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The Perception of Population and Health Professionals regarding the National Immunization Program of Timor-Leste

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Abstract

The 2017 National Immunization Program (NIP) provide vaccination against tuberculosis, diphtheria, tetanus, polio, pertussis, hepatitis B, invasive *Haemophilus influenzae* serotype b disease, measles, rubella and human papillomavirus infections. The Timorese health system is faced with the search for a model of the National Health Strategic Plan (NHSP 2011-2030) work plan for its health system, which is adequate to the current and future needs of its population. In addition to preventing these deadly diseases, vaccination of newborns and expectant mothers, integrated into programs such as Timor-Leste Expanded Vaccination Program (EVP). The overall objective of study characterizes the perception of the population and health professionals about the NIP under of this investigation.

Methods: This is a cross-sectional and mixed-methodological study of qualitative and quantitative descriptive type of methods, including observations, closed interviews and focus group discussion (FGD). A study population was carried out amongst people between the ages of 18-25, 26-35 and 36-45 years old of whom came to the health centers, health post level and hospitals in municipalities, to accompany their infants and children for vaccine, in accordance with the current vaccination schedule.

Results: In the quantitative questionnaires were interviewed (n=212:54%) of Timorese population and health professionals (n=185:46%) total (n=395:100%). The chi-square value 12.401 (p value=0.05) of populations and 75.751 (p value=0.5) of health professionals. Indeed, there was no-significant difference. Using regression multivariate of Hosmer and Lemeshow test, it was found that in both models all has a correlation with the scale greater than 0.2 value. However, we summarized and verified that those models were significantly valid

because, under rate of a correlation's significance value 0.5.

Conclusion: The results presented would contribute to the development of strategic planning and action of health administration and management policies, especially in the promotion of vaccination in the Timorese community. Policies that reflecting the characteristics and needs consequently for the well-being of the population. Population in general and particular the mother of infants and children of 0 year of age can be protected from infectious diseases.

Keywords: National immunization programme; Perceptions; Vaccination; Health professionals and improve health service

Introduction

National Immunization Program (NIP) is a universal program, free and accessible to all people around the world including people who are living in Timor-Leste. It is one of the largest interventions of public health system in today's era, and has contributed to the reduction of infectious diseases globally [1]. Timor-Leste in particular the immunization program has also contributed to the reduction of infectious diseases, both in rural and urban areas in recent years [2].

It is a small island country, which covering half of the island of Timor and it occupies an area approximately 14.610 square kilometers. With 12 municipalities, 1 Special Administration Region of Oecussi Ambeno (Acronym: RAEOA=Regiao de Administracao Especial de Oecussi Ambeno) 65 Administrative Posts or Sub-districts, and 442 villages (parish or sucos).

According to, 2010 census Timor-Leste has 1.066.582 inhabitants (of which 541.147 men and 525.435 women) a population density of approximately 71 inhabitants per km² and population growth of 2.41%, and the growth is considered faster than expected [3]. The three most populous municipalities are Dili, Baucau and Ermera, they represent 43%

of the country's population and the other less populous municipalities are, Manatuto Aileu and Manufahi which represents only 13% of the population.

The benefits of the vaccination from the epidemiological evidence indicates that, it has contributed to the reduction of infant mortality rate, improving health conditions, and averted more than millions of deaths [4].

The development of new safe vaccines and efficacies for the implementation and prevention of infectious diseases are globally associated with high speed reduction diseases in mortality and morbidity a one of the most important aspect in the implementation of health technology [5].

Vaccines are administrated according to the national calendar by the Ministry of Health of Timor-Leste (WHO & UNICEF). The storage and transport of vaccines have been in accordance with the rules of the cold chain, with appropriate refrigeration situations, from the factory where the vaccine produces up to place that is implementation in the community.

The ultimate objective of the cold chain is to ensure that all vaccines always administer their initial characteristics, and in order to confer immunity to the minimized children. An appropriate basic health structure of the population is essential that favor development in the process of conservation and maintenance of vaccines and consequently, the effective results of the NIP.

