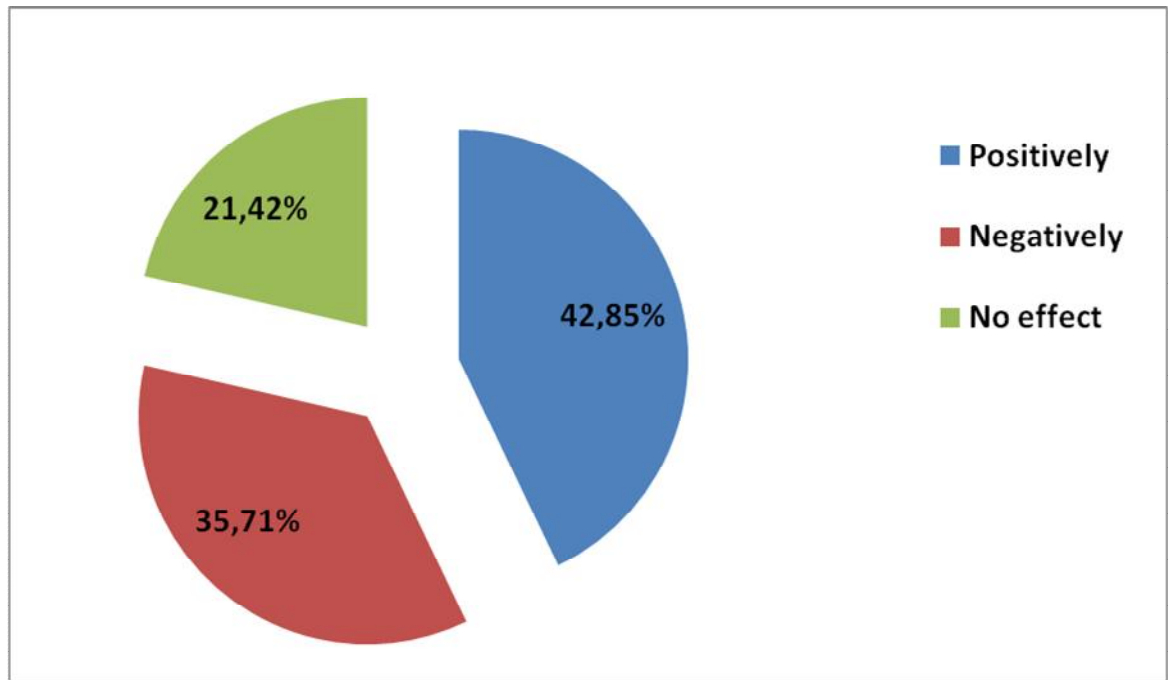


Figure 2.15. Impact of code switching on doctor-patient communication

In summary, physicians' perceptions of CS in the Algerian rural context vary, with some viewing it positively, other negatively and some perceiving no effect, this may reflect the complex interplay of linguistic, cultural and professional dynamics that shape DPI.

Q8) Have you received feedback from patients regarding language choice? (yes/no)

This question was submitted in order to understand if doctors have received any comments regarding language choice during medical consultations. The results showed that the majority of informants, 10 doctors, around 71.42% reported that they did not receive any feedback regarding language choice. This suggests two possibilities, either there exist no issue of language barriers, or patients may not feel comfortable providing feedback on this specific aspect of their care.

On the other hand, only 28.57% of doctors reported having feedback regarding language choice. This indicates the existence of language barriers in DPI. These doctors explained this with a set of examples of patients' comments regarding language choice:

- Some of them gave comments when they do not understand FR language;
- Sometimes, some patients asked doctor to speak in AA;
- Some of patients declare that they do not understand;
- Most of patients are uneducated, so, there is difficulty in conveying information.

Q9) What are the factors you take into consideration when choosing the suitable language to each patient? Please explain

The goal beyond this question is to collect qualitative data about the factors that influence the choice of language when communicating with patients in Algerian rural healthcare settings. The responses of doctors were as follows:

- The age of the patient;
- The educational level of the patient.
- The cultural level of the patient.
- The socio-economic level of the patient.

