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MATERNAL HEALTH POLICIES IN INDIA WITH SPECIAL REFERENCE TO ASSAM

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Abstract

Assam, the gateway to North East of India is situated in the extreme north east of the country. The state is quite multicultural in nature. Apart from the diverse èthnic groups there are various other communities migrated from other parts of the country. Assam ranked 13 in Women literacy rate, while ranked top in the list of women suffering from anaemia in India. There are numbers of govt. Schemes relating to women's health. But the fact remain is that women are not aware of those policies and half of the policies have been laying on the tables of the bureaucrats without implementation. And people are not receiving the benefits of those policies due to corruption of the office bearers. This paper will try to focus on the govt policies available for maternity benefits. Success and failure of the policies and reason behind. Level of awareness is also considered to be an important factor for the success of public policies, so the paper will try to focus on that. Paper will be based on primary sources apart from secondary sources.

Keywords: Mamoni; Mamta; Majani (Maternal Health Policies named after the name of girl child

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The unawareness of their own history of struggle and achievement has been one of the major means of keeping women subordinate.

Gerda Lerner.

INTRODUCTION

Situated in the North-Eastern region of India, Assam has a very old past with composite culture. It played a glorious role in the country's freedom movement and produced a host of martyrs – men and women. Assam is mainly an agricultural state where almost eighty percent (80%) of population live in villages. Human resources are not fully utilized; the women folk who form half of the population did not have the opportunities to contribute their share in the developmental process.

Despite constraints, women are passing through a stage of social change. Traditionally, conservatism marked the social life but even before the inroads of modernism, Assamese society has been relatively free from many restraints as found in other parts of India. Assamese women have been known as good weavers, preparing cloths for the members of the family. The indigenous people of Assam are composed of a number of ethnic communities and tribes in the plain and hills of Assam. Women in tribal areas enjoyed more freedom of movement and association compared to their counterparts in the plains.

In India, women have achieved a new height to bring glory for them and for the country. But it is equally true that in the same India where, more women have jumped to meet death. Due to patriarchy women generally enjoy a subordinate position than male.

Violence against women has become the norm of the day. Women's health is always considered as a matter of lesser importance. Frequent pregnancy, pregnancy at a very early or immature age is very common particularly in remote areas. Besides, high maternal mortality, women in India also suffer silently from several types of reproductive morbidities.

Maternal health is the health of women during pregnancy, childbirth and the postpartum period. It encompasses the healthcare dimensions of family planning, preconceptions, prenatal and postnatal care in order to reduce maternal morbidity and mortality.

The Maternal Mortality Ratio in India has been decreasing over the years; it has gone down to 178 in 2010-12 from 327 in 1999-2001. This may be attributed due to wide range of Government's Mother and Child schemes and increased in the institutionalised birth. Among the states, Assam topped the list in highest mortality with 328 and minimum in Tamil Nadu with 90 during the period 2010-12. Table- 1 (Source: Office of the Registrar General, India.)

Table-1:Maternal Mortality Ratio of Major States in India

State/ Union Territory	1999-2001	2001-03	2004-06	2007-09	2010-12
Andhra Pradesh	220	195	154	134	110
Assam	398	490	480	390	328
*Bihar/Jharkhand	400	371	312	261	219
Gujarat	202	172	160	148	122
Haryana	176	162	186	153	146
Karnataka	266	228	213	178	144
Kerala	149	110	95	81	66
*Madhya Pradesh/Chhattisgarh	407	379	335	269	230
Maharastra	169	149	130	104	87
Odisha	424	358	303	258	235
Punjab	177	178	192	172	155
Rajasthan	501	445	388	318	255
Tamil Nadu	167	134	111	97	90
*UP/ Uttarakhand	539	517	440	359	292
West Bengal	218	194	141	145	117
INDIA	327	301	254	212	178

Source: Office of the registrar general. India./ * : the figure is for the undivided state.

The Table above shows the picture of maternal mortality ratio in major states in India, the scenario is not very encouraging for Assam. Because the trend

from the period 1999-2001 to 2010-12 is unsatisfactory for the state. While for the state like Uttar Pradesh/ Uttarakhand, the mortality ratio was 539 during 1999-2001 and later it was gone down to 292 during 2010-12 periods, which is very encouraging for a state's human development profile.

Background of the study:

The healthcare administration or its paperwork in India is a multifaceted or very complex one. Various institutions at different levels are involved in the process; i.e from form submission to receipt the actual effect. Health security here is determined by the wisdom, policies, and functioning of multiple agencies. The Nation has number of health policies; equally it has number of agencies through which the policies have to move on. During the process, due to lack of knowledge of the target group, malpractices of the office bearer, complex structure, most of such health policies remain unproductive.

