Contents lists available at www.innovativejournal.ihn

INTERNATIONAL JOURNAL OF NURSING DIDACTICS

homepage: http://innovativejournal.in/ijnd/index.php/ijnd

ISSN: 2231-5454

# Expectant Mothers' and Mothers Awareness on Newborn Screening in the Largest Barangay of Catbalogan City, Philippines

Rheajane A. Rosales, Jeanette B. Sabio, Dolores L. Arteche, Jackie Lyn R. Escala, Charleth Joy S. Gonzales

College of Nursing & Health Sciences, Samar State University
Email: hea_rn@yahoo.com

**DOI: http://dx.doi.org/10.15520/ijnd.2015.vol5.iss10.34.01-04**

Keywords: Newborn Screening, Maternal and Child, congenital anomalies.

## INTRODUCTION

Pregnancy is always faced with all sorts of fears on how healthy the baby is inside the womb of a mother. Though there are many diagnostic procedures during pregnancy, there are other metabolic conditions that may arise during this time and could progress into complications if not treated right away when the child is born (Maternal and Child Health Nursing, 2010). The answer is laid upon R.A no. 9288, known as Newborn Screening (NBS) Act of 2004 mandated in the Philippines.
NBS is a simple method to find out if your baby has a higher risk for congenital metabolic disorder that may lead to retardation and even death. It is a preventive health service that should be available to all neonates and encompasses the entire essential element to have access to a screening system that has optimal quality performance (DOH, 2006).

Early detection of disorders and conditions detectable through newborn screening is vital. Therefore, expectant mothers' and mothers' should know the importance of such screening. Although the newborn screening detects conditions that cannot be cured, early management can be beneficial in most cases. Hence, this study is needed for the development of campaign drive program that can be used to broaden the knowledge of the parents regarding newborn screening.

## RESEARCH OBJECTIVE

This study aimed to assess the expectant mothers' and mothers' awareness on newborn screening in the largest barangay of Catbalogan City Philippines. Furthermore, It proposed a Newborn Screening Campaign Drive Program.

## METHODOLOGY

### *Design:*

The investigators utilized the descriptive-correlational method of research. Descriptive design because this investigation described the expectant mothers' and mothers' awareness on newborn screening. Furthermore, correlational analysis was employed to determine relationship between and among selected variables.

### *Participants:*

A non-probability purposive sampling was utilized in this investigation. Out of the 150 invited respondents, 67% or 100 respondents participated in the study. Inclusion criterions were set for study participation respondents as follows: (1) expectant mother of Brgy. Canlapwas Catbalogan city, (2) Mothers who delivered their babies in the months of June to September respectively (3) consented to participate in the study. In data gathering, respondents were approached personally and professionally at the time convenient to them. After a given time, the questionnaires were recollected.

### *Ethical Consideration:*

The study protocol was approved by the Ethics Committee of Samar State University prior to the conduct of the investigation. Prior to the interview, consent forms were obtained from the respondents. Furthermore, precautionary measures were taken into consideration to safeguard the study respondents' legal rights. Confidentiality and anonymity of the respondents were maintained by only a code number on the questionnaire.

### *Instrumentation:*

This study utilized a questionnaire divided in to two parts. Part I is intended to determine the respondents profile in terms of Age, Civil Status, Educational Attainment, and Family Monthly Income.

Part II of the questionnaire will assess the awareness of respondents on newborn screening in terms of its nature, availability and accessibility of the program, and its significance. The researchers utilized a 4 –point likert type scale with 0.91 reliability rate by Emiliano M. Suayan and Jieneth T. Angoy.

### *Data Analysis:*

Data were computed and analyzed using Statistical Package for Social Sciences (SPSS version 11.0). Descriptive and inferential statistics were utilized to analyze the data. Descriptive statistics included frequency, percentage, mean and standard deviation to describe the demographic characteristics, and awareness on newborn screening.