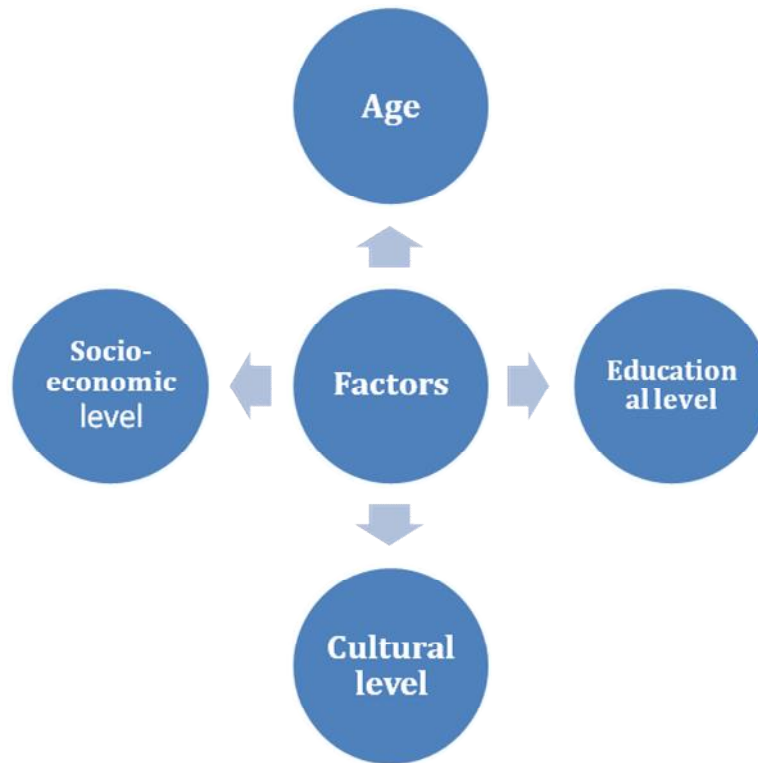


Figure 2.16. Factors influencing doctor's choice of language

Q10) What strategies or solutions do you use to overcome the challenges of language barriers?

The aim of this question is to explore effective solutions or strategies for doctors to overcome language barriers. Two doctors reported that there are no language barriers for doctors. As stated previously, these doctors often associated this with being bad doctor and lacking communicative competence.

On the other hand, the rest of physicians have provided a set of strategies and solution:

- ❖ The use of a language that is understood by patients.
- ❖ Use of Arabic with colloquial terms for clarification.
- ❖ Simplifying ideas for patients ,i.e. an accurate diagnosis with simple explanation.

- ❖ Avoid using Classical Arabic.
- ❖ Contributing to the explanations.
- ❖ The doctor must do a lot of research to avoid linguistic barriers.
- ❖ Enlisting the help of nurses.
- ❖ Detailed explanation using drawing and photographs.

Moreover, two doctors were from the studied area (Beni-Snous) reported that ‘the man is the son of his environment’, they said that they know almost all the individuals and their way of thinking, i.e. they deal with each person according to his thinking and mentality. Also, they stated that the doctor should coexist with patient, embody his level, acquire his language and explain in the way they understand, whatever it may be.

Q11) Do you have any additional comments about language use in your medical practice especially in the rural context of Algeria?

Answering this question was optional; It aims to have insight about language use in medical practice within rural context in Algeria. Since this question was optional, six doctors did not answer it. Whereas, eight doctors have provided some instances:

- ❖ Oral conversation with patients;
- ❖ Sometimes doctors switch to colloquial language to simplify explanation of patient’s medical condition due to his difficulty in understanding even MSA.
- ❖ The patient’s understanding of the treatment protocol is essential to his success, and choosing the language of communication is its golden key.
- ❖ Doctors should integrate more with society to acquire linguistic concepts and synonyms.
- ❖ In rural areas, doctors often switch to colloquial language.
- ❖ In rural areas, communication in Arabic is smoother than in foreign language.

❖ The questioning is important to make the right diagnosis, thus, if the interaction with patients takes place in the right conditions, it is in the interest of patient and doctor. Language is essential to doctor-patient relationship.

2.11 Analysis and Interpretation of Observation

The researcher engaged in participant observation for DPI during the medical consultations at the public hospital and some private medical offices. This method of observation enabled him to widen the focus of the observed situations. During the consultations, the researcher tried to observe, listen carefully and to take notes in the meantime in order to have an insights about the dynamics of communication among doctors and patients in the Algerian rural healthcare settings, to examine whether linguistic variation or linguistic barriers cause communication problems, and to search for the reasons that make doctors code switch between Fr and Ar.

It was noticed that most of the patients did not use Fr language when interacting with doctors, and most of their speech was in AA with some words in MSA, except some Fr names of illnesses like *la tension* (blood pressure) , *cancer* (cancer), *goitre* (goiter) , *infection* (infection) , *la grippe* (influenza)...etc ,some of them used MSA words for instance :

/kli:t bu:ʕdima balak ʕindi: tasamu:m/ (i ate hawthorn fruit, maybe i have poisoning.).

/tabi:b maʕlɪʃ taktabli: waraqa tibi:ja/ (Doctor, can you write for me a medical paper.)

however, most of the time, both young and aged people used colloquial names of diseases which are illustrated in the following table:

Table 2.16. Colloquial Name of Illnesses

Colloquial name if illness	French term	English term
/yʊ:ya/	Goitre	Goiter
/el bard/	La grippe	Flu
/ˈsukər/	Diabète	Diabetes
/lidam/	Cholesterol	Cholesterol
/fahma/	Triglyceride	Triglyceride
/blæyəm/	Les angines	Angina
/sɔdar/	L’asthme	asthma

Moreover, the researcher noticed that the FR language poses problems of communication. It was proved that patients with low level of proficiency in Fr have difficulties in expressing their concerns and it enlarges gaps between doctors and patients so that it increase the risk of miscommunication leading to misunderstandings, misinterpretations, and medical errors. Patients may struggle to accurately convey their medical history, symptoms, or concerns. Furthermore, although it was clear in face of some patients that they did not understand diagnosis of doctor when talking in Fr, they did not ask them to explain in AA, for instance, a patient (university student) was ill with eye swelling , and the doctor explained diagnosis and provided the treatment for her in Fr, after a while , the nurse came to ask the doctor to repeat the explanation for her in AA because she did not understand Fr and she was shy to ask him for more clarification(see example 1). And most of patients were usually passive.