Amidst all these problems, Assam progressed gradually in terms of health security in case of some indicators and remained either stagnant or worsened in case of some others. On one hand it is improving in case of life expectancy on the other hand in terms of Infant Mortality Rate (IMR), Assam's status is very depressing. In case of the medical attention at delivery, Assam's scenario in rural areas is improving very slowly, which was 36.7% in 2008 goes up to 69% in 2012. (Source: Sample Registration System, Office of the Registrar General, India/ Table-3.) The Infant Mortality Rate (IMR) has slightly reduced from 61 per 1000 live births in 2009 to 58 per 1,000 live births in 2010. Assam continues to rank among the four highest IMR states in the country. (Source: Deptt of Health Service, Assam)

Health security is one of the neglected domains of our social life. Particularly if she is a woman. Woman and her health have never been an issue for concern, particularly in rural and in some parts of urban areas of the state girls' health status have always remained as a neglected issue. It has been observed that within the family system male are always given preference over the female. Whether it is decision making or may be in food distribution. Woman or girl children, in majority of the families enjoy a subordinate position. Son preference is a big issue which always put under the carpet, but a girl or wife has to suffer silently throughout her life.

All pregnant women face some level of maternal risk. While the killing of persons by insurgents or death in road accidents, etc, are always an issue of social and media attention; children dying of malnutrition, mothers dying of anaemia, pregnant women dying due to lack of medical attention, complications of pregnancy, female infanticide, foeticide, failed to provoke people into social action and protest.

According to the district Level household Facility Survey, Assam, 2007-08, in Assam 74.3 percent of the women who had their last birth during the three year period preceding the survey, had received at least one antenatal care (ANC) service. Majority of women (83.5%) had received the service from a government health facility. In Assam the ANC coverage is reasonably good with more than 83 percent of women receiving ANC irrespective of socio-economic background. This has been progressing beccause of successful implementation of Janani Suraksha Yojana. (Rashida Begum. Report).

The population of Assam as per the Census of 2011, is 3.12 crore. The population of the state has grown by 16. 93% from 2001 – 2011. The sex ratio is 954 female to 1000 male. In Guwahati city total population is 962,334. **Male** 498,450 and Female 463,884. 90,029 are children , among them 46,401 male and 43,628 are female children. Following table highlights the Health profile of Assam.

Table-2: Health profile of Assam

Population of the State, as per 2011 cencus	Sex Ratio	Birth Rate	Death Rate	Infant Mortality Rate	Growth rate	Maternal Mortality rate
31,169,272	954	22.5	7.9	55	14.6	328

In Assam, some studies have carried out to get the actual picture of the maternal condition of the women in Assam. Studies show that the anaemia in pregnancy continues to be a health problem. Assam with the highest maternal deaths in the country has

managed to drop its number of maternal deaths in the last few years. However they continue to be the highest in the country. (Source: The Blog; Maternal Health in India: Where we are today. 6th Aug, 2013) Assam is struggling with challenges such as difficult terrain and inaccessibility to health services as a percentage of the population live on islands along the Brahmaputra, a majestic river, which can be aggressive and harsh in the rainy season. Earlier there were no health services available in these areas. For the last eight years, a public private partnership between the Govt of Assam and civil society has been running boat clinics to reach the remote, backward areas and saving lives.

Health security of a particular state is determined by the wisdom, policies and functioning of multiple agencies. For example the union govt of India have been adopting specific policies for the health sector, besides Govt of Assam has also formulated various policies to provide some relief to maternal health of women particularly of poor socio-economic background. The Assam Govt introduced the **'Mamoni'** scheme in the state under the National Rural Health Mission (NRHM) with the aim to reduce Maternal Mortality Ratio. Mamoni scheme will encourage the pregnant women to undergo 3 antenatal checkups so that during pregnancy at earliest and proper treatment could be offered. The scheme provides every pregnant woman a booklet on the tips of safe motherhood and new born care. Afterwards the pregnant women receive an amount of 1000 rupees in the second and third antenatal checkups for expenses related to nutritional food and supplements. Another important scheme that seeks to reduce IMR and MMR, by insisting on a post delivery hospital stay of 48 hours of the mother and the newborn is **'Mamta'**. ' **Majoni'** another scheme related to girl child protection. It is about social assistance to all girl children born in the family up to second order is given a fixed deposit of Rs 5000/ for 18 years. On her 18th birthday the girl will be able to encash the fixed deposit, if in any case the girl gets married before 18 years the fixed deposit will be forfeited. (Appendix)

The success of any Govt policy or schemes depends on its use or implementation. The above mentioned schemes are beneficial for the women particularly poor and underprivileged. Surprisingly, in spite of governmental measures to prevent or reduce IMR and MMR the result is not very encouraging in the state. (Table-1)

Although percentage of live births with medical attention have increased both in rural and urban area but rural part is still lagging behind in spite of government interventions through National Rural Health Mission (NRHM). The table-3 below demonstrates a detail scenario of some states of India with regarding to the live births.