Pearson r coefficient correlation and Fisher' T-test were utilized to determine correlation of variables and significance of the correlation respectively.

## MAIN RESULTS

**Table 1 provides information on the respondents' demographic characteristics. Majority of the respondents are within the age range of 15-25 (55%). Single (61%), College level (37%), and having an income of below P5,000 monthly (71%).**

Table 1. Demographic Characteristics of Respondents

| Characteristics | | Expectant Mothers N (%) | Mothers N (%) | Total (N= 100) |
|---|---|---|---|---|
| **Age** | **15- 25** | 31 (31) | 24 (24) | 55 (55) |
| | **26- 35** | 15 (15) | 23 (23) | 38 (38) |
| | **36- 45** | 4 (4) | 3 (3) | 7 (7) |
| **Civil Status** | **Single** | 35 (35) | 26 (26) | 61 (61) |
| | **Married** | 15 (15) | 24 (24) | 39 (39) |
| **Educational Attainment** | **Elementary level** | **3** (5) | **4** (6) | 11 (11) |
| | **Elementary graduate** | 2 (2) | 1 (1) | 3 (3) |
| | **Secondary level** | 11 (11) | 12 (12) | 33 (33) |
| | **College level** | 23 (23) | 4 (14) | 37 (37) |
| | **College graduate** | 4 (4) | 8 (8) | 12 (12) |
| **Monthly Income** | **Below P 5,000** | 34 (34) | 37 (37) | 71 (71) |
| | **P 5,001-P10,000** | 12 (12) | 11 (11) | 23 (23) |
| | **P10,001-P15,000** | 3 (3) | 1 (1) | 4 (1) |
| | **P15,001-P 20,000** | 0 (0) | 1 (1) | 1 (1) |
| | **P20,001-P25,000** | 1 (1) | 0 (0) | 1 (1) |

Table 2. Respondents' Awareness on Newborn Screening

| **A. Nature of Newborn Screening** | **Mean** | **Interpretation** |
|---|---|---|
| Newborn Screening is a simple procedure to find out if your baby has a rare metabolic disorder. | 2.19 | Not So Aware |
| Newborn Screening is a program of Department of Health. | 2.45 | Not So Aware |
| The attending physician or the birth attendant is responsible in explaining the screening test results to the parents. | 2.60 | Aware |
| Newborn Screening test aides in early detection of five congenital diseases of newborn. | 2.38 | Not So Aware |
| The baby must undergo NBS after 24 hours but not later than three (3) days of his birth. | 2.36 | Not So Aware |
| Newborn Screening is safe. | 2.32 | Not So Aware |
| Newborn Screening test is done through heel prick method to get blood samples. | 2.4 | Not So Aware |
| The blood samples will be sent in the Newborn Screening Laboratory and the result will be released 7 to 14 working days after newborn screening sample is received in the NBS center. | 2.25 | Not So Aware |
| **Weighted Mean** | **2.37** | **Not So Aware** |
| **B. Availability and Accessibility of the Program** | | |
| Newborn Screening is available in participating newborn screening facilities (hospital, lying ins, rural health units and health centers). | 2.45 | Not So Aware |
| The facilities providing NBS are within accessible locations. | 2.36 | Not So Aware |
| The NBS program is within financial capability of the family. | 2.25 | Not So Aware |
| **Weighted Mean** | 2.35 | Not So Aware |
| **C. Significance of Newborn Screening Program** | | |
| Newborn Screening test is important to ensure the infants' good health condition. | 2.72 | Aware |
| It helps detecting metabolic disorders of an infant so that it would not lead to further deterioration of the child's health status. | 2.65 | Aware |
| When diagnosed early of disorders, there is a chance of excellent prognosis and the baby may be spared from lifelong impairment and can enjoy normal life. | 2.7 | Aware |
| If my baby is not screened, it could lead to severe mental retardation and even death. | 2.38 | Not So Aware |
| **Weighted Mean** | **2.6** | **Aware** |

Table 2 presents the awareness of the respondents' in terms of its nature, availability and accessibility and its significance.

