Non-Communicable Diseases (NCD) And Mental Health In The Philippines: Insights From Key Informant Interviews

Francis Gregory R. Samonte[1,2], Ma. Teresa De Guzman[2]

[1] *National Institutes of Health, Institute of Health Policy and Development Studies, Manila Philippines*
[2] *University of the Philippines Manila, Department of Behavioral Sciences, Manila Philippines*

Email: [1]frsamonte1@up.edu.ph

Abstract:
The rapid rise of chronic diseases in the Philippines from non-communicable disease to mental health disorder requires a rebalancing of health care priorities to meet these challenges. Recent statistical modelling studies in the country revealed a strong relationship in the developmental outcome of NCD and mental health. The need to develop strategies aimed at integrating NCD and mental health are important steps towards efficient and effective health care delivery systems particularly in low-income countries. Critical to these changes in health care delivery system is the role of key decision makers in understanding the interrelationship of chronic diseases and areas in public health policy related to governance. A semi-structured key informant interview was conducted, and responses were analyzed using a thematic content technique to determine knowledge and how current health programs are meeting these challenges. The results of the study highlighted areas for future research and public health policy development, while revealing structural and organizational problems. The implication of improving human capital development, governance, and communication gaps between national and local government agencies are vital to addressing these problems.
Keywords: Mental health, non-communicable diseases, health policy, governance, human capital development

1. INTRODUCTION

Lifestyle related diseases in developing countries has been an important factor in the rise of chronic diseases (***Popkin B, 2006; Samonte FG 2017***). Non-communicable diseases and mental health disorders are among the most common forms of chronic diseases that continues to overwhelm health care infrastructure in developing countries. The burden of chronic disease is a key impediment to sustainable development and improved health care outcomes. Comparative studies in the Philippines revealed similar trajectories that highlights NCD and mental health as the most important causes of chronic diseases in the years to come.
Epidemiologic studies have showed significant association between cardiovascular disease, diabetes, and mental health. For instance, recent population level analysis (***Samonte F, 2020***) in the Philippines revealed a robust association of mental health with non-communicable diseases. Using predictive modelling analysis, the 15-year data implicated the central role of diabetes as a key intermediate between dementia and depression prior to the developmental outcome of cardiovascular diseases. Furthermore, the study also suggests an assessment of the health care system in the country by determining the quality of knowledge and practices

even while emphasizing the critical role of health care managers and key decision makers in this process.
Even with the best available resources many of these countries remain mired from continuative health policy directives and health promotion programs that often underperform and underachieve its intended outcome (***Freiden TR, 2014***). Various reasons have been implicated as the cause of these failures, including policy framework (***Braithwaite J, 2018***), design (***Hudson B, 2019; Cairney P, 2016***), implementation (***Ansell C, 2017; May P, 2015***), and governance (***Greiner AC, 2003***). Inefficient resource allocation, ineffective utilization of limited resources, and lack of technical competency (***Brandeau M, 2005***) are chronic, intractable problems that hinder improvement in health.
The expected increase of chronic diseases has led to calls for policy redesigned and adjustment (***WHO, 2015***) that looks into the integration of NCD and mental health services in a unified approach to ensure improved efficiency and effectiveness in health care delivery. To address this problem, the World Health Organization's mental health action plan for 2013-2020 (***WHO, 2013***) emphasizes a redesigned policy by incorporating mental health with non-communicable diseases to reduce and mitigate the spread of chronic diseases (***Stein DJ, 2019; Ramanuj PP, 2018***). This strategy aims to improve health delivery through an efficient framework, while designed to provide health managers and decision makers with additional tools in carrying out programs. Indeed, the role of key decision makers serves a primary function in ensuring the success or failure of health programs. Fund knowledge, training, and managing resources are some of the proficiency skills that are expected from decision makers to carry out their function.
The objective of this study was to qualitatively assess knowledge and practices of key informants by conducting semi-structured interviews. Questions that have been developed were based on systematic review on health outcomes and governance studies. The interviews were not only aimed to explore current national health policy implications but to determine their insights on the policy integration of mental health and non-communicable diseases. In addition, the interviews will serve to elucidate the various challenges and obstacles related to improving healthcare systems in the country.

2. METHODOLOGY:

I. Interview / Questions

The interview with the key informants were conducted from February to September 2020. Due to the state of covid-19 pandemic, all the interviews were conducted via video, web conferencing. Questions have been developed prior to the interview focusing on the key objectives of the study. The questions were developed and previously validated (***Nicholson C, Jackson C., et al. 2013; Fowler, 2014; Kelley K & Clark B., et al. 2003***) for similar qualitative data gathering process. A pilot survey of the questionnaire was initially conducted to obtain and analyze the results and strength of the questions. This was to ensure a logistical, technical process to address other issues or problems.
The questions focused on the following: (1) Describe the current national health policy strategy in addressing the problems of non-communicable diseases (NCD) and mental health disorders. (2) What are the challenges in health care delivery which have significantly affected the NCD/mental health program? (3) How will an integrated approach in managing NCD and mental health affect the health care system? What other issues might you consider to be important on the management of chronic diseases?

II. Key Informants

There were five (5) key informants (Table 1) who participated. The study participants are key experts drawn from institutions and organizations involved in current national or regional health programs with specific focus on non-communicable diseases and/or mental health and

related disorders. Determination of key decision makers were based on their expertise in the related topic of research focus, research output, and policy-making capacities.