Table-3: Percentage of live births where the mothers received medical attention at delivery

States	Rural					Urban					Proportion
	2008	2009	2010	2011	2012	2008	2009	2010	2011	2012	
Andhra Pradesh	62.6	66.5	84.4	87.5	89.4	93.7	95.5	98.1	98.6	99.2	1.11
Assam	**36.7**	**42.9**	**51.1**	**58.9**	**69.0**	**73.8**	**75.7**	**80.9**	**88.4**	**89.6**	**1.30**
Bihar	23.5	29.0	38.2	45.5	57.1	66.9	70.0	77.9	83.6	86.0	1.51
Chhattisgarh	30.7	35.9	43.0	50.3	60.5	65.6	68.9	76.9	79.2	81.7	1.35
Delhi	63.6	69.0	77.6	81.3	85.9	70.7	74.6	78.4	86.5	89.3	1.04
Gujrat	60.8	63.1	72.1	78.6	80.3	90.4	91.7	94.1	95.6	97.0	1.21
Haryana	40.4	44.2	58.9	66.9	72.4	69.0	71.7	74.0	77.7	80.0	1.10
Himachal Pradesh	43.9	47.1	55.7	62.3	67.3	83.7	84.9	89.6	91.1	91.8	1.36
Jammu &Kashmir	56.4	59.4	65.3	70.1	75.7	87.9	89.9	93.0	95.6	95.6	1.26
Jharkhand	7.2	11.4	21.9	29.0	40.5	69.9	73.1	69.7	79.3	82.5	2.04

Karnataka	63.3	66.7	83.1	85.9	88.3	94.4	95.5	90.9	93.6	96.0	1.09
Kerala	98.9	99.4	99.5	99.6	99.7	99.8	99.7	99.6	99.5	98.8	0.99
Madhya Pradesh	37.4	42.7	54.8	62.0	68.0	81.0	84.6	86.9	91.0	92.6	1.36
Odisha	42.0	45.2	54.6	59.8	66.6	73.5	78.1	82.6	87.5	90.3	1.36
Punjab	48.9	51.5	59.9	66.8	75.0	69.8	71.4	81.4	85.3	90.1	1.20
Rajasthan	43.4	46.9	63.5	74.0	78.8	76.1	78.7	85.4	86.9	88.7	1.13
Tamil Nadu	78.7	80.8	85.8	87.5	87.8	99.3	99.6	98.5	99.1	99.5	1.13
Uttar Pradesh	18.2	26.0	36.6	44.7	50.2	44.5	52.8	58.2	67.6	73.4	1.46
West Bengal	49.4	56.6	61.8	66.5	71.2	82.6	87.1	84.3	87.8	89.2	1.25
Maharashtra	57.5	63.5	78.4	85.4	89.1	96.0	96.7	97.8	98.3	98.6	1.11
INDIA	**38.3**	**49.2**	**53.9**	**60.7**	**67.9**	**78.5**	**87.3**	**84.2**	**87.9**	**92.0**	**1.35**

Source: Sample Registration System, Office of the Registrar General , India

The table -3 above clearly shows a disparity between rural and urban areas with regard to the medical attention to the mothers at delivery.

The objective of the paper is to analyse and study the use and benefits of the Government schemes in rural area and also why the Govt schemes are mostly remains unproductive? Segunbari is a suburban area which is 70km away from the state capital city Guwahati. It is slightly a hilly area with nearly 500 families. I have identified 5% of pregnant women and the women who have recently gave birth to babies.

METHODOLOGY

The paper is based on the survey carried out by Interview and questionnaire method . Samples were identified with the help of a office bearer of Govt Medical Hospital who is known as 'Asha worker' means, Working for Hope, and 5% samples of total population of the area were selected on random basis from the hospital register.

Table-4: Socio economic background of the respondents

Employment of respondents			Employment of husband		
Yes	No	Total	Yes	No	Total
18	07	25	23	2	25

The table-4 above shows that 18 respondents are employed, they work as helper in the houses of other people to support their family and 7 respondents are home maker they donot go outside to earn. Husbands of the 23 respondents work different types of jobs like driver, car mechanic, plumber, electrician, and painter. Moreover, with regard to the income of the family the table 5, below shows the details -

Table-5: Economic status

Monthly Income	Nos of Family
Upto 5000	07
Upto 10,000	18
Total	25

Only 18 families monthly income is upto 10,000/ while 7 families earn upto 5000 / monthly. It shows the poor economic conditions of the respondents. One significant point should be noticed that in spite of the low family income the size of the families are quite large, as it has been found that most of the respondents

live in joint families. The maximum size of the family is ten, and minimum size is three. Regarding the number of children the respondents expressed very positively about the family planning and preferred two children. It has been found that they are very articulate about the size of their immediate family with 2 children. The following table shows the number of children of the respondents.

