



IMPACT STUDY ON HEALTH BEYOND BAR EXTENSION SERVICES OF THE BATAAN PENINSULA STATE UNIVERSITY COLLEGE OF NURSING AND MIDWIFERY

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ABSTRACT: *Health Beyond Bar (HBB) is 4-year project aimed to help persons deprived of liberty (PDLs) at Bataan District Jail in Balanga to improve health conditions and situations through provision of health service and health education. A medical clinic was established in 2015 under the auspices of the College of Nursing and Midwifery and financial assistance from Bataan Governor and Department of Health. To assess the impact and determine objectives attainment, the study delved on: What is the level of increment of trained and educated PDLs in the HBB program? What are the health problems managed from the period of 2019 to 2020? What is the prevalence rate of communicable diseases managed from the period of 2017 to 2020? Are there significant differences in the prevalence rate of communicable diseases managed in the facility? Records review and data scrutiny were used. A consistent percentage increment of trained PDLs creating an impact in their health conditions was observed. Number of trainings conducted in 2018 compared to other years also have increased. Eight common health problems were managed by the clinic and a considerable increase in the number of these were managed in the clinic. Prevalence of Tuberculosis and Sexually Transmitted Diseases have considerably declined. An erratic prevalence in skin disease was observed. Likewise, it's prevalence was noted to be significant, while the rest of the health conditions were not significantly different. A new strategy of implementation of Health Education Session and Training may be adopted where offerings may be done on a two-week cycle per quarterly. A more innovative delivery of training programs may improve the numbers and retention of information shared. A robust approach to health education related to skin disease may be devised. Lastly, the Medical Clinic may use creative information drive in compliance and monitoring of prevalent health conditions.*

KEYWORDS: Health Beyond Bar, Persons Deprived of Liberty, Health Education



INTRODUCTION

Health Beyond Bar (HBB) is a 4-year continuous project that aims to help persons deprived of liberty (PDLs) at Bataan District Jail under the Bureau of Jail Management and Phenomenology (BJMP) in the city of Balanga to improve their health conditions and situations through provision of health service and health education.

The project was a result of a study conducted by Associate Professor Ruby S. Matibag in 2015. The research entitled “Surveillance and Control of Tuberculosis among the Inmates of the Bataan Provincial Jail: Basis for a Population-Specific Implementation Program” aimed to conduct surveillance to determine the incidence and prevalence of TB among the inmates of Bataan District Jail.

The findings revealed that the jail facility had no resident physician to conduct upon-commitment or entry screening. Also, surveillance practice on TB like utilizing links and networks to laboratory-confirmed and clinically- diagnosed TB cases were not practiced fully. However, there was sufficient stock of anti-TB treatment drugs and proper implementation of the Direct-Observed Treatment Short Course (DOTS) strategy. Appropriate network of treatment has been reflected.

This was seen where the problem of delayed laboratory confirmation led to droplet and airborne exposure of other inmates. Hence, the study concluded that the missing link is the establishment of a DOTS Clinic that will specifically render procedures on working out TB program needs for the jail facility. The availability of a quality laboratory for screening will eventually help the institution materialize efficient surveillance and control.

The project is expected to instill the basic understanding of health to all, deprives no one but makes accessible to everyone even behind bars. It will also help PDLs understand and respond appropriately in acknowledging health promotion and prevention of infectious diseases through health education audio-video clips and picture gallery. It also paves the way to develop a healthy correctional facility that adheres to address basic health concerns of the inmates.

Furthermore, it is expected that the PDLs and the institution may view health beyond bar; not a neglect but a creation of good institutional leadership in making intimate health at a prime concern, create knowledge on how one as inmate will preserve self, as health challenges arise as well as encourage stakeholders to hold responsibility and take active means in creating a healthy community for the inmates.

As a testament of the commitment of the college and the university to the health needs of the PDLs, a medical facility or clinic was established in 2015 inside the Bataan District Jail. The construction of the medical facilities was initiated by the College of Nursing and Midwifery through financial help from the Office of the Bataan Governor and Department of Health.