Table 1: Interview Participants

Key Informant	**Position**
Dr. 1	Academic Dean in Public Health
Dr. 2	UN-WHO Regional Program Director
Dr. 3	Local Government Municipal Health Officer
Dr. 4	Hospital Program Administrator/Director
Dr. 5	Executive Government Provincial Health Director

III. Analysis

The key findings that emerged from the interviews conducted with five health professionals regarding the current state of implementation of non-communicable diseases and mental health programs in Philippines was analyzed. The audio data collected from the interviews was transcribed verbatim. Computer-assisted qualitative data analysis software (CAQDAS) was used to help minimize the confirmation bias given the subjectivity of qualitative analyses. More specifically, the researcher made use of QSR NVivo v1.3. Since the study was a phenomenological inquiry that sought to explore the lived experiences regarding integrated health systems in the management of non-communicable diseases (NCD) and mental health, qualitative content analysis was performed. Both the conventional content analysis approach and directed content analysis approach were used, with the former entailing the derivation of codes from the data while the latter approach entailed the derivation of codes from the extant literature (***Bernard, 2013***; ***Flick, 2018***). The first stage of the coding process was open coding through which child nodes were extracted from the data in their raw form as prescribed by Saldaña (2015) and Thorne (2016). Axial coding was then carried out and this involved the classification of codes into tree nodes based on their relationships and commonalities (***Yin, 2018***). Lastly, selective coding was performed using a context-specific inclusion and exclusion criteria to filter out aspects beyond the scope of the study.

3. RESULTS:

The results are presented in three key sections: (I) assessment of the participants; and (II,III) presents the findings from each of the research objectives, including the themes and sub-themes that emerged from the data collected.

I. Participant Profiles

Qualitative studies are known to be subjective in nature. This alone presents challenges to the trustworthiness of the findings. However, with a view to ensuring that the trustworthiness aspect would be guaranteed, two strategies were used. Firstly, the researcher purposively selected participants who had ample experience in the management of non-communicable diseases (NCD) and mental health (Tisdell and Merriam, 2015). It was in this light that the five participants were purposively selected to be part of the research study based on their exposure to and active senior roles in in the management of non-communicable diseases and mental health. Such an approach, according to Marshall and Rossman (2014) along with Tisdell and Merriam (2015) ensured that the study findings would be anchored on well-informed trustworthy sources thereby firming up the credibility of the findings. For ethical reasons, pseudonyms were used in their identification and these are labelled Dr. 1, 2, 3, 4 and 5 respectively. The resultant classification map is illustrated in (Figure 1) and this summarizes the distribution of the respondents by gender and affiliation.

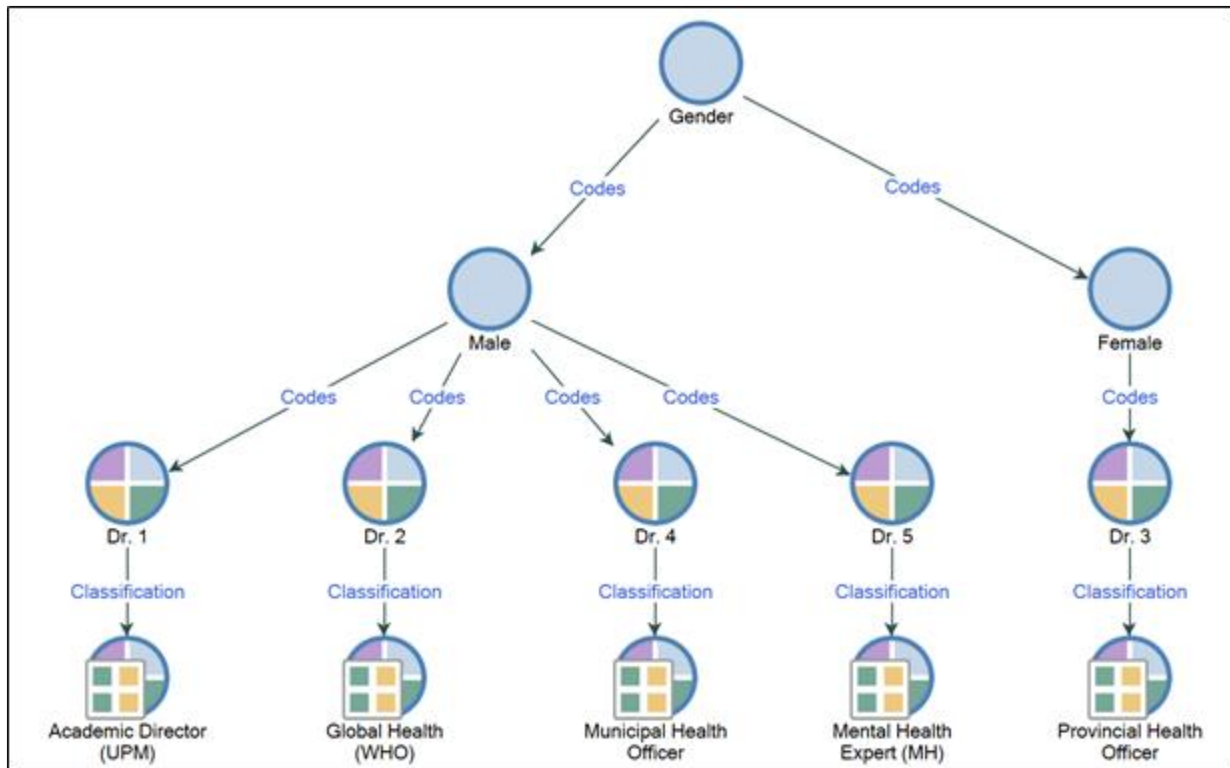

Figure 1: Demographic Profile of Participants

The second approach used to ensure the trustworthiness of the results was to evaluate their input for potential bias as recommended by Miles, Huberman and Saldaña (2014). To achieve this, cluster analysis of sources by was carried out in NVivo using the Sørensen–Dice similarity coefficient. According to Thorne (2016), the Sørensen–Dice similarity coefficient together with the Jaccard coefficient compare the source files and determine the proportion of the similar words and synonyms. To achieve this, all the function words such as the articles, auxiliary verbs, conjunctions, prepositions, qualifiers and question words are excluded (e.g. the, while, on, but). Only content words are used, and these are words with lexical meaning. The Sørensen–Dice similarity coefficient is determined from the number of similar content words and phrases and this is divided by the total number of words. The corresponding cluster dendrogram is presented in Figure 2.