Timor-Leste faces enormous development challenges linked to historical, cultural, demographic, economic and social factors. Based on existing health information as the difference between projected and observed this is a real condition. Positioning the study of the relations between the NIP and the perception of the population at a still embryonic phase, the research of this theme becomes potentially relevant to the situation of Timor-Leste as a generator of knowledge for academics and health professionals.

However, problems remain in the most remote areas, which are difficult to access, and the problems even get more worst in the rainy season. Furthermore, we must bear in mind that efficacy and safety depend on transport conditions and the existence of the cold chain, ensuring the conservation of vaccines, so that they are administrated under the required conditions.

The general objective of this study is to characterize the perception of the population and health professionals about the NIP in Timor-Leste. It is essential to reduce or eliminate diseases that can be prevented through vaccines which in the benefit on the populations and added substantial value in terms of providing health care. The specific objectives are three important points.

- To importuned the population's knowledge of the vaccination of the Timor-Leste NIP.
- To characterize the knowledge of health professionals in NIP of the Timor-Leste.
- To reassess the needs of knowledge and understand the circuit of vaccine, from the process of administration of the

reception of distribution and storage of vaccines by the various health entities.

The present study intended to research problem based on this context of interaction analysis, the NIP and the health system in the population perception, the central issue of this investigation as intended to answer the following questions:

- To what extent is the perception of the population in regards to vaccine implementation.
- Is the dissemination of information regarding the NIP to the population of Timor-Leste adequate?

Research Methodology

This study is characterized as a quantitative descriptive based on primary data collections through questionnaires that have been sent to two study groups, such as health professionals and population in 7 Municipalities and the Special Administration Region of Oecussi Ambeno. The questionnaires are validated by the researcher with the acknowledgement of the supervisor of the scientific research National School of Public Health Lisbon, Portugal and local supervisor of scientific research of Post-Graduated of National University of Timor-Leste.

Firstly, the author conducted a pre-test in order to illustrate how it is meant to be the groups. The group of health professionals was in Baucau, while the group of population was in Ermera Municipality. In terms of administration Procedures, it was prepared and sent by the researcher to his assistants in 8 location of studies to support the distribution and collection of the questionnaires on the ground and sending them back to the investigator.

Total sampling of this study was 395, they were conducted by using structural checklist, from and experienced and well trainee observer during vaccination gathering. Observations focused on characteristics, types of antigens and vaccines offered, potential missed opportunities, health professionals counseling, and vaccinations techniques.

Closed interviews were conducted 68 sampling with health professional on duty and 12 head of community health centers by random selection at each site by researcher to study their perspectives on communication and interactions with health professionals. The investigator conducted up to 6 exit interviews with more randomly selected sample as they were leaving observation site.

It took place at 25 sites (15 CHCs, 4 Health Post, 2 Private clinics and 4 hospitals). 15 CHCs were randomly selected, six of each from high, medium and low vaccination coverage's. We observed either up to 40 vaccinated children whoever comes first. In addition, we conducted interviews with 10 community leaders or village chiefs and they were also randomly selected from each group of villages with poor, sufficient, and good immunization coverage's.

In focus group discussion were participated by parents of children ages 4 up to 24 months. To determine the eligibility, we screened children's vaccines type and status by

collaborated with structured questionnaires and classified them into 3 groups:

- No vaccinations: Child had no vaccinations at all.
- Full vaccinated: Child had all of the vaccinations that were eligible for their ages.
- Partially vaccinated: Child had some, but not all of vaccinations that were eligible for their ages. Moreover, focus group discussion participant from 10 village randomly selected from 25 urban villages were segmented by immunization coverage levels, which included 5 from high, 3 medium and 2 low coverage categories.

Thus, the cross-sectional, mixed-methodology study was conducted in March until April 2019, in combination of qualitative and quantitative descriptive methods, including observations, closed interviews and FGD.

Procedures of interview for both health professionals and community leaders were conducted by using semi structured questionnaires, but with different context for each of respondents, yet it stills related to their understanding, level of knowledge, and suggestions on how NIP can be improved, and their role in vaccination activities.

While, focus groups discussion are between 6 up to 14 samples and it took 1 to 2 hours of discussion. All discussions are related to perceptions of NIP, their experiences with vaccination and suggestions on how vaccination services delivery can be implemented. In strengthening this investigation, the author will use and applied literature review for a quantitative descriptive, qualitative or choice approach for justified field work of investigation. These two parts of research work, will present a description of methodology use for empirical approach to the analysis.

