# Perceived Public Health Policy Impact on Health Promotion of Household Residents in Bauchi State, Nigeria

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## Abstract

*Public health policies are laws, regulations and decisions that are made and implemented by public health authorities for disease prevention and health promotion. In Bauchi State there are policies on pre-marital screening of HIV/AIDs, Hepatitis, Genotype, pre-marital Pregnancy Test and free Distribution of insecticide nets, therefore, this study investigated the perceived impact of these policies on health promotion of household residents in Bauchi State. Ex-post factor research design was used to conduct this study, the population of the study comprised all households residing in Bauchi State with a population of 5,321,22, the sample for the study were 479 selected through multi-stage sampling procedure of cluster sampling, simple random sampling and systematic sampling techniques. The instrument used for data collection was a researcher-developed questionnaire on four four-point modified Likert scale, the instrument was validated and its reliability was ascertained where a reliability index of .71 was obtained which indicates that the instrument was reliable. Multivariate Analysis and Analysis of Variance were used to analyse the data collected from the respondents. The results revealed that public health policies of pre-marital screening of HIV/AIDs (p-000), Genotype (p-000), Pregnancy (p-000), Hepatitis(p-000), and free distribution of ITNs (p-000), were significantly perceived to have an impact on the health promotion of households residing in Bauchi State. Therefore, the study concluded that public health policies regulations and laews were found to have impact on the health promotion of household residents in Bauchi State. It was recommended that strict measures should be put in place to ensure adherence to the pre-marital screening laws and policies in the State and also*

*annual distribution of ITNs should be maintained by the government as they have impact on public health promotion.*
*Keywords: Perceived, Impact, Health, Policies, Promotion*

## Introduction

Public health policy is defined as the laws, regulations, actions, and decisions implemented within society to promote wellness and ensure that specific health goals are met (Mailman School of Public Health, 2021). Public health policy also refers to the plan, actions and decisions that are taken to achieve specific goals in society or community. It is also defined as a goal-directed course of action taken by the government or health institution charged with health issues to deal with public health problems such as illicit drugs, housing, teenage pregnancy, and welfare for the elderly among others (Public Health Nigeria, 2024).

Public health policies can range from formal legislation to community outreach efforts; they play a role in multiple sectors, including health care, insurance, education, agriculture, business, and more (Mailman School of Public Health, 2021). The author further pointed out that public health policy is crucial because it brings the theory and research of public health into the practical world. Public health policies create action from research and find widespread solutions to previously identified problems.

In the study of Thomson et al. (2018), on the effects of public health policies on health inequalities in high-income countries, twenty-nine systematic reviews were identified reporting 150 unique relevant primary studies. The reviews summarised evidence of all types of primary and secondary prevention policies (fiscal, regulation, education, preventative treatment and screening) across seven public health domains (tobacco, alcohol, food and nutrition, reproductive health services, the control of infectious diseases, the environment and workplace regulations). The finding reveals that the results were mixed across the public health domains; some policy interventions were shown to reduce health inequalities (e.g. food subsidy programmes, immunizations), others have no effect and some interventions appear to increase inequalities (e.g. 20 mph and low emission zones). The review does tentatively suggest interventions that policymakers might use to reduce health inequalities.

Premarital screening (PMS) is an efficient strategy for the primary prevention of specific genetic disorders and sexually transmitted diseases (STDs) (Ibrahim et al. 2013). PMS is a screening program offered to couples planning to get married to identify carriers of certain genetic diseases, e.g., sickle cell disease and thalassemia. These carriers are usually asymptomatic but can transmit such diseases to their future children if both couples are carriers. PMS is also used to test certain STDs, e.g., Acquired Immunodeficiency Syndrome (AIDS) and hepatitis B and C, to reduce the incidence of genetic conditions and sexually transmitted diseases, hence minimizing the associated burden (Alhosain, 2018). Partners with incompatible PMS results are usually offered counselling sessions so they can make informed decisions about their marriage, which might include marriage cancellation (Lim, 2009)

PMS and counselling have shown evidence of effectiveness in reducing the incidence of genetic diseases such as β-thalassemia as well as a reduction in at-risk couples from getting married (Rouh AlDeen, 2021). Genotype and HIV screening before marriage have a lot of benefits for both partners and the children they plan to have. Not only are they vital tests for preventing HIV/AIDs infection, but they also save couples and their offspring the stress that comes with the management of sickle cell disease (Balarabe et al., 2016). Prevention of future complications, better understanding of reproductive health and fertility issues, and better sexual health and marriage compatibility were also some of the reasons mentioned by the respondents for considering premarital screening important. It was found that very few respondents gave importance to premarital testing to avoid Sexually Transmitted Diseases (STDs) and to understand the genetic compatibility or chromosomal anomalies that lead to hereditary disorders (Pratik, 2021).