Example 01:

Doctor : /C’est une allergie, une inflammation de la conjonctive, conjonctivité./
(It is an allergy, an inflammation of the conjunctiva, conjunctivity.)

Additionally, The researcher observed that patients in rural healthcare setting have more comfort when speaking in AA and they rarely code-switch between Fr

and Ar. this may be because they have lower level of exposure to Fr language compared to urban communities so that it is rarely spoken in rural communities, these linguistic barriers can lead to gaps between doctors and patients, misunderstanding and confusion.

On the other hand, in the observational study, it was noticed that Fr language was not widely used, and Ar is generally the language of interaction in medical encounters and only few cases of Ar/Fr CS were identified, however, the researcher noticed that some doctors were aware of their language choice, and they started using MSA words to explain diagnosis which is a result of what Labov(1972) called ‘The observer’s paradox’ which makes the speaker behave unnaturally when they feel that they are observed (see example 02).

Example 02:

Doctor: ‘rah fik faqr el dam , al safuʔi:h al damuwi:ja rahum tajhin.’ (You have anemia and low platelets)

Sometimes doctor couldn’t convey the message to patients neither in FR nor in MSA, and they could’t find the right word in AA which leads to confusion (see example 03).

Example 03:

Doctor : ‘mafikʃ gout ?’ (Do you suffer from gout?)

(the patient did not understand)

Doctor: ‘marad al naqras’ (Gout)

During the consultation, it was witnessed that doctor took into consideration age of the patient and his/her socio-economic level and educational and social background in choosing the language of interactions. They tend to use AA with aged patients in order convey complex medical information in a manner that enable the patient to understand the diagnosis and treatment plan , and they even use colloquial medical terms to avoid confusion of patients ,for instance, /rah

fik ṣarq lasan howa jaṣmal hakda/ (you have sciatica, it does like this) ‘, /justement, hadu aṣrad taṣ lidam du:k naṣmelak un bilan/(exactly, this are the symptoms of the cholesterol, i will give you analyses). Also, doctor used MSA terms while speaking with young patients who are under 12 years old like /iltiḥa:b ʔal lu:zatayn/ (tonsillitis), /iltiḥa:b/ (infection)

One of the doctors reported that language is a significant factor in dealing with patients as it helps in making the patient feels comfortable and in empathy building. Another doctor mentioned that it is difficult for them to find the equivalent term AR because their medical studies were conducting in the Fr language , she stated that she feels more comfortable when discussing medical information in Fr, but due to the patients level, they are obliged to talk alternate the use of Ar and Fr. In other word, it is difficult for some doctors to translate medical terminology in the local variety AA (example 03) although AA vocabulary is not well established to cover doctor-patient needs as regards medical vocabulary . Thus, doctors code switch between AR and FR in a way that they use AA for explanation they switch to Fr for medical terminology, names of illnesses, names of medications and when they provide prescription instructions ...etc. Here are some examples of situation where CS occurred:

Example 04) Aged Patient

(1) Doctor: ‘hkili gaṣ amrad li tṣajri ṣlihom batf nfufo; sukar, *la tension*.’

(what diseases are you being treated for ? diabetes, blood pressure...!!)

(2) patient : ‘jdirlı sukar w lıdam.’ (I have diabetes and cholesterol.)

(3) Doctor: ‘diri libra lhadza wela lkafi?’ (Do you take injections or tablets?)

(4) patient : ‘la yi lkina.’ (No, only tablets.)

(5) Doctor : ‘oui, dwa taṣak baqilak mat-markif?’ (Do you still have medicine or should i write to you ?)

(6) patient : ‘wah, w raḥ ṣandi sdar.’ (Yes, and i have chest)

(8) Doctor : ‘*L’asthme, une bronchite. fufi elhadza fadi rendez-vous*’
(Asthma, bronchitis. Look, take an appointment)

(9) patient : (did not reply)

(10) Doctor : ‘hna fandra f *laboratoire* , hadi win jfajru , jaftiwak nhar w
tdziw tfajru.’

(here in laboratory, here where they do analysis , they will give you a day to
come and you do your analysis)

In this example, the doctor was trying to talk only in AA with the aged patient but he couldn't avoid FR terms like in line 5 there is CS ‘mat-markich’ which is an ‘*intra-word switching*’ at morpheme boundary. In line 6 the patient couldn't describe the symptoms because of the lack of her vocabulary and she describe it with ‘rah fandi sdar.’(i have chest) instead of ‘l’asthme’ (asthma),so, in line 8 the doctor code-switch to FR to name the disease and he use another Fr word ‘*rendez-vous*’(appointment) and the old woman did not understand , then, he code-switch to FR for more clarification. another example when the doctor ask the parent of the patient if she needs justification for absence in school in line (11) and she did not understand, even though the doctor noticed that the patient did not understand Fr, he couldn't avoid it in his speech (see example 05)

Example 05

(11) Doctor : ‘tahtadzi *justification* li 'qraja?’(Do you need justification for
you studies ?)