Data analysis

Collected data and introduction in database by statistical processing, where each group was assigned differently, but it is still linked or correspond to the table of population and health professional data. Data is processed with SPSS 20 (SPSS Inc. Chicago, Illinois, USA).

Quantitative analysis by summary of observation and close interviews into Microsoft excel and conducted simple descriptive analysis, chi-square test and regression multivariate with Hosmer and Lemeshow test.

Table 2: Distribution of Timor-Leste health professionals under this study.

Variables	Number (n=185) and percentages (%)
Age	% Percentages
18-25	(n=4), 2.2%
26-35	(n=42), 22.7%
36-45	(n=54), 29.2%
46-65	(n=85), 45.9%
Sex	% Percentages

Qualitative data collected through close interviews and focus group discussion. It was transcribed and analyzed by manual coding system. Data analysis process followed by sequence steps such as: reading, coding, displaying, summary and result interpretation.

Results

Result of questionnaires that have been collected, described a different data and types of respondents of two study groups from various health institution will be presented in the following table (**Table 1**).

Table 1: The results of data of two groups of studies from various health institutions in 8 municipalities.

Municipalities (n=8)	Health professionals and percentages (n=185)	Population (n=212) and percentages
Aileu	(n= 20, 10.8%)	(n= 21, 9.9%)
Baucau	(n= 27, 14.6%)	(n= 31, 14.6%)
Dili	(n=33, 17.8%)	(n= 40, 18.9%)
Ermera	(n=27, 14.6%)	(n= 31, 14.6%)
Manatuto	(n= 19, 10.3%)	(n= 22, 10.4%)
Manufahi/Same	(n= 20, 10.8%)	(n= 22, 10.4%)
Lautem/Lospalos	(n= 20, 10.8%)	(n= 22, 10.4%)
SAROA/RAEOA	(n= 19, 10.3%)	(n= 24, 11.3%)

The distribution number of the health professionals for the three municipalities such as; Aileu, Manufahi and Lautem are the same (n=20:10.8%). While, Manatuto and Special Administration Region of Oecussi Ambeno are considered the least (n=19:10.3%). The highest number of health professionals is in Dili municipality (n=33:17.8%) because, it has the highest number of populations (n=40:18.9%).

While, Aileu is the least populated municipality that is (n=21: 9.9). The characterization of the population and the health professionals will be shown separately in the following table (**Table 2**).

Male	(n=80), 43.2%
Female	(n=105), 56.8%
Profession	% Percentages
Medical doctor	(n=59), 31.9%
Nurse	(n=71), 38.4%
Midwife	(n=55), 29.7%
Work experiences (years)	% Percentages
1 -5	(n=19), 10.3%
6 -10	(n=45), 24.3%
11- 15	(n=82), 44.3%
< 16	(n=39), 21.1%
Level of education (degree)	% Percentages
Undergraduate Dip.III	(n=66), 35.7%
Bachelor	(n=97), 52.4%
Postgraduate (Coursework)	(n=17), 9.2%
Master	(n=5), 2.7%

Table 3: Distribution of Timor-Leste population under study.

Variables	Number (n =212) and percentages (%)
Ages	% Percentages
18-25	(n=12), 5.7%
26-35	(n=80), 37.7%
36-45	(n=64), 30.2%
46-65	(n=56), 26.4%
Sex	% Percentages
Male	(n=77), 36.3%
Female	(n=135), 63.7%
Level of education	% Percentages
Basic education of 9 years of school	(n=48), 22.6%
Senior High School	(n=80), 37.7%
Technical professional school	(n=24), 11.3%
Bachelor degree	(n=60), 28.3%

Age is an important aspect and conditioned by which the author able to measure the working experiences of each health professionals and population group that is being subject to this research. With regard to the age of the group of population it was justified that the older age (n=56:26.4%) of the respondents and the youngest represents (n=12:5.7%) of the respondents.

In the group of health professionals, it showed that the oldest age represents (n=85:45.7%) of respondents while the

youngest represents (n=4:2.4%) of respondents. Age has been considered as dependent variable of the two groups.