After 5 years of the implementation of the clinic in Bataan District Jail, the need to assess the impact of the services is critical as this can further improve delivery of services. The purpose of the study is to determine the extent of the impact of the services provided by HBB as to services rendered including trained persons deprived of liberty and medical activities.



REVIEW OF RELATED LITERATURE

People in prison have multiple complex needs, including health needs. Compared with the general population, people in prison are characterized by a higher prevalence of infections with human immunodeficiency virus (HIV), hepatitis B virus (HBV), and hepatitis C virus (HCV); other sexually transmitted infections (STIs); and tuberculosis (TB) (Dolan, 2016; Hofstraat, 2017)

The prevalence of these health conditions predisposes PDLs to acquiring such infections. In a study conducted by Tavoschi in 2018 among European Union (EU), the likelihood of the infection being transmitted to inmates was related to the positivity rate. Positivity rates for STIs were reported in very few studies conducted in the EU, resulting in very limited geographic coverage. For chlamydia, gonorrhea, and syphilis, positivity rates were 6%–11%, 0.2%, and 2.1%–3.6%, respectively, in Spain and Italy. As a comparison, positivity rates ranged from 0.6% to 7.6% for chlamydia, from 0% to 3.1% for gonorrhea, and from 0.1% to 6% for syphilis in non-EU studies. It can be noted likewise that positivity rates for active TB in the EU ranged between 0.12% and 0.3%, whereas applying LTBI active case findings resulted in a tuberculin skin test positivity rate ranging from 9.8% to 50.4%.

In Pakistan, high frequency of infectious diseases (HIV, HBV, HCV, and TB) at Central Jail Gaddani, one of the largest prisons in Balochistan were observed. The overall frequency rate of Hepatitis was 9.6%, HIV 4.2%, and TB 1%. It was found that the frequency of HIV, Hepatitis, and TB is higher than the general population in Pakistan. (Wali, 2019)

In the other parts of the world, particularly in the middle east, the same prevalence was noted. Iran's prevalence of HIV, TB and viral hepatitis among prisoners is higher than the general population. Although there are few studies on NCDs among prisons in Iran. Likewise, in Iran, 20% of men and women are hypertensive. (Wali, 2019)

In a study conducted in two large prisons in Mexico City, of the 496 prisoners, hypertension prevalence was at 2.1%. (Dolan, 2016)

Aside from HIV and TB, inadequate services exist for prisoners with other illnesses such as NCDs. According to the US CDC, prisoners with noninfectious diseases, such as chronic obstructive pulmonary disease (COPD), asthma, cancer, diabetes mellitus, coronary artery disease (CAD), hypertension, stroke, and mental illness, are hidden from the health systems view. (CDC, 2014)

The most reported chronic condition by both prisoners and jail inmates was high blood pressure. Nearly a third (30%) of prisoners and more than a quarter (26%) of jail inmates reported high blood pressure. Asthma (15% for prisoners and 20% for jail inmates) and arthritis (15% for prisoners and 13% for jail inmates) were the second and third most common chronic conditions. (Maruschak, 2015)

The reviewed literature findings suggest vulnerability and prevalence in prisons to communicable or infectious and non-communicable diseases.



Research Questions

Impact study of a service or program determines the extent by which the program has met its objectives. The study had determined the impact of the services provided by the program HBB. It had addressed the following research questions:

1. What is the level of increment of trained and educated PDLs in the HBB program?
2. What are the health problems managed from the period of 2019 to 2020?
3. What is the prevalence rate of communicable diseases managed from the period of 2017 to 2020?
4. Are there significant differences in the prevalence rate of communicable diseases managed in the facility?

Methodology

Records review was primarily the method utilized in the study. This involves data scrutiny from the medical records of the facility.

RESULTS AND FINDINGS

Impact of the HBB was measured in terms of the objectives of the program. Training and Education of PDLs was one area of impact measurement.