Table-6: Number of Children

Size of the family	Nos of Children
Up to 3	01
Up to 2	10
Up to 1	12
Pregnant	02
Total	25

The respondents were asked about the govt schemes that are available for the pregnant women and for the protection of girl child as mentioned above, the table below will reveal the actual picture of the state of awareness level of rural women vis-a-vis the policies.

Table -7: Awareness of the respondents about the Govt schemes regarding the Maternal Health

Response	Respondents
Yes	02
No	21
No Comment	02
Total	25

The table above reflects a very depressive scenario as the target group of the Govt schemes are not aware of the policies and schemes those are available for their benefit. Only two respondents told that they know about the schemes like MAMONI and MAJANI.

Observation: It has been observed after the analysis of the questionnaire that the target group of the policies are largely ignorant about the schemes and policies framed for their benefit. The women work in other's house as domestic helper are aware of some other issues like, voter's card, certificate of permanent residence etc, yet majority of them are unaware of the existing healthcare policies. Another point that has been observed during the survey that some respondents have knowledge on the schemes but they do not want to get the benefits of those policies due to the complexity involved with the entire procedure.

FINDINGS

After the first information report from the respondents it has been found that in spite of reduction in the MMR and IMR the scenario in rural areas have remained the same. Despite various schemes introduced by the government to protect the lives of the pregnant women and to protect the lives of infants, it failed to reach out the rural and backward areas, which are the actual target group of the schemes. It has been observed that there is a gap between the government and the people. The poor, uneducated people are not able to demand the benefits of the government schemes, as per the version of respondents the entire process of the schemes is quite tough for them and the office bearer attached to these schemes are also not supportive enough. In addition, some other reasons that have found to be responsible for such situation are:

- Lack of awareness.
- Poor decision making powers of women.
- Lack of control over mobility.
- Lack of access to money required to meet the cost of healthcare.

SUGGESTION

There should be proper coordination between the government office bearer and people. One suitable monitoring mechanism must be developed to see the proper execution of such schemes. Framing of schemes with zero implementation is meaningless, and that is the reason why most of the government policies remain unproductive.

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REFERENCES

Chiranjivi J. Nirmal (2012) Ed. Human Rights in India: Oxford University Press.

Mahanta Aparna(2008): Journey of Assamese Women: 1836-1937:Publication Board Assam: Guwahati.

Dutta A.K.(2009) Ed.: Human Security in North East India: Anwesha Publication.

Debi Renu(1994): Women of Assam: Omsons Publications.

Hussain Wasbir(2010) Ed: Peace Tools and Conflict Nuances in India's North East.: A Wordweaves India Publication for Center for Development and Peace Studies,Guwahati, India.

The Times of India Report: Assam has highest maternal mortality rate: Oct 1; 2011

The Hindu Report: Assam records highest maternal mortality rate in the Country: March 5; 2010

The Blog: Maternal Health in India: Where We are Today: 6th Aug, 2013

Report: Health Indicators of Assam.(2010-12)

Goals for Chief Minister's Vision for Women and Children-2016.(Report)

The Policies: Majani/ Mamta/Morom/Mamoni

Maternal & Child Mortality Rates: sample Registration System: Office of the Registrar General, India. &th July, 2011

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THE DIFFERENCES BETWEEN THE INFLUENCE OF GROUP INVESTIGATION AND JIGSAW COOPERATIVE LEARNING METHODS TOWARD STUDENTS' LEARNING OUTCOMES VIEWED FROM MIDWIFERY STUDENTS' SCIENTIFIC ATTITUDE

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Abstract

The purpose of this study is to analyze the influence of group investigation and jigsaw cooperative learning methods toward students' learning outcomes viewed from midwifery students' scientific attitudes. It's a quasi-experimental research design, which is done by testing the Group Investigation and Jigsaw methods with scientific attitude and then comparing the results of the two groups. The samples were 45 and 44 Midwifery students. The average rate for the Group Investigation group is 76.43 and the Jigsaw group is 72.20. By analyzing using *t-test*, there was an influence in students' learning outcome (*p*-value $0.042 \leq 0.05$), and the *p*-value for students' scientific attitude toward the student learning outcome is $0.004 \leq 0.05$. The analysis of the interaction between Group Investigation and Jigsaw methods, as well as the scientific attitude of students toward the student learning outcome using *Anava* show that it has *p*-value of $0.491 \geq 0.05$. Both Group Investigation and Jigsaw method are influential in increasing students' learning outcomes. However, the Group Investigation method is more influential in increasing student learning outcome than the Jigsaw method. Moreover, the students' scientific attitudes affect their learning outcome. In addition, the cooperative learning methods and the scientific attitude do not interact in the results of students' learning outcome. This research could be a consideration in arranging the preparation of learning as a strategy in order to reach higher score in the students' learning outcome, which is driven by high scientific attitudes in each of the learning process. Therefore, it is expected that there is high learning spirit in Midwifery subjects.