(Patient did not understand)

(12) Doctor: ‘*maladie!!*’ (Medical paper)

(13) patient: ‘wah’ (Yes)

(14) Doctor : ‘*pour les douleur taba le treatment*’ (For pain, follow the
treatment)

In examples (06), Lines 15 to 19, doctor code-switch from Fr to Ar to be sure that the patient understood the diagnosis, i.e. he spoke in Fr then gave the equivalent in Ar.

Examples 06:

(15) Doctor : ‘...šala xatar *collectivité*, al taḏẓamušat.’ (it is because of)

(16) Doctor : ‘waš šandak *comme une maladie chronique*, marad muzmin?’ (what chronic disease do you suffer from ?)

(17) Doctor : ‘Rah fik *l’animé*, faqr al dam.’ (You have anemia.)

(18) Doctor : ‘fik *la migraine*, jaqi:qa hadu ašrad tašha’ (It's a migraine and these are its symptoms.)

(19) Doctor: ‘marakš tabaš šand *neurochirurgien*, dẓiraḥat al ašsab’ (you should follow up with a neurosurgeon.)

In the following examples, the researcher will state some situations where code switching occurred:

Example 07)

(20) Doctor: ‘šandha *quarante-huit ans?*’ (she is fort-eight years old ?)

(21) Patient: ‘*oui , et fiha soi-disant un cancer dans l’ovaire.*’ (yes, and she have a cancer in the ovary.)

(22) Doctor: ‘mwalfa tnaqed?’ (Were there any fractures before?)

(23) Patient: ‘*Non, juste les faux gestes, les fractures c’est la première fois.*’ (No, just wrong gestures, the fractures, it’s the first time.)

(24) Doctor: ‘*D’accord, raha t-suiviée cancer?*’ (ok, is she still following cancer ?)

(25) Patient: ‘*Oui, la suite de chimie.*’ (Yes, chemistry suite.)

This example (07) shows a clear image of AR/FR CS during DPI in all lines.

One of the doctors said that if the patient started speaking FR, the doctor would speak FR and the same thing for AA and this is what the example shows, i.e. doctors often take into consideration patient's educational level during the interaction.

Example 08)

(26) Doctor: 'waf řandak, *chute taht wla taht řlik hadža?*' (What do you have, fall, did you fall or did something fall on you?)

(27) Patient: '*non*, kont nalřab *ballon*' (No, i was playing football.)

(28) Doctor: '*la radio* raha mliha , řas ruřak m *l'effort*, *trois jours* tasra *cicatrisation* w truř. ' (the radio is good, you should be careful of the effort, you will have three days of healing then it goes.)

In the last example (08), the doctor starts the discussion in Arabic, likely because it's the native language. The patient responds in Arabic, maintaining the language continuity initiated by the doctor, then, The doctor switches to French, possibly because they assume the patient understands French well or for clarity on medical terms. Moreover, doctors tend to code-switch between FR and AR when discussing medical information and when providing prescription instruction (see example 09).

Example 09)

29) Doctor: '*Budécone c'est un treatment à l'interne*, hija tařtadž *la ventoline beaucoup plus* , mayadiř nařmalha *un antibiotique tant que* makanř řřana *c'est pas la peine. Donc řandha tařmal la ventoline deux fois fili:l plus les comprimé , deux comprimés sbař* ' (Budecone is an internal treatment, she needs Ventolin much more, we won't give her an antibiotic as long as she does not have fever. So she takes Ventolin twice currently, plus the tablets, two tablets in the morning.)

30) Doctor : '*éviter le contact des produits de nétoyage comme le javel* bař tbař *la cause* tař had *les reaction*, diri *les gants*, tfut hadi *c'est transitoire. Pour le treatmet* kajen *des comprimés et une pomade matin et soir.*' (avoid contact with

cleaning products like bleach because they can cause reactions, wear gloves, this will pass. For the treatment, there are tablets and an ointment to be used morning and evening.)

This sentence in line 29 and 30 demonstrates a transition between Algerian Arabic and French, a common phenomenon in regions where both languages are spoken. The doctor may be more comfortable in both languages and uses each based on the medical terminology or concepts they're discussing. They used French for technical medical terms which are not commonly expressed in Arabic. So, here doctor code switch from AR to FR in order to provide prescription instructions and to explain diagnosis for the patient.

To conclude, In Algerian rural healthcare settings, language barriers (the use of FR and complex technical medical terms) between doctors and patients can lead to communication problems. These barriers hinder effective exchange of medical information, impacting diagnosis, and patient outcomes. Physicians may struggle to convey complex medical concepts or instructions, while patients may face challenges in expressing their symptoms or understanding treatment plans. In order to bridge these language barriers, doctors are using CS between FR and AA or MSA to achieve many functions. During the observational study, numerous CS instances among doctors and patients were noted, even though most of the patients preferred interacting in AR, Algerian doctors could not avoid the use of the FR language. CS occurred for four main reasons: to fill lexical gaps, to simplify medical information and to provide prescription instructions and repeat in order to clarify.

