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Vaccine acceptance in parents in Diape (Côte d'Ivoire)

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Introduction

- In subsaharian Africa 60% of deaths are due to infectious diseases
- Every year 2,5 millions of deaths could be avoided in children aged under 5 years by immunization
- However, despite existence of Enhanced Program of Immunization, children are not enough immunized
- In Côte d'Ivoire (Ivory Coast) between 20 to 40 % children are not immunized mainly in rural area

Introduction

- In Diape rural health center in 2016, immunization coverage was inferior to national objective fixed to 95%
- Our research question was : what factors could explain weakness of immunization coverage ?

Objectives

Main objective : identify factors of no or incomplete immunization of children aged from 12 to 23 months in Diape

Secondary objectives :

1) Describe socio- demographic characteristics of mothers of children aged from 12 to 23 months

2) Estimate immunization coverage of children aged from 12 to 23 months

3) Identify knowledge of vaccine preventable diseases

Method

- **Type of survey :** cross sectional survey which aim to describe and explain factors of no or incomplete immunization
- **Place of survey :** Diape sanitary area composed of 3 villages with 12 554 inhabitants and 413 children aged from 12 to 23 months

➔ Sanitary structures :

- 1 rural health center
- 1 private infirmary
- 1 chemistry

Method

Table I : **EPI immunization schedule of children aged from 0 to 11 months in Côte d'Ivoire**

Age	Vaccines (17)	Target diseases (11)
Birth	BCG + Oral Polio Vaccine (OPV)	Tuberculosis + Poliomyelitis
6 weeks	D-T-C-Hepatitis-Hib + OPV + Prevenar 13 + Rotateq	Diphteria - Tetanus Pertussis - Hepatitis B Haemophilus influenzae infection Pneumococcal infection Rotavirus diarrhea
10 weeks	D-T-C-Hepatitis-Hib + OPV + Prevenar 13 + Rotateq	
14 weeks	D-T-C-Hepatitis-Hib + OPV + Pneumo 13 + Rotateq + Injectable Polio Vaccine (IPV)	
9 months	Measles + Yellow fever	Measles - Yellow fever

Method

- **Survey population :**
  - ➔ Mothers or accompanying of children aged from 12 to 23 months
  - ➔ Children aged from 12 to 23 months
- **Sampling** : we used cluster sampling method of WHO composed of 30 clusters of 7 children (clusters consisting in household)
- **Collect of data** : interview with mothers were conducted with a questionnaire and all informations on children vaccines were obtained with immunization card

Method

- **Ethic :**
  - ➔ We obtain verbal consent of mothers
  - ➔ Data were analysed in the respect of anonymity

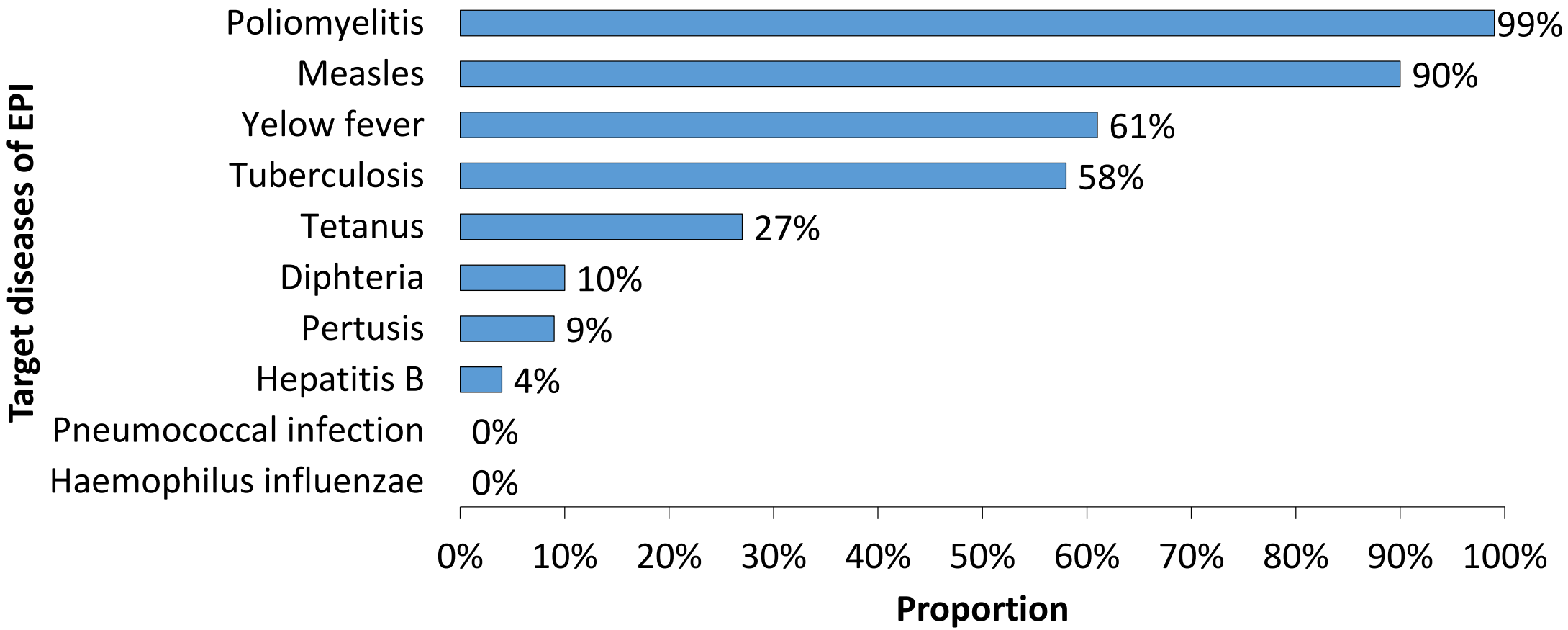
- **Statistic analysis :**
  - ➔ Data treatment and analyse was done with Epi Info
  - ➔ Chi square test was used for comparison, with probability $p < 0,05$