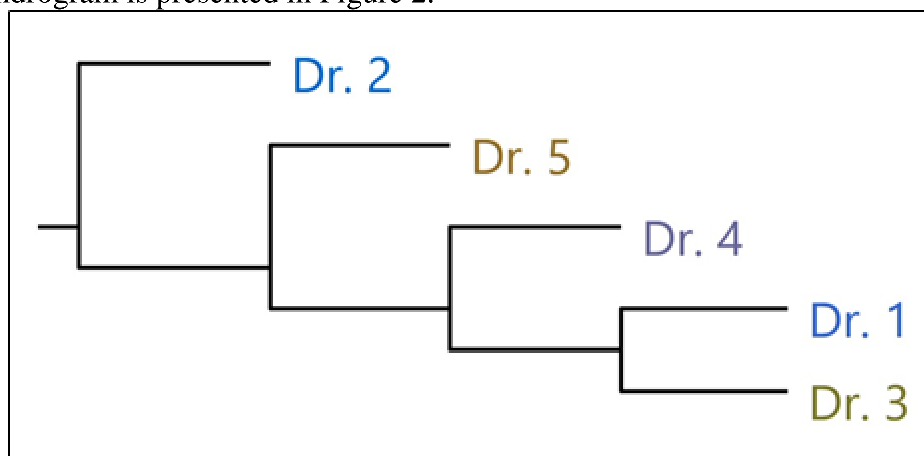

Figure 2: Cluster Dendrogram - Interview Similarity Index

From the findings above, the feedback from the interview participants were broadly clustered into two main dendrogram branches, suggesting a moderate polarization of views. The major discrepancy was found with Dr. 2, who from the evaluation of sources, did not contribute much. However, the rest of the doctors were clustered together, with input from Dr. 5 being

having a strong parallelism with the issues that emerged from the other Drs 1, 3 and 4. Further evaluation of the input by Dr. 2 was done and it was established that Dr.2 was flagged because of the very limited input from the interviewed as supported by the file summary in Table 2 below. None of the participants was excluded from the analysis.

	Words	**Number of Nodes Coding**	**# of Text References**
Dr. 1	3603	11	15
Dr. 2	1681	6	9
Dr. 3	3966	17	26
Dr. 4	2114	16	21
Dr. 5	6784	19	23

Table 2: File Summary

II. Question 1: Differences in the Level of Knowledge regarding NCD and MH.

The first research objective sought to determine whether there were any differences in the level of knowledge between the key decision makers when it comes to non-communicable diseases (NCD) and mental health. The first indication of the magnitude of the knowledge differences was noted by Dr. 4 who noted that there were significant disparities in the implementations of non-communicable disease and mental health policies and programs from the national level right up to municipal level.

- **Dr. 4:** *When there's something from the national level* ***when it reaches the municipal, it differs.*** *Or sometimes the national said something, but the LGU contradicts so* ***different things will be implemented****. So, I guess there* ***are discrepancies and that's an enormous challenge****.*

These incongruities in the implementation of NCD and mental health policies revealed the varying levels of knowledge on health practices and serves an important factor towards the lack of effective and efficient health system policies to manage non-communicable disease and mental health problems in the country. In addition, there was an overall decrease knowledge among the Local Government Units (LGU, municipal level) that investigates an integrated approach to NCDs and mental health. Moreover, the LGUs lacked guidance from the national Department of Health (DOH) on the best practices:

- **Dr. 1:** *When you go to the LGUs,* ***it's only one team doing it****. So, therefore,* ***the LGUs will need guidance along the lines of how to integrate appropriately****, but it cannot be done. It cannot be modeled easily if central office cannot demonstrate this. So, there is a huge challenge, therefore, for central office to demonstrate the integrated approach to NCDs and mental health.*

Further, it also emerged from the findings that the major bottleneck was the political will among the policy makers and politicians. This was expressed by Dr. 1 who cited:

- **Dr. 1:** *There's also politics and in the Philippines [public health] is so* ***politicized****... So, you cannot deny the fact that* ***public health in the Philippines is so politicized*** *and* ***it is one reason why we have not moved forward in a major way****. Therefore, we really affected by the politicization of health. Of course, that's a very complicated thing, let's say, subject for debate. .... The entities will not want to hear it, but* ***let's admit it, the politicization of health is one that brings it down and denies it, it's fair chance of moving forward****.*

Dr. 1 indicates that while there are ample ideas that are proposed by health professionals aimed at improving the public health system regarding non-communicable diseases and mental health, such initiatives tend to fail to get DOH approval, saying:

- **Dr. 1:** ***The next major challenge is for you to get DOH to listen****, you know, and to actually initiate reforms along the lines of the recommendations of your research, it's like, how I wish I can be more optimistic.*

There is evidence that implicate a disconnect between the health practitioners and the key decision makers due to bureaucracy as well as the politicization of the DOH. For instance, Dr. 4 further notes the lack of support from the key decision makers, citing Local Chief Executives and Municipal Health Officers as also hindering progress.

- **Dr. 4:** *There are issues with the government right now, like with PhilHealth. But one of the things we observe is the lack of support from the people to what government mandates... LCE's leadership, which is Local Chief Executive and the leadership of the Municipal Health Officer.*

Dr. 4 also indicated that important programs fail to get executive approval or fail to get adequate funding due to lack of support from the key persons in leadership. Dr. 3 added that the local government units (LGUs), the mayors, and municipal leaders are, in addition, key persons with significant influence on the success of program implementation of non-communicable diseases and mental health, citing:

- **Dr. 3:** *It's LGU's responsibility to adapt the guidelines and then come up with our own ordinance to have teeth to implement, but the problem is the strict implementation because that's the challenge down to the barangay level. It also* ***depends on the political will of the Barangay Captain, the mayor, the LGU's.***

Failure in implementing these programs is greatly affected by the lack of decisive prioritization based on budgetary and clear objectives between the national and local government units. This is illustrated in the word tree in Figure 3 below, which adds clarity to the contextual usage.