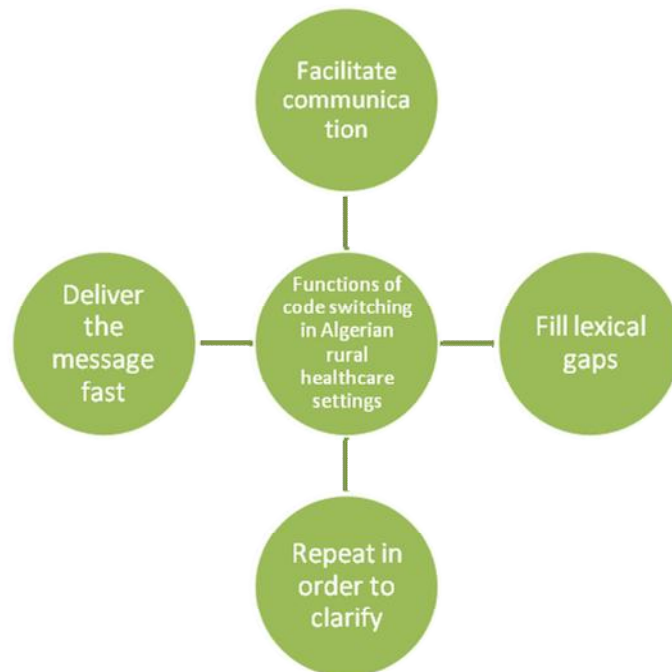


Figure 2.17. Functions of code switching in Algerian rural healthcare settings

2.12 Conclusion

The objective of this chapter was to focus on the empirical part of the research work by mixing qualitative and quantitative research. From the analysis of the questionnaire and observation, two subthemes were selected: communication problems caused by language differences and code switching motivations. It was concluded that there are gaps that hinder communication between doctors and patients, including, educational and social background, socio-economic level and language proficiency. Communication problems are caused by language differences, especially that fact that FR is the main language in the medical domain, and patients with low level of proficiency in FR have difficulties in understanding

the medical instructions provided by their doctor. Also, doctors in rural areas do not use Fr a lot, but they often find it difficult to find simple terms or phrases that help to provide clear explanation for their patients. Moreover, it became clear that CS between Fr and Ar is used by doctors in rural areas. First, it is used to fill lexical gaps. When they switch from Ar to Fr due to the unavailability of the phrase in the mother tongue, or sometimes they fail in finding the appropriate word in their dialect. Second, doctors tend to switch from Ar to Fr in order to provide description instructions, names of medicines and illnesses and to explain diagnosis. Finally, doctors code-switch from Fr to Ar to simplify medical information for the patient and repeat to clarify. Also, they choose language according to the patient's preferred language. To sum up, language barriers are a clear phenomenon in Algerian rural healthcare settings and are due to the educational level of patients and the low level in Fr, thus, doctors use CS as a tool to achieve many functions that help to improve healthcare communication.

General Conclusion

General Conclusion

In healthcare settings, doctors and patients still rely in one another to treat diseases, But, the quality of interactions between them is impacted by language barriers which are the major factor of healthcare communication problems.

Since Algeria is a multilingual society where Arabic, French and Berber are spoken, the phenomenon of code switching which is a sociolinguistic skill requires sifting back and forth between two codes , add complexity to DPI in which doctors tend to switch between French and Arabic. This complexity occurs especially in rural areas where most of people have low level in French unlike doctors who had their medical studies in French language. Thus, this diversity may impact the effectiveness of DPI and healthcare outcomes.

This research was designed to investigate language barriers and Arabic/French code switching in rural healthcare settings, exactly in ‘Beni-snous’, a region situated in Tlemcen, Algeria. In order to understand this linguistic phenomenon, the research was divided into two chapters. The first one dealt with theoretical consideration on code switching and other relevant sociolinguistic topics. Also, the researcher gave a bird’s eye view on the Algerian linguistic profile, in addition to an overview of doctor-patient communication and barriers to healthcare communication.

The second chapter was devoted to the practical part in which data were collected through the use of questionnaires and participant observation using recording and notes taking. Then, the obtained data were carefully analysed and interpreted to reach the research objectives.

This dissertation is built upon two major issues. First, to determine the problems of communication that exist during DPI in Algerian rural healthcare setting. Second, to find out the reasons that make doctors code-switch between Arabic and French during the medical consultation.

Through designing and conducting an exploratory case study in which a mixed research paradigm was under taken, and after analysing the data collected

from a sample population of two groups: physicians and patients using a set of research instruments including, a questionnaire for patients, a questionnaire for doctors, and participant observation of the consultation. The two proposed hypothesis were confirmed. The results demonstrated that in rural healthcare setting, communication problems between physicians and patients are caused by language differences, and the main factor is the use of the French language and complex medical terms among doctors, and the low proficiency in French and low health literacy among patients—the first hypothesis was confirmed. In their turn, Algerian doctors working in rural areas try to talk only in AA, but French is unavoidable because their medical studies were in French and AA dialect did not cover their linguistic needs. Thus, doctors code-switch between Arabic and French to be able to fill lexical gaps of their mother tongue, to repeat in order to simplify medical information and to provide description instructions the second hypothesis was confirmed. So, the findings obtained from the research instruments answer the study questions and confirm the hypothesis.