With regards to gender, it is certified that majority of health professionals' respondents are female with 55.7%, and male is only 44.3% respondents. However, these two have no significant difference in the results. As for the working experiences, the results had shown that 44.3% of respondents have had worked experiences more than 11 to 15 years in their respective areas, while those who have had worked experiences only 6 to 10 years representing 24.3% of the respondents, and those who had worked experiences from 16 years above represents 21.1%. The rest are under the category of 1-5 years of working experiences which represents 10.3%, as illustrated in **Table 3**.

With regards to the level of education of health professionals those who have Undergraduate (n=66:35, 7%), Bachelor degree (n=97:52, 4%), Postgraduate by coursework (n=17:9, 2%) and Master degree (n=5:2, 7%).

Table 4: Comparison of Chi-square test in two study groups.

Coefficient models	Chi-square	Differentiation	Significantly
Health professionals (212)	75.751	22	000 p value (0.5)
Populations (185)	12.401	14	547 p value (0.05)

On one hand, the result of research, shows that the majority of respondents from the group of populations are female (n=135:63.7%) and male are (n=77:36.3%) of respondents. While, in regards to the level of basic education of nine (9) years of schooling (n=48:22.6%) of respondents, while, highest

number of respondents are in senior high school, (n=80:37.7%) of respondents. And the lowest of respondents are those who in technical and professional education which represents (n=24:11.3%) of respondents, and those of respondents who are having Bachelor degree represents (n=60:28.3%) of respondents (**Table 4**).

An analysis of coefficient models in two study groups. It was verified whether internal consistency could be considered with chi-square 12.401 in populations model, differentiation is 14 and meaning is 574, while prediction of value is 0.05. The model of health professionals with chi-square 75.751, with differentiation 22 and meaning is 000, from equation.067 prediction of non-significant value at 0.5.

Two models that present weak internal consistency, namely model number 1 of health professional in the orientation for change. Giving that the value is less than <0.1, minimum

considerate acceptable. The difference analysis between two models reveals that there were no significant differences ($p>0.05$) between them. According to, experts Hosmer and Lemeshow choose not to be eliminated from model group, but to be considered by looking at subsequent analysis to verified whether there are other more relevant differences between the models with regard to this important factor (**Tables 5 and 6**).

Analyses of regression multivariate with consistency internal were verified with two models of health professionals by similarity log-2 value 177.325^a and the population similarity log-2 265.421^a. We utilized R quadrate Cox & Snell value 0.336 and R quadrate Negelkerke 0.451, in meaning there are still needed to proceed with Hosmer and Lemeshow to prove significances of validity.

Table 5: Analyse regression multivariate of Hosmer and Lemeshow test.

Models	Similarity log-2	R quadrate Cox & Snell	R quadrate Negelkerke
Health professionals	177 n.325 ^a	0.336	0.451
Populations	265.421 ^a	0.057	0.078

Table 6: Test Hosmer and Lemeshow.

Step	Chi-quadrate	Df	Sig.
Health professionals	9.728	8	0.285
Populations	10.91	8	0.207

Chi-quadrate value of health professionals showed 9.728 with significance 0.285 and populations chi quadrate value 10.910 with significance 0.207 and we summarized and verified that those models were significant valid because, underrate of a correlation's significance value 0.5. However, it was found that in both models all have a correlation with the scale greater than 0.2 value.

Focus groups are an investigation technique that allows the author to obtain information of a qualitative nature from the realization of discussion sessions with groups of participants who have common characteristics. The focus group technique allows the identification and collection of opinions that reflect the group, in a relatively short period of time, from one and a half to two hours.

The focus group involves a small number of people, with specific characteristics from (6 to 15 people although this criterion is not rigid), to discuss a specific topic that is proposed to them by the moderator. Health professionals group takes place in Baucau with 15 people and the population in Ermera with 29 people. The main objective of the focus group discussion is to explore their personal experiences, beliefs, attitudes and feelings underlying a given behavior. These techniques are considered very useful to understand the concepts, vocabulary and thinking patterns of a specific population and health professionals inserted in a social context.