Results : socio-demographic characteristics

Mothers (n= 210) :

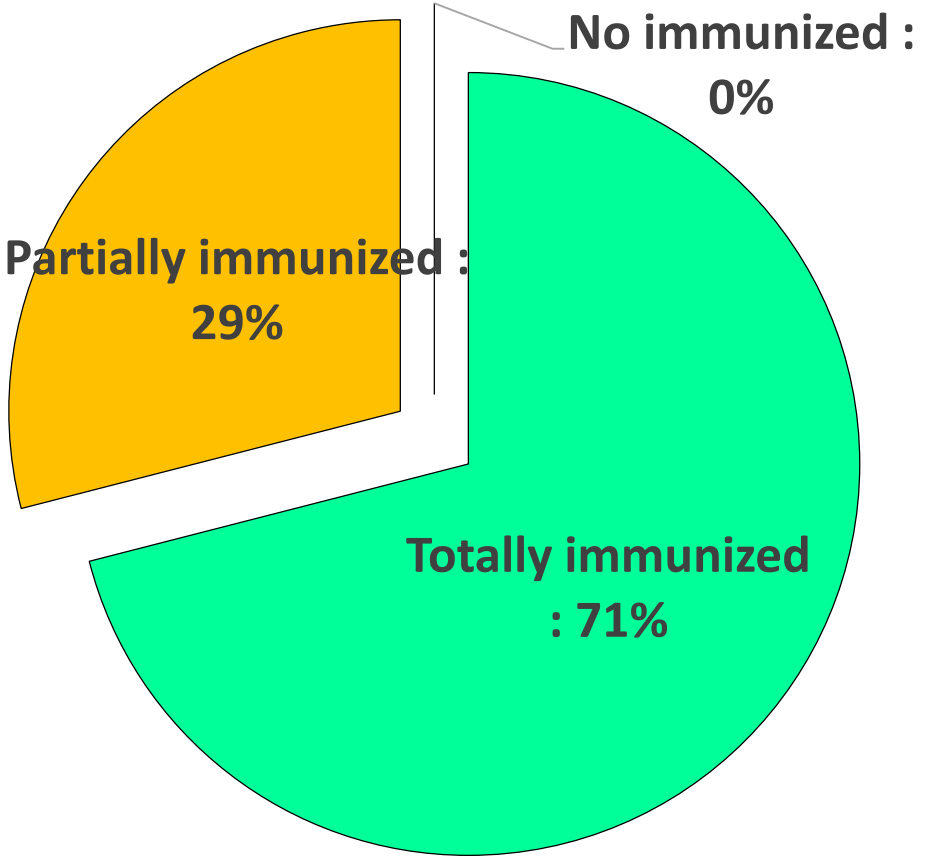
- 70% were aged from 15 to 30 years
- 70% were married and 22% had more than 4 children
- 70% were housewifes
- 75% among them were christians
- 49% had primary educational level and 32.4% had no educational level