Arabic and French are widely spoken and used in various domains, including healthcare context. This research highlights the significance of addressing linguistic diversity in healthcare setting to ensure communication, doctors found themselves obliged to code switch between Arabic and French depending on the language preference of the patient or the context of the conversation. Therefore, in the Algerian rural healthcare settings, doctor-patient communication is affected by many influences which lead to communication problems, including language barriers which create gaps in DPI and hinder communication between them. Furthermore, Algerian doctors working in rural areas code-switch according to patients' preferred language, to fill lexical gaps and for explanation and clarification.

Even if this investigation provides insightful information about language barriers and code switching among patients and physicians in rural areas, it is important to acknowledge the limitations of this study. First, the sample size of participants may be limited which could have an impact on the generalizability of the findings. Also, the study's scope does not include an in-depth evaluation of all

the variables influencing doctor-patient communication. Additionally, individuals were unwilling to participate in answering the questionnaire. Moreover, the research was constrained by time, it was too short period to finish the work.

To sum up, language barriers are clear phenomenon in rural healthcare context which affect healthcare outcomes, and in order to bridge these hurdles, doctors code switch between Arabic and French to achieve many functions for effective communication. This study did not cover all aspects of language barriers and code switching in rural healthcare settings. It would be interesting if further studies tackle another issues related to this linguistic phenomenon.

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Appendices

Appendix A

Patient's Questionnaire

This questionnaire aims to understand patients' experiences with doctor-patient interactions in rural contexts. Therefore, you are kindly requested to answer the following questions. Your answers are important and will help to gain insights into the language dynamics in healthcare settings. Your response will be anonymous and will be used for research purposes only.

- Gender: Male ☐ Female ☐
- Age:
- Educational Background:.....
- Occupation:.....
- How often do you visit your doctor in your rural area?
 Regularly ☐
 Occasionally ☐
 Rarely ☐
- What language do you use for daily communication?
 Arabic ☐
 French ☐
 Berber ☐
- Have you ever encountered difficulties due to language differences when discussing your medical condition? Yes ☐ No ☐
- If yes, what are these difficulties
 ?.....
- In which language do you feel most comfortable when interacting with doctors ?

Arabic ☐

French ☐

Berber ☐

• How confident do you feel in understanding medical information provided by your doctor?

Very confident ☐

Somewhat confident ☐

Neutral ☐

Not confident at all ☐

• Do you code switch between Arabic and French during medical consultation?

Yes ☐ No ☐

• How do you perceive the use of arabic/french code switching during medical consultations?

Facilitates understanding ☐

Hinders understanding ☐

No impact ☐

• Do you prefer your doctor to consistently speak in one language throughout the consultation or do you find code switching helpful?

Consistent language use ☐

Code switching is helpful ☐

No preference ☐

• If you do not understand a term or phrase how comfortable do you feel asking your doctor to clarify in your preferred language?

Very comfortable ☐

Somewhat comfortable ☐

Neutral ☐

Very uncomfortable ☐

- In your opinion, what measures could be taken to improve communication between doctors and patients from diverse linguistic background?

- Do you have any additional experience related to doctor-patient communication in the rural healthcare context in Algeria?

.....

.....

.....

- On a scale of 01 to 10, how satisfied are you with the communication between you and your doctor? .../10

Questionnaire du Patient

Ce questionnaire vise à comprendre les expériences des patients avec les interactions médecin-patient dans des contextes ruraux. Par conséquent, vous êtes prié de répondre aux questions suivantes. Vos réponses sont importantes et aideront à obtenir des informations sur la dynamique linguistique dans les environnements de soins de santé. Votre réponse sera anonyme et sera utilisée uniquement à des fins de recherche.

- Sexe : masculin ☐ féminin ☐
- Âge :
- Niveau d'éducation :
- Profession :
- À quelle fréquence consultez-vous votre médecin dans votre région rurale ?

Régulièrement ☐

Occasionnellement ☐

Rarement ☐

- Quelle langue utilisez-vous pour la communication quotidienne ?
Arabe ☐
Français ☐
Berbère ☐
- Avez-vous déjà rencontré des difficultés dues aux différences linguistiques lorsque vous discutez de votre état de santé ?
Oui ☐ Non ☐

Si oui, quelles sont ces difficultés ?

.....
.....

- Dans quelle langue vous sentez-vous le plus à l'aise lorsque vous interagissez avec les médecins ?

Arabe ☐

Français ☐

Berbère ☐

- Quelle est votre confiance dans la compréhension des informations médicales fournies par votre médecin ?

Très confiant ☐

Assez confiant ☐

Neutre ☐

Pas du tout confiant ☐

- Changez-vous de code entre l'arabe et le français lors des consultations médicales ?

Oui ☐ Non ☐

- Comment percevez-vous l'utilisation du changement de code arabe/français lors des consultations médicales ?

Facilite la compréhension ☐

Entrave la compréhension ☐

Aucun impact ☐

- Préférez-vous que votre médecin parle de manière cohérente dans une seule langue tout au long de la consultation ou trouvez-vous le changement de code utile ?