Chimaka and Okafor (2020) in their study revealed that among the respondents, 90.7% knew of the effectiveness of ITNs in the prevention of MIP. Results also showed that most of the women (69.3%) own at least one ITN, and their major source was the free house-to-house distribution by the government. Also, 62.9% revealed that the ITNs were readily available. Out of the 97 women who owned at least one ITN, the majority (69.1%) claimed to have started using ITNs even before pregnancy with 70% claiming to sleep under the ITNs always. Nevertheless, only 69.1% used an ITN correctly.

In a binary correlation between ITN coverage and the prevalence of malaria parasitemia, it was shown that the prevalence of malaria decreases with an increase in ITN coverage ($r = -0.899$, $p = 0.015$). On the other hand, the binary correlation between usage and the prevalence of malaria parasitemia also indicated that the prevalence of malaria decreases with an increase in ITN usage, though not significantly ($r = -0.641$, $p = 0.170$) (Charles et al., 2019) The author further revealed that compared to those living in wooden houses ($OR = 0.488$, 95% CI: 0.269–0.885; $p = 0.018$). Rural communities had lower ITN coverage compared to semi-urban communities ($p = 0.0001$). An increase in ITN coverage significantly reduces malaria prevalence (correlation $-0.899$, $p = 0.015$).

Findings of the study of Emmanuel et al. (2016) show that 87.9% were aware that ITN can be used in malaria prevention while 78.7% posited that ITN is an important tool in preventing malaria during pregnancy. Of the 64.8% who used ITN during pregnancy, only 30% use it every day while 12.9% use it once a week. It is concluded that pregnant women in this setting have adequate knowledge about ITN. Most of them use ITN but the frequency or rate of use is poor. An enlightenment program about the proper and adequate use of ITN in malaria prevention is warranted. In Bauchi State, Nigeria, there are policies in place on compulsory screening of HIV/AIDs, genotype test and free distribution of Insecticide Treated Bed Nets across the State, therefore, this study was designed to determine the Perceived Public Health Policy Impact on Health Promotion of Household Residents in Bauchi State.

**Methods**

A descriptive research design of the ex-post-factor was adopted for this study. This design was found appropriate for this study. The population of this study comprises households residing in Bauchi State with an estimated population of 5,321,22 (NPC, 2006), therefore, the sample for the study was 479 residents drawn from the total population of 5,321,22. The selection was done following Krejcie and Morgan (1970) who stated that for any population above 1000, 000, and above, the required sample size should not be less than 384. The sample was selected through a multi-stage sampling procedure of cluster sampling, simple random sampling techniques and systematic sampling techniques.

The instrument for data collection was researcher researcher-developed questionnaire on a four-point modified Likert scale, Strongly Agree (4 points) Agree (3 points) Disagree (2 points) and Strongly Disagree (1 point). Validity of the instrument was established by giving three copies of the instrument to three experts in the field of Health Education. Their corrections and observations were incorporated into the draft of the instrument. The reliability of the instrument was established by conducting one-shot pilot test in Gwaram Local Government of Jigawa State using a split-half method, where 30 copies of the instrument were administered, the results obtained were subjected to Cronbach's Alpha, a coefficient of 0.71 was obtained which shows that the instrument was reliable. The researcher together with three (3) research assistants administered the instrument to the respondents. inferential statistics Multivariate analysis and Analysis of Variance was used to analyse the formulated hypotheses at 0.05 level of significance using Statistical Package for Social Science (SPSS) version 25.0.

**Results**

The result presented was based on the data collected from 479 household residents in Bauchi State. The results are presented as follows:

**Table 1: Multivariate Analysis of the Impact of Public Health Policies on Health Promotion**

| Source | Dependent Variable | Type III Sum of Squares | df | Mean Square | F | Sig. |
|--------|--------------------|------------------------|-----|-------------|-----|------|
| Intercept | Free Distribution of Mosquito Nets | 105613.709 | 1 | 105613.709 | 2631.739 | .000 |
| | Genotype Screening | 1482897.163 | 1 | 1482897.163 | 3981.753 | .000 |
| | HIV and AIDs Screening | 604247.755 | 1 | 604247.755 | 3078.378 | .000 |
| | Hepatitis Screening | 881778.144 | 1 | 881778.144 | 3214.245 | .000 |
| | Pre-marital Pregnancy test | 105613.709 | 1 | 105613.709 | 2631.739 | .000 |

Table 1 revealed the analysis of Multivariate analysis of the impact of public health policies on health promotion among household residents in Bauchi State. The table shows that free distribution

of mosquito nets 2631.739, p-.000; genotype screening 3981.753, p-.000; HIV/AIDs screening 3078.378, p-.000; Hepatitis screening 3214.245, p-.000 and pre-marital pregnancy test 2631.739, p-.000 were having a significant impact on public health impact.