Results : knowledge of vaccine preventable diseases



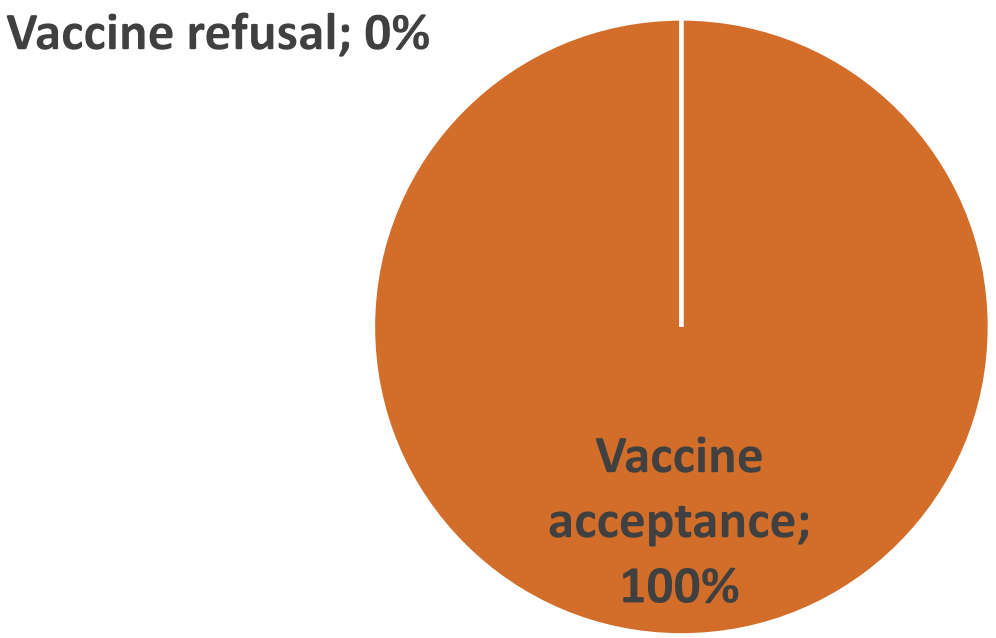
Graphique 1 : **Distribution of mothers of children aged from 12 to 23 months according to knowledge of diseases targeted by EPI (n = 210)**

Results :Immunization status of children aged 12-23



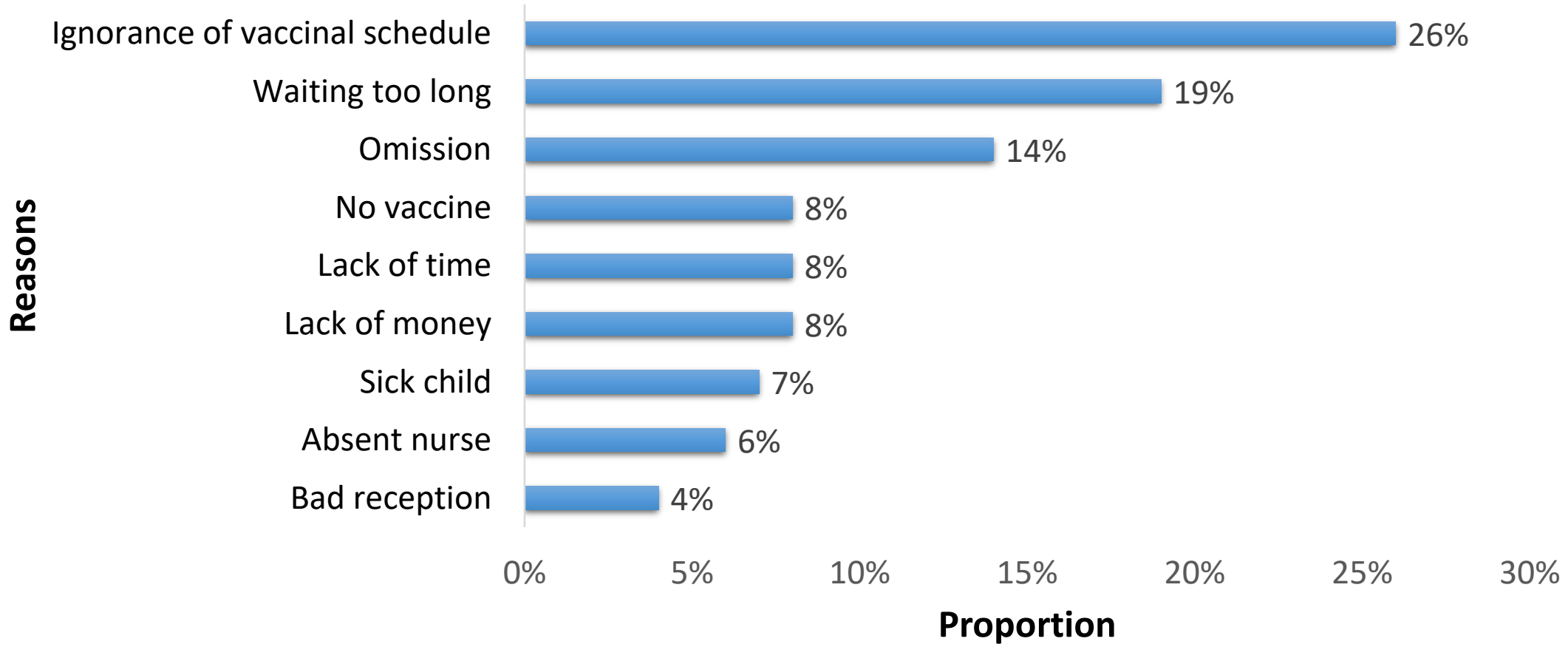
Graphique 2 : **Distribution of mothers of children aged from 12 to 23 months according to vaccinal status (n = 210)**