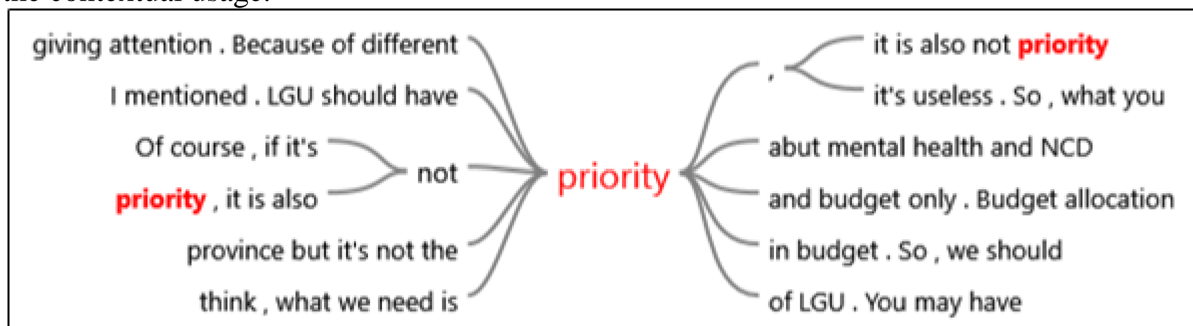

Figure 3: Word Tree: Lack of Budget Priority

- **Dr. 2:** *Our programs in NCD and mental health program* ***are being set aside and were not being giving attention*** *because of different priorities of the LGU. So far,* ***what is happening now is that there is no prioritization****.* ***LGU should have priority about mental health and NCD patients so that they will pay attention on the problems that we have here*** *in province. So, I think, what we need is priority and budget only.* ***Budget allocation can help to support our program initiatives****.* ***Doing so will help in governance and creating a better system to address NCD and mental health*** *together.*

These findings revealed how key differences in the level of knowledge and best practices- between health professionals and key decision makers on issues related to the management of non-communicable diseases and mental health- has converged to create a gridlock and lack of significant changes needed to address these problems. These differences in the level of knowledge were further elucidated by Dr. 5, indicating that the major issues include the failure to integrate the culture in the management of mental health.

- **Dr. 5:** *The other thing is, how many of us, researchers, in psychiatry have looked a bit very critical factor of rituals and traditions that are so many very different from each*

*region, province or town. How many of us have intentionally looked at the way these rituals are embedded when we think of mental health programs? Because I think **if you do not do that embedded approach to the mental health, the program is not going to succeed**. I live in a community which is linked to the Culture …I live in that area where there is a very strong culture of healing and spirituality …This is not diabetes or physiology, regardless of whether you are American or Filipino or Africans is different. This is mental health and the symbols used by people to describe their mental distress is very different where culture interfaces and the individual experience and defines the illness experience and help-seeking behavior. **Why are we not taking a hard look at the fact that mental health problems are so much embedded in the culture and why should we not embed culture and rituals and tradition into the mental health program**?*

III. Question 2: Role Played by the Lack of an Integrated Approach to NCD and mental health.

The second research objective sought to establish the role played by the current state of public health integration towards the management of NCD and mental health. From the outcome, it emerged that while there was some semblance of integration through the provision of training, health programs as well as medicine supply chain, in general the participants implicated the lack of effective integration as being a cause for concern. The perceptions regarding the level of implementation of an integrated approach to NCD and mental health is shown below.