In terms of its nature, majority of the respondents are aware that "the attending physician or the birth attendant is responsible in explaining the screening test results to the parents" with a mean of 2.60. However, it is worth noting that the respondents are not so aware that "Newborn Screening is a simple procedure to find out if your baby has a rare metabolic disorder" with a weighted mean of 2.19.

Table 3. Summary of Grand Mean on Level of Awareness on Newborn Screening program

| Level of Awareness on Newborn Screening | Weighted Mean | Interpretation |
|---|---|---|
| A. Nature of Newborn Screening | 2.37 | Not So Aware |
| B. Availability and Accessibility of the Program | 2.35 | Not So Aware |
| C. Significance of Newborn Screening Program | 2.60 | Aware |
| **Grand Mean** | **2.44** | **Not So Aware** |

Table 3 presents the summary of the grand mean on level of awareness on newborn screening program. Out of the three subscales, the subscale letter C posted the highest mean of 2.60 which means that the respondents were "aware" on the "Significance of Newborn Screening Program. While, subscales A (wm=2.37) & B (wm=2.35) presents that respondents were "not so aware" on the "Nature of Newborn Screening" and its "availability and accessibility". As reflected in the table, the result showed that the respondents are "not so aware" on newborn screening program with a grand mean of 2.44.

Table 4. Relationship Between Respondents' Level of Awareness on Newborn Screening and their Profile

| Level of Awareness on NBS VS | r-values | p-values | Evaluation/Decision |
|---|---|---|---|
| Age | 0.07 | 0.4889 | NS/Accept Ho |
| Civil Status | 0.17 | 0.0908 | NS/Accept Ho |
| Educational Attainment | 0.30 | 0.0024 | S/ Reject Ho |
| Monthly Income | 0.22 | 0.0279 | S/ Reject Ho |

Table 4 depicts the relationship between respondent's level of awareness on NBS and their profile. As seen in the table, paired r-values and p-values of age (r=0.07 & p= 0.04489) and civil status (r=0.17 & p=0.0908) illustrates no significant relationship to the respondents level of awareness. However, educational attainment (r=0.30, p=0.0024) and Monthly Income (r=0.22, p=0.0279) shows significant relationship to respondents' level of awareness on NBS.

## DISCUSSION

This study investigated the expectant mothers and mothers' awareness on newborn screening in the largest baranggay of Catbalogan City Samar, Philippines. Furthermore, it also tests the relationship between the respondents' profile and their level of awareness on NBS.

According to Department of Health (2012), coverage of NBS in Eastern Visayas Philippines has increased in the past seven years from 2% coverage in 2006 to 49% in 2012 and one of the components of NBS system is education to health professionals, general public, politicians, and parents. Despite all these, the results insinuate that the respondents were "not so aware" of the NBS. This implies that these expectant mothers and mothers have heard about NBS but do not feel that they are well educated. This substantiate the results of previous studies indicating that new mothers possess limited awareness of the newborn screening program, its purpose, including the diseases being tested (Suriade, 2004; Pollitt, 1997; Hargreaves, 2005; & Davey, 2005).

There could be reasons why in spite of its wide implementation worldwide, results still revealed that respondents are not well educated about NBS. According to the study of Faulkner, Feuktbalum, Graham, Bolstad, & Cunningham (2006), Although 4/5 of respondents believe NBS is very important to the prenatal care providers, only 1/3 discuss it with all their patients. Likewise, only 61% of providers give their patients the NBS educational booklet. Moreover, another study suggests that most current NBS brochures should be revised to make them more readable and user- friendly for parents. 81% needed improvement in getting to the point quickly and making it easy for parents to identify what they needed to know or to do. None of the brochures scored high in all 22 criteria on the user-friendliness checklist. In addition, the study of Swann (2007) revealed that parents were not well informed about what the heel prick involves at present. Nevertheless, they see it as a routine procedure and do not think about the possibility of refusing it.