Keywords: Group Investigation Method, Jigsaw Method, Scientific Attitude, Learning Outcome

BACKGROUND

A midwife is a person who has successfully completed a midwifery education program that is recognized in the country where it is located and that is based on the essential competencies for basic midwifery practice and the framework of the global standards for midwifery education (ICM, 2015). The midwife works in partnership with women to give the necessary supports, care and advice during pregnancy, labour and the postpartum period, to conduct births on the midwife's own responsibility and to provide care for the newborn and the infant (Fullerton, 2013).

Access to a qualified competence midwife during pregnancy and birthing process would prevent as many as 350,000 maternal deaths each year from pregnancy related complications and the high burden of newborn morbidity and mortality (WHO, 2012). Therefore, the government through the Ministry of Health manages the competency of midwifery education in order to achieve the desired degree of health.

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With an eye to carry out the provisions of the government in providing qualified competence of midwives, midwifery educational institutions held educational process based on the core set of midwifery competencies. Midwifery students also apply the best evidence based practice for their clients, based on the core competencies (ICM, 2010). A good method of learning is needed to stimulate students to be competent (Thompson, 2009). So, it is important to choose the best method to attain the best results according to the purpose of learning (Suhaenah, 2010).

Learning is a process of interaction between educators and learners with learning resources as well as the environment, and it is the core of the educational process (Arends, 2007). The composition of curriculum in the midwifery education program as vocational degree program is 60% of practice learning and 40% of theory learning (BPPSDM, 2014). In the process of learning in higher education, lecturers should have a strategy to allow students to learn more effectively and efficiently, and to improve the students' soft skills. One strategy to achieve the expected goal is to use appropriate learning methods. The selection of the appropriate method in accordance with the learning materials can help the students to understand a concept more easily. Therefore, the determination of learning method should be started from looking at the students' real conditions and in accordance with the characteristics of the subjects (Suradi, 2006).

To get a good result in the theory learning, we can apply cooperative learning method (Sanjaya, 2006), which is based on a scientific attitude. The scientific attitude is an individual's tendency to act or behave in solving a problem systematically through scientific measures. This attitude is characterized by students' curiosity, critical thinking, objectives, responsibilities, willingness for discoveries, appreciation to other people's work, diligence, honesty, conscientiousness, respect to other people's opinion, acceptance to new ideas, and spirit to learn (Guneysu, 2010). A cooperative learning method is believed to be able to give chances for students to involve in discussions, so it should be based on scientific attitude.

A cooperative learning method has many advantages over conventional learning (Aziz, 2010). The cooperative learning can develop social skills such as cooperation and the formation of accepting differences, which can help students to understand difficult concepts (Lie, 2007). On the other hand, in conventional teaching, teachers use teaching methods that require activeness to present experiences related to the concept that is learned. The syntax conventional learning models comprises of: 1) the teacher delivering the material verbally, 2) the teacher held a question and answer to the individual student, 3) teachers to assign work to students individually, 4) together to discuss assignments, 5) teacher and pupil concluded the material, 6) provision of evaluation (Suyatno,2014).

Conversely, cooperative learning method has several types, which are *write-pair share, Group Investigation, Students Teams Achievement Divisions (STAD), Teams-Games-Tournament (TGT), Team Assisted Individualized (TAI) and Jigsaw* (Guneysu, 2010). We have applied group investigation and Jigsaw method in this paper because we expect that students can get used to study independently both in groups and individually, in order to solve a problem or task. It also expected that the students can cooperate and share with their friends as a peer group.

The purpose of this study was to analyze the differences between Group Investigation and Jigsaw cooperative learning methods toward the students' learning outcomes viewed from their scientific attitudes.

There are three research questions based on the hypotheses in this study:

1. How are the differences of learning outcomes between Group Investigation and Jigsaw methods?
2. How are the differences of students' scientific attitudes towards learning outcome?
3. How is the interaction between Group Investigation versus Jigsaw cooperative learning methods and the students' scientific attitudes towards their learning outcome?