**Table 2: Analysis of Variance (ANOVA) on the Difference in the Perceived Impact of Public Health Policies Across Educational Levels on Health Promotion among Household Residents in Bauchi State**

| Source of Variance | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Free Distribution of Mosquito Nets | Between Groups | 47.453 | 2 | 23.727 | .590 | .555 |
| | Within Groups | 19375.837 | 482 | 40.199 | | |
| | Total | 19423.291 | 484 | | | |
| Genotype Screening | Between Groups | 1147.547 | 2 | 573.773 | 1.544 | .215 |
| | Within Groups | 179105.29 | 482 | 371.588 | | |
| | Total | 180252.83 | 484 | | | |
| HIV and AIDs Screening | Between Groups | 1000.979 | 2 | 500.489 | 2.566 | .078 |
| | Within Groups | 94002.267 | 482 | 195.025 | | |
| | Total | 95003.245 | 484 | | | |
| Hepatitis Screening | Between Groups | 1343.012 | 2 | 671.506 | 2.463 | .086 |
| | Within Groups | 131434.84 | 482 | 272.686 | | |
| | Total | 132777.85 | 484 | | | |
| Pre-marital Pregnancy test | Between Groups | 47.453 | 2 | 23.727 | .590 | .555 |
| | Within Groups | 19375.837 | 482 | 40.199 | | |
| | Total | 19423.291 | 484 | | | |

Table 2 revealed the Analysis of Variance in the difference between household residents on the perceived impact of public health policies on health promotion. The table shows that no significant difference was observed in the impact of the public health policies on health promotion as all the calculated p-values were greater than .05.

**Table 3: Analysis of Variance (ANOVA) on the Difference in the Perceived Impact of Public Health Policies Across Senatorial Zones on Health Promotion among Household Residents in Bauchi State**

| Source of Variance | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| Free Distribution of Mosquito Nets | Between Groups | 530.334 | 2 | 265.167 | 6.765 | .001 |
| | Within Groups | 18892.957 | 482 | 39.197 | | |
| | Total | 19423.291 | 484 | | | |
| Genotype Screening | Between Groups | 4863.495 | 2 | 2431.748 | 6.683 | .001 |
| | Within Groups | 175389.342 | 482 | 363.878 | | |
| | Total | 180252.837 | 484 | | | |
| HIV and AIDs Screening | Between Groups | 3628.471 | 2 | 1814.236 | 9.570 | .000 |
| | Within Groups | 91374.774 | 482 | 189.574 | | |
| | Total | 95003.245 | 484 | | | |
| Hepatitis Screening | Between Groups | 4947.924 | 2 | 2473.962 | 9.328 | .000 |
| | Within Groups | 127829.931 | 482 | 265.207 | | |
| | Total | 132777.856 | 484 | | | |
| Pre-marital Pregnancy test | Between Groups | 530.334 | 2 | 265.167 | 6.765 | .001 |
| | Within Groups | 18892.957 | 482 | 39.197 | | |
| | Total | 19423.291 | 484 | | | |

Table 3 revealed the Analysis of Variance in the difference between household residents on the perceived impact of public health policies on health promotion across senatorial zones of Bauchi State. The table shows that significant differences were observed in the impact of the policies on health promotion as all the calculated p-values were less than .05. Distribution of free Treated Insecticide Nets with the p-value of .001, genotype screening .001, HIV/AIDs screening .000, hepatitis screening .000 and pre-marital pregnancy test .001; this shows that a significant difference was observed across senatorial zones of the state as indicated in table 3.2 post hock test.

**Tukey Honest Significant Difference Post Hock Test Result on the Difference between Household Residents on the Perceived Impact of Public Health Policies on Health Promotion in Bauchi State**