Meanwhile, present study also depicts that there is a significant relationship between the respondent's level of awareness and their educational attainment. As reflected in the table, majority of the respondents were able to reach college level but are undergraduates. Yet, result still revealed that respondents are "not so aware" of NBS program. This imply that the lower educational attainment, the lower the respondents' level of awareness. Indeed, educational attainment can greatly affect in making choices for the growth and development of their children. According to Miller and Rogers (2005), greater education for mothers contributes to new skills, beliefs, and choices about sound health and nutritional practices that directly influence and proximate determinants of child health. Therefore, if the person has higher educational attainment, he/she will have better understanding of choices best for their children's health.

This study also shows that there is a significant relationship between the respondents' level of awareness and monthly income. This result supports the study of Brown (2009) that mothers with higher income were 3.69 times more likely to receive information about NBS before their infants' birth than mothers with lower income. These findings show inequality when it comes to the right of the patients to receive information. Recipients of care should be treated just and should receive equal information regardless of their monthly income or educational attainment.

## CONCLUSION

Expectant mothers and mothers need to be imparted with complete information about the newborn screening test at a time which is favorable for the assimilation of this information regardless of their monthly income and educational attainment. Furthermore, healthcare providers must divulge all information about newborn screening through health education, pamphlets, and other useful forms of communicating this information to ascertain better understanding.

## RECOMMENDATIONS

Institutional and community health care providers should have a formal education on NBS in order to have a broader understanding of the programs. Thus, parents would receive correct information about NBS. Furthermore, Government should continue to expand their programs in maternal and child through symposiums, campaigns and activities that it could reach far flung areas. In addition, pamphlets should be

concise, and readable. Finally, primary heath care providers must explain NBS program orally or through distribution of brochures, modules, or pamphlets during the third trimester of their prenatal visit.

## ACKNOWLEDGEMENTS

The authors would like to express gratitude and thanks to the incomparable assistance given by many individuals who contributed to the forecasting and directing of this study. Special thanks to all the expectant mothers and mothers who participated in this study.

## REFERENCES

[1]. Davey A. Orland K. Nick S, Brown R. (2009). New Mothers' Awareness of Newborn Screening, and their Attitudes to the Retention and Use of Screening Samples for Research Purposes. Life Sciences, Society and Policy, 1(3), 41.

[2]. Hargreaves K. Informed choice and public health screening for children: the case of blood spot screening. Health Expectations 2005; 8:161-171.

[3]. Hargreaves K, Stewart R. & Oliver S. (2005). Informed choice and public health screening for children: The case of blood spot screening. Health Expectations, 8 (2), 161-171.

[4]. Faulkner T, Feeuktbalum L, Graham S, Bolstad J, Cunningham G, (2006). The Newborn Educational Gap: What Prenatal Care Providers do Compared with what is Expected. American Journal Obstes Gynaecol. Jan: 194 (1): 131-7.

[5]. http://www.doh.gov.ph/content/newborn-screening.html.Departmentof health.

[6]. Miller J. E., & Rogers Y.V (2009). Mother's Education and Children's Nutritional Status: New evidence from Cambodia. Asian Development review, 26 (1), 131-165.

[7]. Pollitt R. Neonatal Screening for Inborn Errors of Metabolism: Cost, Yield and Outcome. Health Technol Assess 1997; 1, 7: 1-202.

[8]. Pillitteri A. (2010). Maternal and Child Health Nursing: Care of the childbearing and childbearing family. Lippincott Williams & Wilkins.

[9]. Suriadi C. Factors Affecting Mothers' Knowledge of Genetic Screening. Aust N Z J Obstet Gynaecol. 2004; 44:30-34.

[10]. Swann C, Bowe K, Kosmin M, & McCormick G. (2003). Teenage Pregnancy and Parenthood: A Review of Reviews. Evidence briefing. London: Health Development Agency