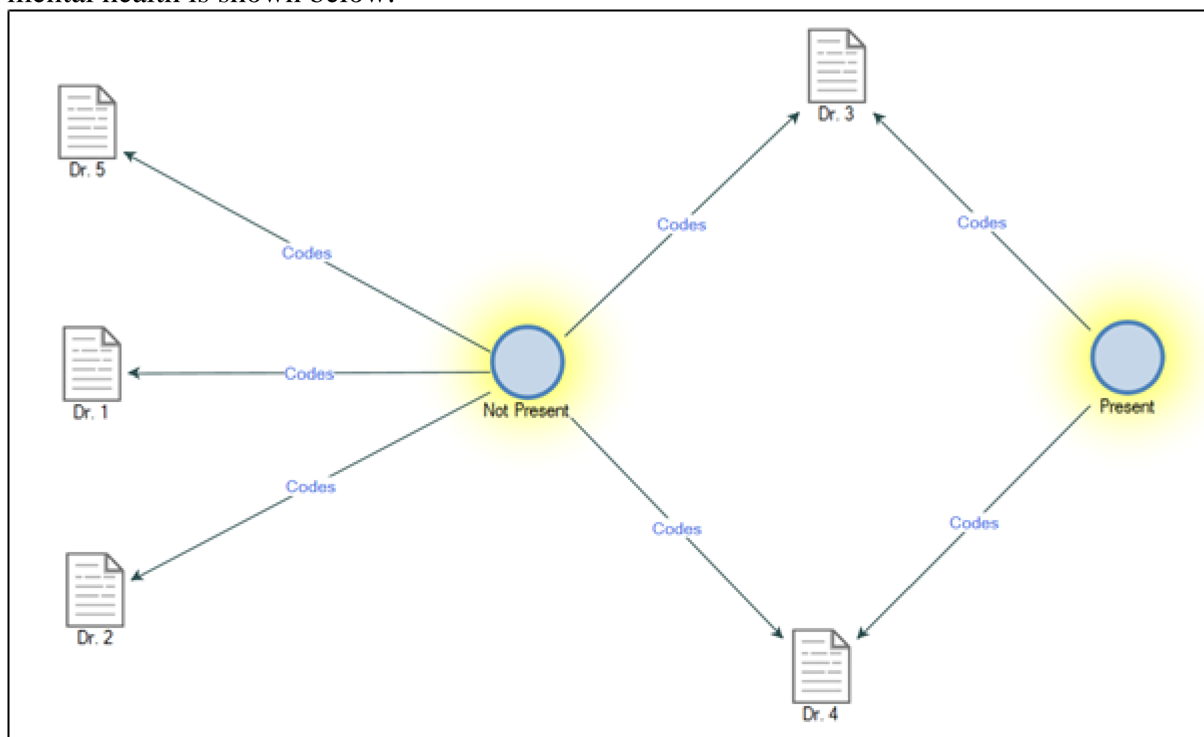

Figure 4: Comparison Diagram –Integrated Approach to NCD and mental health

Most of the key informants noted that an integrated approach to NCD and mental health was not evident in the current health system (Dr. 1, Dr. 2 and Dr. 5). However, Dr. 3 and Dr. 4 were indifferent and maintained that the integrated approach to NCD and mental health was to some extent present, but to some extent not present. The participants, however, did concur that poor disorganized approach had negative implications in the success of NCD and mental

health programs. Dr. 1 stated this problem citing that it emerged from the Department of Health (DOH) and WHO:

- **Dr. 1:** *So, **it is really disorganized**. It's really disintegrated system that we have of illness and the disintegration begins with WHO and DOH.*
- **Dr. 3:** *Actually, **the province, they do their own policies**, but it is still based on DOH policies in terms of health.*

This scenario of decentralized programming resulted in different implementations of the health policies across multiple provinces. The extent of disintegration was further accentuated by several driving factors and these are illustrated in the hierarchy chart in Figure 5.

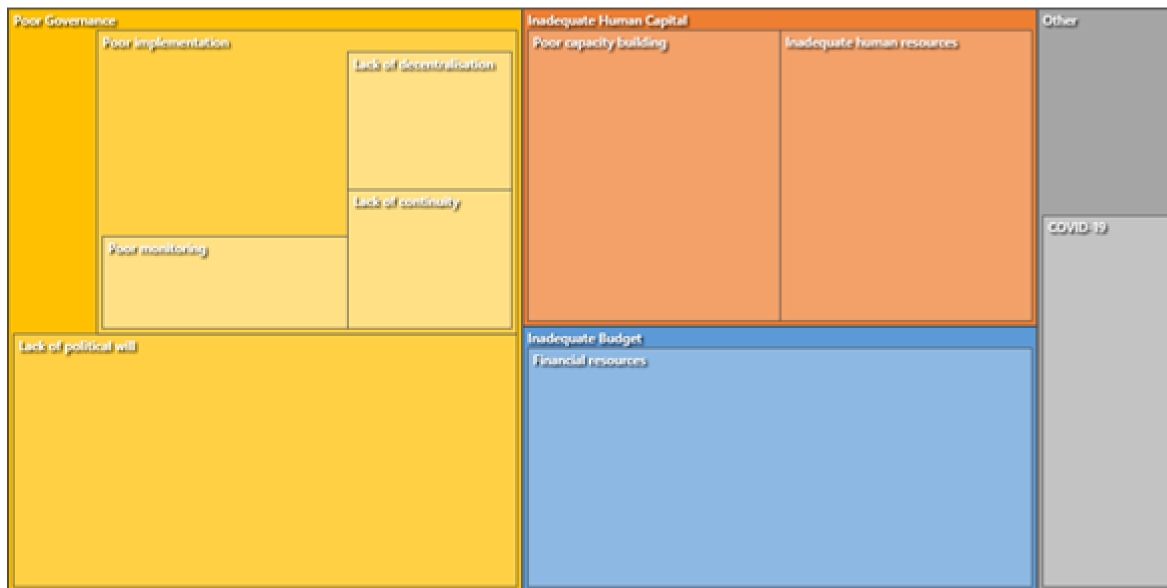

Figure 5: Hierarchy Chart –Factors Affecting Integrated NCD and Mental Health

From the foregoing analysis, there were three major factors that emerged. Base on the number of coding references (which corresponds to the size of the rectangles), the main challenge that was affecting the level of integration of NCD and mental health programs was linked to the poor level of governance and this was linked to the poor implementation of the programs as well as the lack of political will. This was followed by the inadequate human capital while the third factor was inadequate budget, and the least cited being COVID-19.

(i) Poor Governance

The majority of informants suggests poor governance as a major impediment in the success of health programs. One of the issues noted was the lack of political will. The lack of political will by those in leadership resulted in the poor health integration, findings that indicate poor organization, management, and efficiency. In addition, the lack of continuity and clear objectives in health policy is primarily affected by lack of leadership and ineffective policies.

- **Dr. 1:** *There's also politics and in the Philippines [public health] is so **politicized**... So, you cannot deny the fact that **public health in the Philippines is so politicized** and **it is one reason why we have not moved forward in a major way**. Therefore, we really affected by the politicization of health. Of course, that's a very complicated thing, let's say, subject for debate. .... The entities will not want to hear it, but **let's admit it, the politicization of health is one that brings it down and denies it, it's fair chance of moving forward**.*
- **Dr. 1:** *Yes, in the, there have been past administration that have shown, major moves forward. But I think **that problem occurs during continuity, just like after so many years, it's gone**. The very good leader is gone and replaced by not so good leader.*

- **Dr. 3:** *It's LGU's responsibility to adapt the guidelines and then come up with our own ordinance to have teeth to implement. It also* ***depends on the political will of the Barangay Captain, the mayor, the LGU's.***
- **Dr. 4:** *There are issues with the government right now, like with PhilHealth. But, one of the things we observe is the lack of support from the people to what government mandates.* ***Okay. I think it all boils down to leadership****. LCE's leadership, which is Local Chief Executive and the leadership of the Municipal Health Officer.*
- **Dr. 4:** *They also need to follow what's mandated. Like now,* ***we have a very clear and specific policy, but the people are not following****. So,* ***when there's something from the national level when it reaches the municipal, it differs****. Or sometimes the national said something but the LGU contradicts so different things will be implemented.*

(ii.) Budget / Costs:

Another factor identified that plays a role in lack of integration was inadequate resources, including budgetary and human resources. Data analyzed revealed negative effect on the success of health programs. The role played by the budget and the current budget limitations can be seen from Figure 6 below.