The role of the moderator is to create a condition of empathy and know how to elevate the participant's confidence, either in himself, in order to achieve the final outcomes. It is essential to be a facilitator of the process, and keeping the discussion on the schedule, and getting everyone on the topic when necessary, in order to obtain the greatest possible quantity and quality of information required. The moderation in this study was performed by the researcher, after obtaining an informed consent.

The choice of a warm, comfortable and an attractive environment for active participation is essential for the discussion technique. The discussion was held in a place of familiarity to the participant (such as communal meeting room in of old health center of Baucau) for health professionals, where everyone feels comfortable in expressing what they think and feel freely. While, the studying od population groups was held at the health center of the municipality of Ermera applied the same principle and let them feel comfortable to throw out everything that they think and feel about the NIP in the country.

Discussion

From the discussions that were conducted, it illustrates that the Perception of the Population and Health Professionals who are part of this studies demonstrated that the NIP of Timor-Leste had been well implemented in seven (7) municipalities and the Special Administration Region of Oecussi Ambeno as has illustrated in the **Table 1**.

Apart from the perception of population and health professional stated above, the studied also evaluated the coverage rates of vaccines in the country, and the results from the Ministry of Health in 2018, indicated that the coverage in

the western part of the country or the special administrative region of Oecussi, Ambeno is less than 60% and from eastern side which is in Lautem the coverage's is 49.8% or around 50% if we rounded them up [6].

This is, indicated that, despite, vaccination is significant to our health, yet, there are still many hurdles that hindered such coverage's to reach 100% of its implementation. Why, it is still considered low coverage is because of, the data that the author collected from the sample involved in this study indicated and research that have been published by Amin and Brown, (2013) elucidated that poor immunization coverage is related to multiple issues such as social and economic issues, demography, geography, culture and knowledge about the issue, including inconsistent and irregular immunization sessions from health professionals.

Furthermore, stated that in spite of vaccines are valuable and cost-effective means to preventing infectious disease and improving public well-being, yet, many people are still not accessed to vaccination, and it is due to race and ethnicity and geography factor. It is therefore, the author of this article concluded that to ensure the vaccination program to reach out to the whole population of Timor-Leste, it is required a good will of all stakeholders in this case the government to include all activities related to health sector in the annual action plan [7].

With, such moves Timor-Leste and particular the Ministry of Health will be able to accomplish its strategic objective that has been described in the country National Strategic Development Plan 2011-2030 where the Government is expected "to improve, expand and maintain the quality of coverage of preventive infectious disease to newborns and reduce infant mortality in the country" [8].

To do that, it will need to have an inclusive health policy, improving the capacity of health scheme in order to provision the delivery of cohesive, preventive treatment for newborns, increasing access to the quality of vaccination services, as well as improving the referral system in order to better respond to infants health needs.

As Nowak GL, et al. emphasized that, immunization is considered one of the most effective public health accomplishments, principally with respect to preventing illness in newborns and children. Hence, the hospital should be stand out in the practices of improving the quality commitment and support in administration and management, employment training and development, participation and more of customer focus [9].

The analysis of qualitative data allows us to believe in greater proximity between the elements of clinical management and nursing management and a more active and integrated involvement in the quality system of all hospital care services including vaccination programs. Thus, as an effective and efficient communication between the management bodies and the operational level and their involvement in the quality system, generating active encouragement to development, which is reinforced by the intensity of cultural dimensions in the orientation to continue

improvement in communication, motivation and active participation on the NIP.

As, Nowak GJ also pointed out in their articles that to achieve a success has to do it through campaign and communication and it is a fundamental tool to improve people perception of the value of vaccination. Without good communication methods, we will have more people in Timor-Leste have no access to vaccination. If you look from, the results showed that some families in rural areas of municipalities still lack of information about the NIP in Timor-Leste. This phenomena, has also been published, in Amin and Brown, in their articles that, quality data also highlight that the bet on continuing training is more evident, being recognized as such by the clinical staff, due to the concepts of compulsory and recommended training and behavioral training actions for the groups are usually less eligible for this theme of health professionals [9,10].