Research Question 1: What is the level of increment of trained and educated PDLs in the HBB program? The table below shows the number of trained PDLs from the period of 2016-2019

Table 1: Number of Trained PDLs from 2016-2019

Year of Training	2016	2017	2018	2019
Number of Trained PDLs	50	235	963	1150
Percentage of Increase		470%	409%	119%

From the table it can be gleaned that there is a steady increase of 400% from 2016 data of training PDLs, there was a 300% decline in the 2019 training of PDLs. The consistent percentage of increment of trained PDLs suggest that HBB Training health and health related concepts critical in their wellness may prove that the HBB program may have impacted the health conditions of the inmates. This data may also corroborate with the findings on the health conditions managed in the newly established medical clinic which was also part of the HBB program.

However, the decline in the percentage of trained PDLs in the year 2019 may be attributed to the changes in the demographics of the inmates and a decline in the number of PDLs being discharged for rehabilitation. This has affected the number of PDL's, and the training being



conducted in the succeeding years. This is likewise being supported by the number of health congress and the seminars and training.

Table 2: Health Congress and Seminars Training Conducted

Activities	2016	2017	2018	2019
Health Congress	4	4	4	4
Percentage of Increase	0%	0%	0%	0%
Seminar and Training	4	4	11	11
Percentage of Increase	0%	0%	36.36%	0%

The table provides the percentage of increase in the conduct of Health Congress and Seminars and Training from 2016-2019. The data shows that there was no increase in the percentage of Health Congress conducted in all the years HBB was implemented. This is because there are only four quarters in a year. The commitment to do the Health Congress in the jail on a quarterly basis is to ensure also enough preparation is made in this regard. Similarly, the Health Congress conduct will depend on the seminars and training to be provided to the inmates in the particular quarter. This finding also corroborates with the steady increase in the number of trained PDLs.

In the year 2018, a 36.36% increase from the previous year's seminar and training were observed as this was related to the increasing number of inmates. The increase was in relation with the government's thrust on war on drugs. The number of trainings had increased in response to the increasing number of PDLs in the facility.

Research Question 2: What are the health problems managed from the period of 2019 to 2020?

Health problems in the jail are prevalent and are expected. The environment may play an important role in its causation. Table 3 shows the prevalence of health problems among PDLs.

Table 3: Health Problems Prevalence among PDLs form 2019-2020

Year	Health Problems Managed	Number of PDLs Served	Percentage
2019	Upper Respiratory Tract Infection	160	30.42
	Diarrhea	40	7.60
	Hypertension	46	8.75
	Dizziness	50	9.51
	Nausea and Vomiting	30	5.70
	Abdominal Pain	30	5.70
	Headache	30	5.70
	Minor Skin Problem	140	26.62
	TOTAL	526	100%



2020	Upper Respiratory Tract Infection	292	37.48
	Diarrhea	86	11.04
	Hypertension	85	10.91
	Dizziness	60	7.70
	Nausea and Vomiting	32	4.11
	Abdominal Pain	53	6.80
	Headache	41	5.26
	Minor Skin Problem	130	16.69
	TOTAL	779	100%

With the establishment of the Medical Clinic in the facility, there were health problems that were managed. Considerably, there were eight notable common health problems that were managed by the clinic. In the two-year period, there was a considerable increase in the number of health problems managed in the clinic. Such an increase may all be attributed to the increase in the number of inmates.

Topping the list was URTI in both years with 160 and 292 cases respectively. This may be related to environmental factors like space. The facility despite the good location may have been not adequately meeting the per person requirement of space. The increase in the number of inmates during this period may also be attributed to the prevalence of URTI among inmates. Limited space requirement may have provided a very good breeding of infection as air circulation may also be a contributing factor in the transmissibility of the bacteria causing URTI.