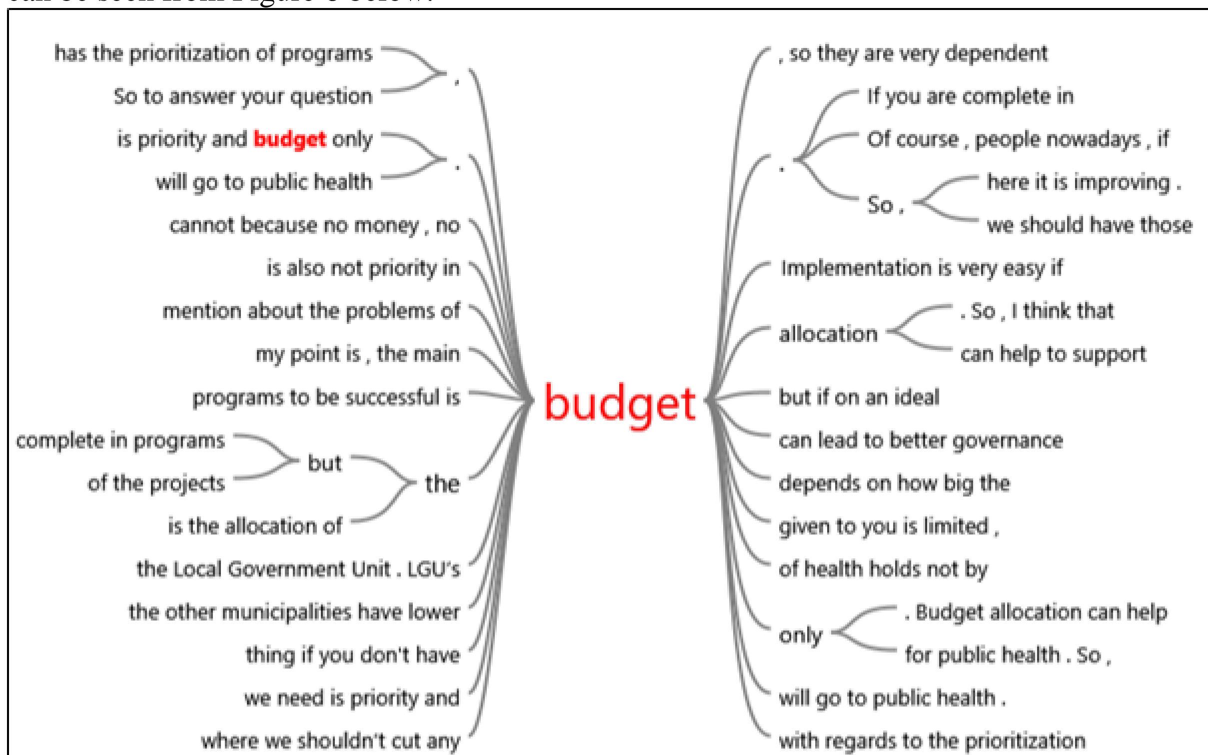

Figure 6: Word Tree – Role Played by Budget and Current Limitations

- **Dr. 2:** *Actually,* ***the number one problem there for the programs to be successful is budget****. LGU should have participation. So far, what is happening now has no prioritization. LGU should have priority abut mental health and NCD patients so that they will pay attention on the problems that we have here in province.* ***Budget allocation can help to support our program initiatives****. So, to answer your question, budget can lead to better governance and then improve programs for NCD and mental health. Implementation is very easy if it is prioritized. Actually, I have so many programs here that can be implemented, but I cannot because no money, no budget.*
- **Dr. 3:** *So, that's the challenge now plus the commitment and prioritization of LEC, because* ***sometimes we have limited funding for the health programs****. Well we have different problems per LGU, like the cities have bigger budgets, there are times that*

they can provide on their own. But the ***other municipalities have lower budget, so they are very dependent to DOH so we have to provide for them in terms of medicines, trainings****. The mental health program was a very small program under the non-communicable diseases.* ***It doesn't have funding at all****.*

The disproportionate level of allocation also plays an important role that gravely affects the effectiveness of these programs. For instance, mental health program is given less priority (compared to NCD), resulting in inadequate funds and lack of success from awareness campaigns. Dr. 4 added the need to prioritize the budget for the remuneration and compensation of the health personnel arguing that this affected the level of motivation.

- **Dr. 4:** *Another thing that I can say is the* ***allocation of the budget with regards to the prioritization of personnel****, I think* ***we have to give incentives to them*** *if they are qualified. They have to be regularized.* ***We have to give them hazard pays****.* ***We have to promote them on the permanent level so that they will be more motivated to work****.*

(iii). Inadequate Human Capital Resources & Development

The inadequate funding and budgetary constraints have significantly affected human capital development and has resulted in the lack of expertise, manpower, and has made it difficult to implement mental health programs successfully.

- **Dr. 3:** *For our deployment program, every LGU has HRH so they are the ones who help on service provision.* ***They lack manpower****. That's the problem because in terms of funds, the LEC's support differ and they have different priorities as well.*
- **Dr. 4:** *Okay. I think we have very few private psychiatrists practicing for mental health so, we do referrals to other places. Some humanitarians, some philanthropists come here to help.*
- **Dr. 5:** *There are more than seventy-eight provinces as of fifteen years ago. So, I don't think we should--- you know, it's right if you could imagine psychiatrist should be in each wherever: district, provinces. But* ***it's not just possible because we do not have people, warm bodies who will man that, so it's like that's wishful thinking.*** *We could not make it dependent and the psychiatrist. I think that's the best way to fail.*

It emerged that while it was imperative to have a psychiatrist in every district, this was not possible as a result of them not being adequate. This was made worse owing to the inadequacy of funds. The issue of inadequate funds had downstream effects on capacity building, affecting NCD and mental health programs with Dr. 1 reporting the need for capacity building:

- **Dr. 1:** *The implementation will become better if the capacity building becomes better.* ***The challenge in capacity building is very big****. We will need just technical support.* ***Our capacity building needs are so big.***

4. DISCUSSION

The key informant interviews are an important source of information in providing a framework to assess the health care system in the Philippines. There are various factors that were identified as key determinants in the overall success of health care programs geared towards improving the quality of life while mitigating the spread of non-communicable diseases and mental health. The results of the study revealed three important factors that prevent many of these programs from achieving its goal of sustainable healthy outcome.