| Dependent Variable | (I) Senatorial Zone | (J) Senatorial Zone | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval Lower Bound | Upper Bound |
|---|---|---|---|---|---|---|---|
| Free Distribution of Mosquito Nets | Bauchi South | Bauchi North | 2.484* | .759 | .003 | .6985 | 4.269 |
| | | Bauchi Central | 2.169* | .681 | .004 | .5683 | 3.771 |
| | Bauchi North | Bauchi South | -2.484* | .759 | .003 | -4.269 | -.698 |
| | | Bauchi Central | -.314 | .693 | .893 | -1.944 | 1.316 |
| | Bauchi Central | Bauchi South | -2.169* | .681 | .004 | -3.771 | -.568 |
| | | Bauchi North | .314 | .693 | .893 | -1.316 | 1.944 |
| Genotype Screening | Bauchi South | Bauchi North | 8.393* | 2.314 | .001 | 2.952 | 13.833 |
| | | Bauchi Central | 3.267 | 2.075 | .258 | -1.611 | 8.147 |
| | Bauchi North | Bauchi South | -8.393* | 2.314 | .001 | -13.833 | -2.952 |
| | | Bauchi Central | -5.125* | 2.113 | .041 | -10.093 | -.1575 |
| | Bauchi Central | Bauchi South | -3.267 | 2.075 | .258 | -8.147 | 1.6115 |
| | | Bauchi North | 5.125* | 2.113 | .041 | .1575 | 10.093 |
| HIV and AIDs Screening | Bauchi South | Bauchi North | 7.307* | 1.670 | .000 | 3.380 | 11.234 |
| | | Bauchi Central | 3.464 | 1.498 | .055 | -.057 | 6.986 |
| | Bauchi North | Bauchi South | -7.307* | 1.670 | .000 | -11.234 | -3.380 |
| | | Bauchi Central | -3.842* | 1.525 | .032 | -7.428 | -.257 |
| | Bauchi Central | Bauchi South | -3.464 | 1.498 | .055 | -6.986 | .0574 |
| | | Bauchi North | 3.842* | 1.525 | .032 | .257 | 7.428 |
| Hepatitis Screening | Bauchi South | Bauchi North | 8.532* | 1.975 | .000 | 3.887 | 13.176 |
| | | Bauchi Central | 4.007 | 1.771 | .062 | -.157 | 8.1734 |
| | Bauchi North | Bauchi South | -8.532* | 1.975 72 | .000 | -13.176 | -3.8872 |
| | | Bauchi Central | -4.524* | 1.803 95 | .033 | -8.765 | -.2832 |
| | Bauchi Central | Bauchi South | -4.007 | 1.771 | .062 | -8.173 | .157 |
| | | Bauchi North | 4.524* | 1.803 | .033 | .283 | 8.765 |
| | | Bauchi North | 2.484* | .759 | .003 | .698 | 4.269 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Premarital Pregnancy test | Bauchi South | Bauchi Central | **2.169*** | .681 | **.004** | .568 | 3.771 |
| | Bauchi North | Bauchi South | **-2.484*** | .759 | **.003** | -4.269 | -.698 |
| | | Bauchi Central | -.314 | .693 | .893 | -1.944 | 1.316 |
| | Bauchi Central | Bauchi South | **-2.169*** | .681 | **.004** | -3.771 | -.568 |
| | | Bauchi North | .314 | .693 | .893 | -1.316 | 1.944 |
| *. The mean difference is significant at the 0.05 level. | | | | | | | |

## Discussion of Findings

Findings from the study reveal that public health policies have a significant impact on health promotion among household residents in Bauchi State. The finding further shows that no significant differences were observed based on educational qualifications. However, the difference was observed based on the senatorial zones of the State. The finding of the study was in line with the finding of Thomson et al. (2018), on the effects of public health policies on health inequalities in high-income countries, the finding reveals that the results were mixed across the public health domains; some policy interventions were shown to reduce health inequalities (e.g. food subsidy programmes, immunizations), others have no effect and some interventions appear to increase inequalities (e.g. 20 mph and low emission zones). Premarital screening (PMS) was found to have a significant impact on health (Ibrahim et al. 2013; Alhosain, 2018 & Lim, 2009). Genotype and HIV/AIDs screening were found to have a significant impact on public health (Rouh AlDeen, 2021; Balarabe et al., 2016 & Pratik, 2021). Access and utilization of ITNs were reported to have a significant impact on health promotion as they serve as a barrier for human vector contact (Chimaka & Okafor 2020). Similalrly, Andy et al., (2016) reported in his study that 87.9% were aware that ITN can be used in malaria prevention while 78.7% posited that ITN is an important tool in preventing malaria during pregnancy. Of the 64.8% who used ITN during pregnancy, only 30% use it every day while 12.9% use it once a week. It is concluded that pregnant women in this setting have adequate knowledge about ITN. Most of them use ITN but frequency or rate of use is poor. Enlightenment program about proper and adequate use of ITN in malaria prevention is warranted.

## Conclusion

Based on the findings of the study, it was concluded that public health policies such as pre-marital HIV/AIDs Screening, Hepatitis Screening, and Genotype screening free distribution of mosquito nets were found to have an impact on the health promotion of household residents in Bauchi State.

## Recommendation

Based on the conclusion drawn from the study, it was recommended:

i. Strict measures should be put in place to ensure adherence to the pre-marital screening laws and policies in the State.
ii. Annual distribution of ITNs should be maintained by the government as it has an impact on public health promotion.

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