The second prevalent health problem documented in the Medical Clinic of the facility was Minor Skin Problem. The recorded incident of this condition was noted at 140 and 130 respectively for the same period of 2019 and 2020. There were 10 cases less from the data of 2019 and 2020. This minimal decrease may be attributed to the health education activities as part of the training and seminars conducted. Health awareness may have impacted the reduction of cases.

The third prevalent health condition managed in the medical clinic was Diarrhea in the 2020 data but ranked 5th in the 2019. Diarrhea just like the URTI is an environment related condition as cleanliness of the area is a critical factor in the development of the condition. Food and beverages contaminated with flies and other rodents may contribute to the increasing cases of diarrhea.

Dizziness was noted to have been in the fourth spot of the prevalence. This condition may also be related to the fourth condition with increasing prevalence from 2019-2020 which is Hypertension. These two conditions are dyad conditions. Dizziness may be a symptom related to an increase in blood pressure. Likewise, headache as another predominant health condition in the facility is another symptom related to hypertension. Nausea and Vomiting may likewise be an associated symptom of HPN. All these have considerably increased the number of cases from 50 to 60 for those with dizziness, hypertension from 46 to 85 cases, headache from 30 to 41 cases and nausea and vomiting with 30 to 32 cases. This finding is similar with the US prisons where nearly a third (30%) of prisoners and more than a quarter (26%) of jail inmates reported high blood pressure. (Maruschak, 2016). This is further corroborated by Farhoudi (2019) in a study in the United States, jail and prison inmates had higher odds of hypertension,



asthma, arthritis and hepatitis in comparison with the general population. In Mexico, two large prisons of the 496 prisoners, hypertension prevalence was at 2.1% (Farhoudi, 2019)

These data suggests that the considerable increase in the cases managed by the medical clinic is a manifestation that the HBB program has been impacting the health condition of the entire facility. This means that utilization of the services of the medical clinic improves traceability of conditions and early management of these conditions enables the PDLs to be treated and therefore prevents complications and sequelae development.

Research Question 3: What is the prevalence rate of communicable diseases managed from the period of 2017 to 2020?

Communicable Disease may become prevalent as environmental conditions affect its transmissibility. Table 4 shows the communicable disease prevalence in the facility.

Table 4: Prevalence Rate of Communicable Disease in the Facility

Communicable Disease	Prevalence Rate			
	2017	2018	2019	2020
Pulmonary Tuberculosis	10.97	0.67	1.36	2.51
Sexually Transmitted Infection	0.24	0.32	0.00	0.00
Pneumonia	0.48	0.97	0.69	0.90
Skin Disease	9.52	2.99	20.16	23.34

The table shows the steady decline in the Pulmonary Tuberculosis (PTB) in the Facility. Likewise, there is a steady decline in the cases of Sexually Transmitted Diseases (STDs). The considerable erratic prevalence in skin disease was noted.

The HBB program was an offshoot of a research conducted in 2015 by Dr. Ruby Matibag on “Surveillance and Control of Tuberculosis among the Inmates of the Bataan Provincial Jail: Basis for a Population-Specific Implementation Program” aimed to conduct surveillance and to determine the incidence and prevalence of TB among the inmates of Bataan District Jail. The result of the study had trailblazed the establishment of a DOTS Clinic that will specifically render procedures on working out TB program needs for the jail facility. The availability of a quality laboratory for screening will eventually help the institution materialize efficient surveillance and control.

It can be seen from the table that the prevalence rate of pulmonary tuberculosis had decreased dramatically from two digits to one digit in the span of four years. The 10.97 prevalence rate from 2017 has gone down to 2.51 in 2020 which shows that there are low numbers of PDLs who are acquiring the disease. The same trend was observed in sexually transmitted diseases where a prevalence rate of 0.24 in 2017 had decimated to 0 since 2019. Pneumonia has been controlled from flourishing among PDLs since less than 1 percent of the total population of the jail has been affected since from 2017 to 2019. However, skin disease is now an emerging problem in the jail as more inmates are getting infected due to overcrowding.