Results : vaccine acceptance



Graphique 3 : **Distribution of mothers of children aged from 12 to 23 months according to vaccine acceptance (n = 210)**

Results : reasons for incomplete immunization



Graphique 4 : **Distribution of mothers of children aged from 12 to 23 months according to reasons for no or incompete immunization (n = 210)**

Results : factors linked to incomplete immunization

Table II : **Distribution of mothers of children aged from 12 to 23 months according to immunization status and their religion (n = 210).**

Religion of mother	Partially immunized	Totally immunized	Total	p	OR
Animist	12	6	18	10^{-3}	5,8 IC [2,3-14,9]
Christian/Muslim	49	143	192		
TOTAL	61	149	210		

Immunization status was significantly associated with religion of mothers. Christians or muslims mothers have children more immunized than others.

Results : factors linked to incomplete immunization

Table III: **Distribution of mothers of children aged from 12 to 23 months according to vaccinal status and number of children (n = 210).**

Number of children	Partially immunized	Totally immunized	TOTAL	p	OR
4 and more	20	25	45	0,01	2,4 IC [1,2 ; 4,7]
1-3	41	124	165		
TOTAL	61	149	210		

Vaccinal status was significantly associated with number of children. Proportion of immunized children was higher in mothers with less than 4 children.

Results : factors linked to incomplete immunization

Table IV: **Distribution of mothers of children aged from 12 to 23 months according to the knowledge of EPI targeted diseases (n = 210).**

Level of knowledge	Partially immunized	Totally immunized	TOTAL	P	OR
Less than 4 dideases	58	113	39	0,001	6,2 IC [2,1-18,4]
4 diseases and more	3	36	171		
TOTAL	149	61	210		

Immunization status was significantly associated with level of knowledge of mothers. Proportion of totally immunized children was higher in mothers who knew 4 diseases and more.

Results : factors linked to incomplete immunization

Table V: **Distribution of mothers of children aged from 12 to 23 months according to the knowledge of immunization schedule of EPI (n = 210).**

Age of first vaccine	Partially immunized	Completely immunized	Total	p	OR
Others	11	6	193	10^{-3}	5,2 IC [2 - 13,7]
At birth	50	-143	17		
TOTAL	61	149	210		
Age of last vaccine	**Partially immunized**	**Completely immunized**	**Total**	**p**	**OR**
Others	55	62	117	$< 10^{-3}$	12,9 IC [5,9– 28,1]
9 months	6	87	93		
TOTAL	61	149	210		

Immunization status was significantly associated with level of knowledge of immunization schedule. Distribution of children completely immunized was higher in mothers who know immunization schedule of EPI.

Results : factors linked to incomplete immunization

Table VI : **Distribution of mothers of children aged from 12 to 23 months according to immunization status and quality of reception (n = 210).**

Quality of reception	Partially immunized	Completely immunized	TOTAL	p	OR
Insufficient	42	35	77	$< 10^{-3}$	7,2 IC [3,8 - 13,4]
Good-Acceptable	19	114	133		
TOTAL	61	149	210		

Proportion of children completely immunized was higher in mothers who talked about good or acceptable quality of reception.

Conclusion

- 29% of children were not completely immunized
- No immunization refusal were notified
- Strengthen maternal awareness-raising activities on diseases, immunization schedule and improve quality of reception
- Other surveys are needed to have better knowledge on no or incomplete immunization

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Thank you for attention