Utilisation cohérente d'une langue ☐

Le changement de code est utile ☐

Aucune préférence ☐

- Si vous ne comprenez pas un terme ou une phrase, à quel point vous sentez-vous à l'aise de demander à votre médecin de clarifier dans votre langue préférée ?

Très à l'aise ☐

Assez à l'aise ☐

Neutre ☐

Très mal à l'aise ☐

- À votre avis, quelles mesures pourraient être prises pour améliorer la communication entre les médecins et les patients de divers horizons linguistiques ?

.....

.....

- Avez-vous des expériences supplémentaires liées à la communication médecin-patient dans le contexte des soins de santé ruraux en Algérie ?

.....

.....

- Sur une échelle de 01 à 10, à quel point êtes-vous satisfait de la communication entre vous et votre médecin ?

.../10

Appendix B

Doctors' Questionnaire

This questionnaire is designed to gather information about doctors' language use and code switching practices when interacting with patients. Your participation is greatly appreciated as it will contribute to the understanding of language dynamics in healthcare settings.

- Age:.....
- Gender: Male ☐ Female ☐
- Years of experience :.....
- What language are you proficient in for medical practice?
 - Arabic ☐
 - French ☐
 - Berber ☐
- In which language do you speak with patients ?
 - Arabic ☐
 - French ☐
 - Berber ☐
- Have you encountered problems in communicating effectively medical information due to language differences? Yes ☐ No ☐
 - If yes, what are these problems ?
 -

- Do you use Arabic and French during medical consultation? Yes ☐ No ☐
- How often do you code switch between French and Arabic with patients?
Always ☐
Frequently ☐
Occasionally ☐
Rarely ☐
- Why do you code switch from Arabic to French?
Language proficiency ☐
Patients' request ☐
Medical terminology ☐
Other
- How does code switching affect doctor-patient's communication?
Positively ☐
Negatively ☐
No effect ☐
- Have you received feedback from patients regarding language choice? Yes ☐ No ☐
If yes, give some
.....
- What are the factors you take into consideration when choosing the suitable language to each patient? Please explain.....

- What strategies or solutions do you use to overcome the challenges of language barriers?

.....
.

Do you have any additional comments about language use in your medical practice especially in the rural context of Algeria?

.....
.....
.....

Thanks for your participation

Questionnaire pour les Médecins

Ce questionnaire est conçu pour recueillir des informations sur l'utilisation de la langue et les pratiques de changement de code des médecins lorsqu'ils interagissent avec les patients. Votre participation est grandement appréciée car elle contribuera à la compréhension de la dynamique linguistique dans les environnements de soins de santé.

- Âge :
- Sexe :
 - Masculin ☐
 - Féminin ☐
- Années d'expérience :

- Dans quelle(s) langue(s) êtes-vous compétent pour la pratique médicale ?
 - Arabe ☐
 - Français ☐
 - Berbère ☐

 - Dans quelle langue parlez-vous avec les patients ?
 - Arabe ☐
 - Français ☐
 - Berbère ☐

 - Avez-vous rencontré des problèmes pour communiquer efficacement des informations médicales en raison des différences linguistiques ?
 - Oui ☐ Non ☐

Si oui, quels sont ces problèmes ?

.....

- Utilisez-vous l'arabe et le français lors des consultations médicales ?

Oui ☐ Non ☐

- À quelle fréquence changez-vous de code entre le français et l'arabe avec les patients ?

Toujours ☐

Fréquemment ☐

Occasionnellement ☐

Rarement ☐

- Pourquoi changez-vous de code de l'arabe au français ?

Compétence linguistique ☐

Demande des patients ☐

Terminologie médicale ☐

Autre

- Comment le changement de code affecte-t-il la communication médecin-patient ?

Positivement ☐

Négativement ☐

Aucun effet ☐

- Avez-vous reçu des retours de la part des patients concernant le choix de la langue ?

Oui ☐ Non ☐

Si oui, donnez-en quelques exemples

.....

- Quels sont les facteurs que vous prenez en considération pour choisir la langue appropriée pour chaque patient ? Veuillez expliquer

.....

- Quelles stratégies ou solutions utilisez-vous pour surmonter les défis des barrières linguistiques ?

.....

- Avez-vous des commentaires supplémentaires sur l'utilisation de la langue dans votre pratique médicale, en particulier dans le contexte rural de l'Algérie ?

.....

.....

Merci pour votre participation

Appendix C

Check List

1. Participant information :

- ☐ Name of the doctor :
- ☐ Gender of the doctor :
- ☐ Age of the Patient :
- ☐ Location : Hospital / Clinic

2. Observational Categories:

- ☐ Language used :

Identify the language(s) spoken by the doctor:

Identify the language(s) spoken by the patient:

3. Types of CS :

Note instances where the doctor switches between languages:

Note instances where the patient switches between languages:

4. Purposes of CS :

- ☐ Determine if code-switching is used for clarification.
- ☐ Determine if code-switching is used for empathy building.
- ☐ Determine if code-switching is used for medical terminology.

5. Context :

- ☐ Record the context in which code-switching occurs (e.g., discussing symptoms, explaining diagnosis, providing treatment options).