First, analysis of the key informant's interview revealed elements of disorganization and confusion as key determinants to ineffective governance. Health policy governance refers to a wide range of activity (***WHO 2014***) from design to implementation, and seeks to achieve an effective outcome. Changes in the national government leadership has been identified as one of the causes of confusion, owing to redirection and redistribution of budgetary resources. This has grave implications in developing badly needed additional resources while looking to

enhance the level of technical expertise. Furthermore, the practice of patronage can damage morale due to the perceived lack of leadership. In effect, the lack of consistency has led to chronic inefficiency in health care delivery.

In order to improve the level of governance, the informants elucidated the necessity of a deeper level of accountability to improve health care delivery and outcomes. The need for an evidence-based health policy framework (***Freiden TR, 2018***) based on clearly articulated and well-developed guidelines emerged as one of the unifying solutions elucidated by the majority of informants. This evidence-based health policy framework will require research, evaluation of current policies, and continuous adaptation that are essential in carrying out badly needed reform (***Kim JY, 2013; Xi Li, 2020***). Monitoring and surveillance of NCD and mental programs (***Wozney L, 2017***) have the potential to improve the overall health outcomes. No less than a systematic approach and constructive mechanisms are needed that looks to enhance the efficiency and effectiveness of these programs.

Second, another key solution that would help improve the integration and success of NCD and mental health programs was the need to improve the budget allocation and current infrastructure. In the Philippines, as a percentage of GDP, health care spending was at 4.4% in 2011 (***WHO, 2012***), in contrasts healthcare spending in developed countries (UK Health, 2018; US Health 2018) amounted to 10%-18%. Improving the current infrastructure in healthcare delivery by improving the referral system, building more facilities, and investing on technology will help to improve cost effectiveness and quality of care in the long term (***Edwards N, 2017; Ortiz E, 2003***). The significant lack of adequate referral system in the country can lead to increase healthcare costs by requiring more expensive diagnostic modalities and added procedures.

Third, the informants recognized the need to expand human capital development (***Dussault G, 2003***) as a fundamental process in implementing health services reform. The development of explicit human resources through training, education, and support of allied health workers at the local municipality government level will address the problem of imbalance, while improving performance and increased equity. An important aspect of this program will help to ensure additional manpower and capacity to be more inclusive in health promotion. Problems of mental health and NCD require allied health professionals capable of expanding the level of care and assessment to include isolated areas that are often underserved. This will also lead to improved community participation and coordination.

There are other key factors from the informant's analysis. Incentivizing allied health professionals through monetary and training process has the potential to enhance productivity and lead to empowerment. The results of the study validated previous studies that incorporate a reward system as important attributes in the overall success of community health programs.

5. CONCLUSION

The goal of integrating mental health and non-communicable diseases into a unified framework to combat the spread of chronic diseases in the Philippines is plague by complicated structural and organizational problems. The healthcare system remains underfunded, understaffed, and underachieving due to a combination of intractable problems related to governance, budgetary constraints and limitations, and the chronic lack of resources from human capital development to infrastructure. The combination of these problems has significantly affected the quality of healthcare services characterized by lack of organized policy and inherent confusion amongst key decision makers. Furthermore, structural problems resulting from communication gaps between the national and local government units have conspired to create a health systems environment incapable of integrating the management of mental health and non-communicable diseases.

Limitations: There are significant limitations to the study. Foremost is the small number of key informants that participated in the study. The small sample size provides a limited ability to draw conclusions from the data generated. Future assessment of health systems in the Philippines should include key decision makers from non-government and private institutions. In addition, the interview was conducted in the middle of the covid-19 pandemic, even as the participants expressed a heightened level of anxiety and consternation.

REFERENCES

[1]. Barry M Popkin, Global nutrition dynamics: the world is shifting rapidly toward a diet linked with noncommunicable diseases, The American Journal of Clinical Nutrition, Volume 84, Issue 2, August 2006, Pages 289–298, https://doi.org/10.1093/ajcn/84.2.289

[2]. Samonte, FG. (2017). The Role of Nutritional Status in Neuroepigenetic Modification. Journal of Translational Neurosciences, 2017, Vol. 2, No. 1, 1-8.

[3]. Samonte, FG., De Guzman, MT., Gonzales, R. (2020). A population level analysis of mental health and noncommunicable disease (NCD) in the Philippines using predictive modelling analysis. International Journal of Psychosocial Rehabilitation, Vol. 24, Issue 06, 2020 ISSN: 1475-7192.

[4]. Frieden TR. Six components necessary for effective public health program implementation. Am J Public Health. 2014;104(1):17-22. doi:10.2105/AJPH.2013.301608.

[5]. Braithwaite, J., K. Churruca, J. C. Long, L. A. Ellis, and J. Herkes. 2018. "When Complexity Science Meets Implementation Science: A Theoretical and Empirical Analysis of Systems Change." BMC Medicine 16 (63). DOI: 10.1186/s12916-018-1057-z.

[6]. Bob Hudson, David Hunter & Stephen Peckham (2019) Policy failure and the policy-implementation gap: can policy support programs help?, Policy Design and Practice, 2:1, 1-14, DOI: 10.1080/25741292.2018.1540378.