METHOD

Design

This research used a quasi experimental design by testing the influence of teaching methods towards learning outcomes through comparing the learning outcomes in Group Investigation method group and the learning outcomes in Jigsaw method group.

Population and Sample

The population was all students in midwifery program of Health Polytechnic of Health Ministry Surakarta. The actual population was the students of 1st grade at Diploma-IV of Midwifery. It used total sampling of 45 and 44 students.

Variable

There are three variable, namely the cooperative learning methods (there are group investigation and Jigsaw) as an independent variable, the learning outcome as a dependent variable, and the scientific attitudes as an attribute variable.

Learning outcome means the result of the final evaluation of the learning process, which is indicated in scores with test instruments.

Scientific attitude is the individual's tendency to act or behave in solving a problem systematically through scientific measures. The characteristics are having the attitude of curiosity, critical thinking, being objective, willingness to discover, appreciation of other people's work, diligence, and being open (Suryawati, 2010). The components of the scientific attitude are cognitive, affective, and psimotorik.

Group investigation method is a learning method that requires the students to form small interest groups and to take an active role in determining their own learning goals and processes (Bounds, 2009). They have to plan and implement their investigation, synthesize the group members' findings, and make a presentation to the entire class. Class is divided into small heterogeneous groups, and each group consists of four to five students. Students select topics to study and then every group decides what subtopics are to be investigated. The steps in this phase are: encounter puzzling situation, explore reaction to the situation, formulate study task and organize for study, independent and group study, analyze progress and process, and recycle activity. The main part of this model is presenting the final report. All the groups meet and reconstitute the whole class as a social unit. The schedule of presentations is posted, and each group knows how much time it has for its presentation. After each group's turn, the members of the audience voice their reactions to what they saw and heard.

Jigsaw method is a type of cooperative learning that consists of several members in one group who responsible to control the parts of the study material and at the end, each of them has to teach the material to the other members in the group (Emildadyani, 2008). Students do not only learn the given material, but they must also be ready to give and teach the material for the other group members and must work together cooperatively to study the assigned material. Thus, in this model, there are two study groups in one method, namely: the home group and expert group. These are the steps:

1. Home group: class assignment is divided into topics. Then, students are split into groups with one member assigned to each topic. Working individually, each student learns about her topic and presents it to their group.

2. Expert group: students gather into groups divided by topics. Each member presents again to the topic group. In the same-topic groups, students reconcile points of view and synthesize information. They create a final report.

3. Home group: The original groups reconvene and listen to the presentations from each member. The final presentations provide all group members with an understanding of their own material, as well as the findings that have emerged from topic-specific group discussion.

In this case, a class with 45 and 44 students and teaching materials that will be achieved in accordance with the purpose of learning consists of five parts of learning materials. Then, the 45 students will be divided into 5 groups of experts consisting of 9 students and 9 home groups consisting of 5 students. Each member of the expert group will return to the home group and provides

the information that has been acquired or learned in the expert groups. The lecturer facilitate group discussions, both in the group of experts as well as the original group.

Instrument

The instrument of this study are: 1) the instruments that conduct the research are syllabus and lesson plan at the subject of Antenatal Care; 2) the instrument of learning outcomes is cognitive test with closed questions type (provided the answer choices); 3) the instrument to determine the scientific attitude is the questionnaire.

1. Syllabus

A Syllabus is an outline, summary, abstract, or the main points of the content or learning materials (Hamalik, 2009). The syllabus is used to describe curriculum development product that is a further elaboration of the standards of competence and the basic competences to be achieved, as well as the principles and the descriptions of the material that need to be studied by students to achieve the standard of competence and the basic skills.

The syllabus of Antenatal Care subject that used in this study is an institutional syllabus of Midwifery department, based on the framework of educational qualifications of midwives and midwifery competences.

2. The Cognitif Test

The types of questions on cognitive tests used closed questions. It provides the answer choices that includes all of the materials discussed. The test consists of 40 items with five options answers. Retrieving data using these instruments was done to the pre test and the post test. The pre test was given to students before the learning activities, to determine the students' initial ability. In addition, the post test was given to students after the completion of the learning activities when all the material had been studied.

3. Questionnaire

The questionnaire that used is a closed questionnaire (structured), and it's presented in such a way so the respondents were asked to choose one answer that suitable to his characteristics. To measure attitudes, the Likert scale is used, which then measured and translated into dimensions and indicators that are measurable (Azwar, 2008). Statements in the questionnaire are divided into positive statements (favorable) and negative ones (unfavorable), which include five available options with alternative answers consisting of: strongly agree (SA), agree (A), doubtful (D), disagree (DS) and strongly disagree (SD)

The negative statements were inserted between positive statements to control the level of rigor or seriousness of the respondents' responds. The respondents who were not serious or careless in answering the questionnaire will be stuck with those statements. Each statement is given a score that is SA=5, A=4, D=3, DS=2, SD=1, for the positive statements (favorable) and SA=1, A=2, D=3, DS=4 and SD=5 for the negative statements (unfavorable).