Before we look at the analysis of the interpretation data by population perception in the questionnaires, it is important to underline the significance of communication issue for people's adherence to vaccination plans. The key message is transmitted to the population, as well as the responsibility and sincerely that transpires in the relationship between health professionals and community are fundamental to promote communication on the vaccination program that it is well understood [11,12].

In principle, the theoretical framework developed for the title approach is reconstructed of revolutionary importance and allow the theoretical foundation necessary for the operationalization and contextualization of the results achieved at the end of the research. With appropriate data, the constructs in this NIP could be directly represented using latent variables analysis. Future data collection and analysis plans could take opportunity of this conceptual NIP to be more grounded in existing investigation [13].

In light of these studies strengths, a number of limitations remain. There are three reasons why this study may not be considered complete:

1. The author noted that this article only complete within the context of the scientific literature. Any interventions that have systematically overlooked by other investigations will not be present here.
2. The systematic review did not include studies of specific interventions to improve vaccine coverage, just investigations on interventions. Because of this, there is potential for our analyses to include potentially influential information.
3. It is only concluded within a certain degree of proximity to utilization.

One could continue to argue that each intervention has its own preceding interventions and infinitum. While this may be true, it is clearly not the goal of this research to identify the entire interpretation of socioeconomic forces, yet only reasonably proximal interventions were identified. Next, despite going to great lengths to uncover as many relevant articles as possible, it may be that some investigation studies

were simply missed, or inaccurately assessed for relevance title under this study.

Although the good practice for study finales would have been wording-rewording method, with a scientific of articles, were confident that such studies are few. Another potential limitation is that the entire study or research that extracted from (web searches, review, analysis and context) was conducted by a single researcher. While it would have been ideal to reply on multiple reviewers and assessment of inter-rater reliability, that was not feasible for this study [14].

Analyze the interventions being implemented, the key interventions to be added, and existing mechanisms for the provision of services. Seek synergies and links between other programmers and take all necessary measures to ensure that material and product, financing and supervision services are operational. Review existing monitoring systems using selected key indicators to monitor activities.

Analyze and change the registration sheets, data communication systems, and other instruments, data collection and other observations after the activity carried out, by using coordination body to reach consensus on how to further improve, the implementation of joint interventions. A large proportion of attention has focused on preventing diseases in all children, yet vaccinations are now preventing neonatal diseases and deaths, and it portrays that they will be protected in the future [15,16].

After the sessions were held on March 20, 2019 (at the former Baucau Health Center for health professionals) and April 6, 2019 (in the meeting room health center of Ermera municipality with the population groups).The participants discourse was structured in three dimensions: Thematic vaccination, Doubts regarding vaccination, Tactic to increase/maintain adherence to Timor-Leste vaccination.

Overall, to raise the awareness of the population toward NIP we should take geographic, historical, political, socioeconomic, cultural and epidemiological factors and need to understand the implications of this context of population, about the vaccination program. In order to delineate the best strategic responses, thereby bringing value to the populations and a constructive value of the National Health System of Timor-Leste.

This study most important contributions to the understanding the perception of population and health professionals about the National Immunization Program of Timor-Leste. The presented substantial differences in coverage rate of vaccination of 7 municipalities and 1 Special Administration Region of Oecussi Ambeno, geographic patterns, and to characteristics of critical area. The fundamental information use in social communication network, including vaccinations, and other programs, to convey key health messages and maintain the search for neonatal maternal health services, especially in areas where most women given birth at home.

We consider this is be a usefully public resources in its own right, now that a near-complete of studies on going, future

researchers can perform their own qualitative analysis and developing competing conceptual interventions with great ease. Before, the results of the content analysis, researchers can easily look up at other studies that discuss any relevant in particular notes. This study contributes conceptual context of interventions of effective and efficacy coverage of NIP that represents a situation of multiple existing frameworks, is applicable in Timor-Leste, and is quantitatively testable. Future quantitative investigations can use this study to identify appropriate indicators to analyze and to define their theoretical model.

In the quantitative methodology, the main limitation is related to the complexity and scope of the theme, which is why it is impossible to exhaust them in the dimensions of this study, with the questionnaire being carried out in 7municipalities and 1 Special Administration Region of Oecussi Ambeno, with the participation of population groups and health professionals from different countries, have carried out an analytical study.