[7]. Cairney, P. 2016. The Politics of Evidence-Based Policymaking. London: Palgrave.

[8]. Ansell, C., E. Sørensen, and J. Torfing. 2017. "Improving Policy Implementation through Collaborative Policymaking." Policy & Politics 45 (3): 467–486. DOI: 10.1332/030557317X14972799760260.

[9]. May, P. 2015. "Implementation Failures Revisited." Public Policy and Administration 30 (3–4): 277–299.

[10]. Institute of Medicine (US) Committee on the Health Professions Education Summit; Greiner AC, Knebel E, editors. Health Professions Education: A Bridge to Quality. Washington (DC): National Academies Press (US); 2003. Chapter 2, Challenges Facing the Health System and Implications for Educational Reform.

[11]. Brandeau M.L., Sainfort F., Pierskalla W.P. (2005) Health Care Delivery: Current Problems and Future Challenges. In: Brandeau M.L., Sainfort F., Pierskalla W.P. (eds) Operations Research and Health Care. International Series in Operations Research & Management Science, vol 70. Springer, Boston, MA. https://doi.org/10.1007/1-4020-8066-2_1.

[12]. WHO: Improving the allocation of health care resources in Poland, 2015. Available at: https://www.euro.who.int/__data/assets/pdf_file/0011/273863/ImprovingAllocationHealthCareresourcesPoland.pdf (accessed 4 Nov 2020).

[13]. World Health Organization, WHO Global NCD Action Plan 2013-2020.WHO, Version 2013. Available at: https://www.who.int/publications/i/item/9789241506236 (accessed 4 Nov 2020).

[14]. World Health Organization Mental health action plan 2013 – 2020. Version dated 6 January 2013. Available at: https://www.who.int/publications/i/item/9789241506021 (accessed 11/11/2020).
[15]. Stein Dan J, Benjet Corina, Gureje Oye, Lund Crick, Scott Kate M, Poznyak Vladimir et al. Integrating mental health with other non-communicable diseases BMJ 2019; 364 :l295.
[16]. Ramanuj, P.P., Talley, R., Breslau, J. *et al.* Integrating Behavioral Health and Primary Care Services for People with Serious Mental Illness: A Qualitative Systems Analysis of Integration in New York. *Community Ment Health J* 54, 1116–1126 (2018). https://doi.org/10.1007/s10597-018-0251-y
[17]. Nicholson, C., Jackson, C. & Marley, J. A governance model for integrated primary/secondary care for the health-reforming first world – results of a systematic review. *BMC Health Serv Res* 13, 528 (2013). https://doi.org/10.1186/1472-6963-13-528.
[18]. Fowler, F. J. (2014). Introduction. In *Survey research methods (5th ed.)* SAGE Publications, Inc., https://www.doi.org/10.4135/9781452230184.
[19]. Kelley K, Clark B, Brown V, Sitzia J. Good practice in the conduct and reporting of survey research. Int J Qual Health Care. 2003 Jun;15(3):261-6. doi: 10.1093/intqhc/mzg031. PMID: 12803354.
[20]. Bernard, H. R. (2000). Social research methods: Qualitative and quantitative approaches. Thousand Oaks, Calif: Sage Publications.
[21]. Yin, Robert K. (2018). Case study research and applications: design and methods. Thousand Oaks, Calif: Sage Publications.
[22]. Uwe Flick (2018). Designing Qualitative Research (2nd edition). Sage Publications.
[23]. Johnny Saldana (2016). The coding manual for qualitative researchers. Los Angeles, CA: Sage Publication.
[24]. Sally Thorne (2016). Interpretive description: qualitative research for applied practice (2nd ed.) New York, NY : Routledge.
[25]. World Health Organization, Health Systems Governance for Universal Health Coverage. Version 2014. Available at: https://www.who.int/universal_health_coverage/plan_action-hsgov_uhc.pdf (accessed 20 Nov 2020).
[26]. Jim Yong Kim, Paul Farmer, Michael E Porter. (2013). Redefining global health-care delivery. The Lancet: Health Policy, Vol 382, Issue 9897, P1060-1069, Sep. 2013
[27]. Xi Li, Harlan M Krumholz, Winnie Yip, et al. (2020). Quality of primary health care in China: challenges and recommendations. Lancet 2020; 395: 1802–12.
[28]. Wozney, L., Newton, A.S., Gehring, N.D. *et al.* Implementation of eMental Health care: viewpoints from key informants from organizations and agencies with eHealth mandates. *BMC Med Inform Decis Mak* 17, 78 (2017). https://doi.org/10.1186/s12911-017-0474-9.
[29]. World Health Organization, World health statistics 2012. Available at: http://www.who.int/gho/ publications/world_health_statistics/EN_WHS2012_Full.pdf (accessed 24 Nov 2020).
[30]. Healthcare expenditure, UK Health Accounts: 2018, Retrieve file:///C:/Users/exeptional/Downloads/Healthcare%20expenditure,%20UK%20Health%20Accounts%202018.pdf (accessed 15 Oct 2020)
[31]. Micah Hartman, Anne B. Martin, Nathan Espinos, Aaron Catlin. National Health Care Spending In 2016: Spending And Enrollment Growth Slow After Initial Coverage Expansions. Health Affairs, Vol 37/1: Culture of Health, Medicare and more. https://doi.org/10.1377/hlthaff.2017.1299.

[32]. Edwards, N., Saltman, R.B. Re-thinking barriers to organizational change in public hospitals. *Isr J Health Policy Res* 6, 8 (2017). https://doi.org/10.1186/s13584-017-0133-8.

[33]. Ortiz E, Clancy CM; AHRQ. Use of information technology to improve the quality of health care in the United States. Health Serv Res. 2003;38(2):xi-xxii. doi:10.1111/1475-6773.00127.

[34]. Dussault, G., Dubois, CA. Human resources for health policies: a critical component in health policies. Hum Resour Health 1, 1 (2003). https://doi.org/10.1186/1478-4491-1-1