Questionnaires that are used to determine students' scientific attitude is distributed once the students finish the learning process, whereas the learning outcome data were collected at the beginning and the end of the learning process.

Data Analysis

Before the data was analyzed to answer the research objectives, the first data is interpreted to facilitate the description of the data. On the outline, there were two data interpretations, result of learning and scientific attitude. The interpretation data of the learning outcome is in the form of interval scale. On the other hand, the data for the scientific attitudes is in the form of ordinal scale with the categories of high, medium and low.

The last stage in processing the research data is data analysis. The results of this research will confirm how the position of a causal relationship between the variables studied. The goal is in the invention of factors due to different influences of using Group Investigation and Jigsaw learning methods in Antenatal Care learning towards learning outcomes. Then a comparative analysis is performed to each independent variable that is tested with the scientific attitude as the attributive

variable. Then, at once, the interacting factors that affect the dependent variable are seen.

T-test was used to analyze student results before and after the learning process, as well as to analyze the effect of student scientific attitude toward learning outcome. Anova test was used to analyze the influence of cooperative learning between Group Investigation and Jigsaw methods with scientific attitude towards midwifery students' learning outcome.

Both descriptive result and hypothesis tests were analyzed by using an SPSS software (version 15.0, SPSS, USA).

RESULT

The research took place on March to June 2015. And the implementation for the learning steps was in four weeks, four times class meetings. The data collection was carried out during the learning schedule, as much as two meetings for the pretest and posttest.

Descriptive Result

Table 1. Data pre-test and post test (learning result) between two groups on subject Antenatal Care: complications of pregnancy and its management based on midwifery practice

Method	Pre Test		Post Test	
Group Investigation	Mean	65.57	Mean	76.43
	Median	65	Median	76
	Variance	73.984	Variance	66.962
	Std.Deviation	8.601	Std.Deviation	8.183
	Minimum	65	Minimum	58
	Maximum	74	Maximum	91
	Range	9	Range	33
Jigsaw	Mean	65.91	Mean	72.20
	Median	56	Median	71
	Variance	44.303	Variance	38.891
	Std.Deviation	6.656	Std.Deviation	6.236
	Minimum	56	Minimum	60
	Maximum	68	Maximum	85
	Range	12	Range	25

The data for the pre-test and the post-test are served to determine the differences in the learning outcomes before and after the implementation of the learning methods descriptively. The average of the acquisition result before and after the application of the learning methods, both Group Investigation method group and Jigsaw method group has increased. The improvement of learning outcomes in the Group Investigation method group is higher than in the Jigsaw method group.

Tabel 2. Scientific Attitude description of students in the application of learning methods between Group Investigation method and Jigsaw method

Method	Category of Scientific Attitude	Percentage (%)	Result	
Group Investigation	High	76	Mean	78.14
			Median	79
			Variance	66.185
			Std.Deviation	8.135
			Minimum	58
			Maximum	91
			Range	33
	Medium	24	Mean	71
			Median	73
			Variance	33.600
			Std.Deviation	5.797
			Minimum	62
			Maximum	79
			Range	17
	Low	0	-	-
Jigsaw	High	87	Mean	72.79
			Median	74
			Variance	37.588
			Std.Deviation	6.131
			Minimum	60
			Maximum	85
			Range	25
	Medium	13	Mean	68.33
			Median	68
			Variance	35.867
			Std.Deviation	5.989
			Minimum	60
			Maximum	76
			Range	16
	Low	0	-	-

The data for the scientific attitude was obtained from the questionnaire that was distributed in both groups after the students attended the classes completely. The scientific attitudes are categorized into high, medium and low category. The second table is the students' learning outcome based on the scientific attitude classifications. In both groups, there are only two classifications from the three available classifications, which are high and medium. Almost all of the respondents from two groups had high classification of scientific attitude. Moreover, the *mean* of the learning outcome in the two groups with students having high classification of scientific attitude is higher than the learning outcome for students with medium classification.

Hypothesis Testing

By analyzing using the *t-test*, there was an influence in students' learning outcome (*p*-value 0.042 ≤ 0.05), and the *p*-value for students' scientific attitude toward the student learning outcome was 0.004 ≤ 0.05. The analysis of the interaction between the Jigsaw and the Group Investigation methods, as well as the scientific attitude of students toward the students' learning outcome using *Anova*, has the *p*-value of 0.491 ≥ 0.05.