6. Effectiveness of Communication:

- ☐ Assess whether code-switching enhances or impedes communication

between the doctor and the patient.

- ☐ Note any misunderstandings or confusion resulting from code-switching.

7. Overall Impressions:

- ☐ Provide general observations and insights about the use of codeswitching in the consultation.

الملخص

في المجال الطبي، تعتبر التواصل مكونًا مهمًا في الممارسة السريرية لكل من الأطباء والمرضى لتقديم رعاية طبية مرضية. يمكن أن يؤدي التفاعل الضعيف إلى تشخيص غير دقيق. كان الهدف الرئيسي من هذا البحث هو دراسة استخدام اللغة في سياقات الرعاية الصحية الريفية الجزائرية، والبحث في مشاكل التواصل التي كانت موجودة بين الأطباء والمرضى نتيجة للعوامل التاريخية والتعليمية والاجتماعية والاقتصادية التي أدت إلى فجوات لغوية بين أفراد المجتمع. كما سعى البحث إلى تحديد الأسباب الرئيسية للتناوب بين العربية الجزائرية والفرنسية بين الأطباء والمرضى. تم إجراء دراسة حالة في بعض المكاتب الطبية الخاصة والمستشفى العام في وادي بني سنوس الواقع في تلمسان، الجزائر. بالاعتماد على عدد من المصادر وأدوات البحث لجمع البيانات، تم إجراء استبيان للأطباء وآخر للمرضى بالإضافة إلى ملاحظة الاستشارات باستخدام تدوين الملاحظات والتسجيل. تم تحليل البيانات التي تم جمعها من هذه الأدوات البحثية كمياً ونوعياً. كشفت النتائج أن حواجز اللغة كانت موجودة بين الأطباء والمرضى بسبب التفاوت في إتقان اللغة الفرنسية وكذلك استخدام المصطلحات الطبية المعقدة. لذلك، يقوم الأطباء بالتبديل بين العربية والفرنسية لتحقيق العديد من الوظائف. خلصت هذه الدراسة إلى أن حواجز اللغة والتبديل بين اللغات هي ظواهر لغوية اجتماعية موجودة في المجال الطبي في بيئات الرعاية الصحية الجزائرية بشكل عام وفي بيئات الرعاية الصحية الريفية بشكل خاص.

Résumé

Dans le domaine médical, la communication est un élément important de la pratique clinique pour les médecins et les patients afin de fournir des soins médicaux satisfaisants. Une mauvaise interaction peut conduire à un diagnostic inexact. L'objectif principal de cette recherche était d'examiner l'utilisation de la langue dans les contextes de soins de santé ruraux en Algérie et d'examiner les problèmes de communication qui existaient entre les médecins et les patients en raison des facteurs historiques, éducatifs, sociaux et économiques qui ont conduit à des écarts linguistiques parmi les membres de la communauté. De plus, la recherche visait à identifier les principales raisons de l'alternance entre l'arabe algérien et le français parmi les médecins et les patients. Une étude de cas a été menée dans certains cabinets médicaux privés et dans un hôpital public de la vallée de Beni-Snous située à Tlemcen, en Algérie. En s'appuyant sur un certain nombre de sources et d'outils de recherche pour la collecte de données, un questionnaire a été réalisé pour les médecins, un autre pour les patients et une observation des consultations utilisant la prise de notes et l'enregistrement. Les données collectées à partir de ces outils de recherche ont été analysées quantitativement et qualitativement. Les résultats ont révélé que des barrières linguistiques existaient entre les médecins et les patients en raison de la variation dans la maîtrise de la langue française ainsi que de l'utilisation de la terminologie médicale complexe. Ainsi, les médecins alternent entre l'arabe et le français pour accomplir de nombreuses fonctions. Cette étude a conclu que les barrières linguistiques et l'alternance des langues sont des phénomènes sociolinguistiques qui existent dans le domaine médical dans les contextes de soins de santé algériens en général et dans les contextes de soins de santé ruraux en particulier.

Summary

In the medical field, communication is an important component of clinical practice for both doctors and patients to provide a satisfactory medical care. Poor interaction can lead to inaccurate diagnosis. The main objective of this research was to examine language use in the Algerian rural healthcare contexts, and to look into the problems of communication that existed between doctors and patients as a result of historical, educational, social, and economic factors which led to linguistic gaps among members of the community. Also, the research sought to identify the main reasons of alternation between Algerian Arabic and French among doctors and patients. A case study was conducted in some private medical offices and public hospital in 'Beni-Snous' valley which is situated in Tlemcen, Algeria. Relying on a number of sources and research instruments for data collection, a questionnaire was conducted for doctors, another one for patients and consultation observation using note-taking and recording. The data collected from these research tools were analysed quantitatively and qualitatively. The results revealed that language barriers existed between doctors and patients due to variation in French language proficiency as well as the use of complex medical terminology. Thus, doctors code switch between Arabic and French to achieve many functions. This study came to conclusion that language barriers and code switching are sociolinguistic phenomenon that existed in the medical field in Algerian healthcare settings in general and rural healthcare settings in particular. translate to French.