The result of this study is similar to the findings among prisoners in European Union. Compared with the general population, people in prison are characterized by a higher prevalence of infections with human immunodeficiency virus (HIV), hepatitis B virus (HBV),



and hepatitis C virus (HCV); other sexually transmitted infections (STIs); and tuberculosis. (Tavoschi, 2018) The same prevalence was observed in the US, where an estimated 21% of prisoners and 14% of jail inmates reported having tuberculosis, hepatitis, or other STDs excluding HIV or AIDS, compared to 5% of the general population. (Maruschak, 2016)

The overcrowding in Bataan Jail was also similar in the European Union study where they have concluded that Individual influences such as education level, high-risk behaviors, societal factors, environmental factors such as high inmate density (aggravated by overcrowding in some EU/ EEA correctional facilities), diet, and hygiene have been shown to create a conducive environment for the concentration and transmission of diseases in prison. (Kamarulzaman, 2016; Enggist, 2014) Moreover, in a Pakistan study, the possible reasons for the remarkably high frequency of infectious diseases in prisons, could be explained by the conditions of the deprived detention, which may be attributed likewise to lack of adequate space in the prison cell. (Wali, 2019)

Research Question 4: Are there significant differences in the prevalence rate of communicable diseases managed in the facility?

The test of difference was done to determine the significant difference in the prevalence of the communicable diseases over the four years period of the implementation of HBB. Table 5 presents the data.

Table 5: Significant Difference in the Prevalence of Communicable Diseases in the Facility

Communicable Disease	Prevalence Rate				Difference
	2017	2018	2019	2020	
Pulmonary Tuberculosis	10.97	0.67	1.36	2.51	4.78885773
Sexually Transmitted Infection	0.24	0.32	0.00	0.00	0.16492423
Pneumonia	0.48	0.97	0.69	0.90	0.22135944
Skin Disease	9.52	2.99	20.16	23.34	9.42464279

The table depicts the difference in the prevalence rate of 4 communicable diseases in the facility.

The difference in the prevalence rate of skin diseases was noted to be significant as variability was noted. This suggests that skin disease is still prevalent in the facility as there is an increasing variability of the rates for the period of four years. However, sexually transmitted diseases and Pneumonia have less variability as the differences were noted to be declining. The decline in the prevalence was noted to be related to extensive health education and training of PDLs as to transmission specifically related to space requirement. It can also be noted that there was a decreasing prevalence of tuberculosis, and a variability of the rate was also significantly different. This suggests that the health condition's prevalence may have declined. This decline may be due to the implementation of HBB particularly the health education sessions and training conducted among PDLs.



CONCLUSION

1. There was a consistent percentage increment of trained PDLs in the facility creating an impact in the health conditions of the inmates. Likewise, there was an increase in the number of trainings conducted in 2018 compared to other years of the HBB implementation
2. There were eight notable common health problems that were managed by the clinic. Likewise, there was a considerable increase in the number of notable health problems managed in the clinic.
3. There was a steady decline in the prevalence of Pulmonary Tuberculosis (PTB) and Sexually Transmitted Diseases. Likewise, there was considerable erratic prevalence in skin disease in the facility.
4. Skin disease prevalence was noted to be significant, while the rest of the health conditions were not significantly different.

RECOMMENDATIONS

1. The strategy of implementation of Health Education Session and Training of PDLs may be considered. Offerings may be done on a two-week cycle on a quarterly basis. This can improve further the numbers of training to be conducted and the number of PDL participating in the program
2. A more innovative delivery of training programs may likewise improve the numbers and retention of information shared in the training. This can improve retention of concepts and thereby improving level of compliance and utilization of information related to transmissibility of the health conditions
3. A robust approach to health education related to skin disease acquisition may be provided. This can include a weekly monitoring of skin conditions of inmates as part of the health education session being offered in the training program
4. The Medical Clinic may use a creative information drive as a strategy in the compliance and monitoring of health conditions identified as prevalent

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