In the qualitative methodology, the main limitations are related to the group dynamics underlying the focus groups being able to inhibit the individual disclosure of opinions and experiences. Another of the limitations is related to the fact that an intentional sample was used and the sample was composed only by mothers.

Recommendations for future research, given the relevance, on the context and ultimately the importance of overall performance and successful to the perception of population and health professionals of NIP in Timor-Leste. Whether, it is also the rewarding or would to be the operationalization of an article, with a large sampling of the links between the situation of the NIP suggested and comments by the current research. The contribution to the generation of theory maybe also be reinforced with great investment in future research in good recommended vaccination practices, understanding in the scope of data collection tools in this area at all functional levels of the health organization in Timor-Leste.

The results presented contribute to development, strategic planning and action of health administration and management policies, especially the promotion of vaccination in the Timorese community, reflecting their characteristics needs and consequently, for the well-being of the population.

Conclusion

The information obtain from the health population about the immunization are taken for granted. Less coverage on vaccination or discontinuation of immunization in the successive years due to the organization capacity of health services, with the minimum movements of vaccination promotion can have serious consequences. However, with the goodwill and responsibility of health professionals and the support of health managers in the innovation program of health technologies considered to be an opportunity to improve the quality of health services.

Finally, given the nature of the area and the groups involved, another path of investigation could be directed towards the analysis of subsystems that coexist in the same health institution and perceive thus different types of consistent behaviors in each group and its role of influence in the situation of potential institution of generating a dominant culture. It was, aware of this difficult reality, that we have both Timor-Leste and the National Immunization Program, be better in the long run, by bringing together the collection of evidence on the drivers of vaccination. This review lends itself to better investigation in the future, for further understanding of interventions, and greater progress against vaccines preventable diseases around the world.

References

1. Pezzotti P, Bellino S, Prestinaci F, Iacchini S, Lucaroni F, et al. (2018) The impact of immunization programs on 10 vaccine preventable diseases in Italy: 1900-2015. *Vaccine* 36pp: 1435-1443.
2. Ministry of Health (2011) National Health Sector: Strategic Plan 2011-2030.
3. Timor-Leste, Government (2011) Timor-Leste strategic development plan 2011-2030.
4. WHO and UNICEF (2005) Global Immunization Vision and Strategy 2006-2015.
5. Aranda, Morales(2014) Path improving the affordability of inactivated poliovirus vaccine (IPV) for use in long-and middle-income countries. In economic analysis of strategies to reduce the cost finance routine IPV immunization.
6. Public Health England (2013) Immunization against infectious disease: Immunity and how vaccines work: The green book.
7. Public Health Agency of Canadian (2018) Key Element of Perception Population Health Approach.
8. Ransom J, Schaff K, Kan L (2012) Is there an association between local health department organizational and administrative factors and childhood immunization coverage rates? *Journal of Health and Human Services Administration* 34 (4): 418-455.
9. Nowak GJ, Shen AK, Schwartz JL (2017) Using campaigns to improve perceptions of the value of adult vaccination in the United States: Health communication considerations and insights. *Vaccine* 35 pp: 5543-5550.
10. Bonnet MC, Dutta A (2008) World wide experience with inactivated poliovirus vaccine. *Vaccine* 26: 4978-4986.
11. Government of Timor-Leste (2010) 2010 Census results: Timor-Leste's population grows slower than projected.
12. Kennedy A, La Vail K, Nowak G, Basket M, Landry S (2011) Confidence about vaccines in the United States: Understanding parents. *Perceptions Health Affairs* 30 (6): 1151-1159.
13. Mohammed AJ, AlAwaity S, Bawikar S, KurupPJ, Elamir E, et al. (2010) Fractional doses of inactivated poliovirus vaccine in oman. *N Engl J Med* 362 (25): 2351-2359.
14. Poland GA, Jacobson RM (2011) The age-old struggle against the antivaccinationists. *N Engl J Med* 364(2): 97-99.
15. Spier RE (2001) Perception of risks of vaccine adverse events: a historical perspective. *Vaccine* 20:78-84.
16. Shetty P (2010) Experts concerned about vaccination backlash perception. *Lancet* 375: 970-971.