DISCUSSION

First Hypothesis

There are differences of learning outcomes between Jigsaw and Group Investigation methods in learning Antenatal Care, with the p-value is 0.042, which is less than 0.05. The results of this study was similar with the results of Parchment (2009), which stated that there was influence of using cooperative learning between Group Investigation and Jigsaw method on the learning outcome of Maths.

Both of the studies above equally examine the differences of effects in learning methods between Group Investigation and Jigsaw toward the students' learning outcomes. However, the difference is this study tested Antenatal Care subject at the college level, while Parchment (2009) tested Maths subject in secondary school students. Although both have different difficulty levels, but the implementation process of learning was similar, and the evaluation of the process was similar also. So, the effectiveness of using cooperative learning method was not limited by the type of the subject that was learned and the level of education. Instead, there were elements applied in cooperative learning method, not only it enabled students to study in a group, but also requires activeness, responsibility, communication and positive dependence among its members (Emildadiany, 2008).

The cooperative learning is a learning model that can create liveliness of student learning. In this model, students are required to perform activities such as reading a script or materials, dig a learning experience, make presentations, discuss and debate with fellow friends, as well as answer questions from other students.

The cooperative learning uses small groups so that students can work together to achieve the learning objectives. Students in cooperative learning groups discuss the problem, help each other and encourage each other to overcome learning problems. This learning model will trigger students to be active and mutually support each other in the working group to complete the study materials.

Based on the description of the data in Table 1, it can be concluded that the Group Investigation method gives better result in improving learning outcomes than the Jigsaw method. This result is consistent with Tran (2014) which stated that learning with the Group Investigation method gives better results than with the Jigsaw method. In the Group Investigation learning method, the students are involved in planning the topics to be studied and run the investigation. The students get tasks according to the study group to get resources to be learnt and discuss with the group about their study material discussed, then the results of the investigations discussed in the classroom (Slavin, 2008).

In the Jigsaw learning method, students are divided into small groups of 4-6 people who are working together heterogeneously and positively interdependence. They have responsibilities to complete the part of learning materials to be learned. This group is called the home group. Then, each student from the different groups that have similar topic gathers to seek, study, and discuss the study material in groups. After that, each of the students returns back to the original group to convey and discuss the material that has been discussed (Arends, 2007).

In the Jigsaw learning method, each student with different characteristics of academic skills is given the responsibility to convey the material covered in the expert group. With this technique, those with high academic abilities tend to convey the material better than the students with low academic abilities. The implementation of learning by using the Jigsaw method will also be slightly delayed if there

are members in the group with low abilities to deliver the contents. On the other side, in the Group Investigation method, each group presents its members deemed to master the material the most to deliver their thoughts to their classmates. This allows students to master the learning materials (Persky, 2009).

In the implementation of the Jigsaw learning methods, there are still some difficulties, such as students are still focused and burdened with the task assigned to them, so that they may not have a good concentration to pay attention and listen to the materials delivered by their friends. In the Group Investigation learning methods, the role of the student in the learning process is to actively try to develop his/her skills under the guidance of the lecturer. The students look more focused on the material covered, because the loads are not on the individual but on the group. In this case, the lecturer should be able to create a situation that maximizes the student's learning activities (Sutama, 2007)

Second Hypothesis

There are the differences of the students' scientific attitude towards learning outcomes with the p-value of 0.004, which is less than 0.05. So, the conclusion is that there is influence between the students' scientific attitudes of high and medium categories toward the learning outcomes in Antenatal Care subject. The result of this study is similar with the results of Vaughan (2005) and Suryawati (2010), which stated that the scientific attitude affects the achievement of learners. All the results concluded that student achievement is influenced by the high scientific attitude.

The scientific attitude contains two meanings: the attitude toward science and the attitude of science (Sardiman, 2005). The attitude toward science is the attitude that refers to the learning objects (Antenatal Care subjects). Meanwhile, the attitude of science is an attitude that refers to the subject after learning objects. If the student has a certain attitude, then students tend to behave according to her attitude consistently in every circumstance. When students get guidance from the lecturers, the students are always listening to the ideas presented seriously with interest to a situation, even though the concepts presented a much different idea. Even in other circumstances, these students will behave the same way on other people who can be said to be open.

In the learning activities, scientific attitude is manifested in a critical comment of themselves. Students also need to use any other alternative ways to solve a problem. The role of the lecturer is very large at the time to address the problem, convey the essential concepts, providing tools and materials, initiate discussion and prepare the questions to direct the cooperative learning activities.

Through the scientific attitude, the students will respond positively when lecturers implement cooperative learning (Harlen, 2006). When lecturers explain learning procedures, learning activities and discussion groups, as well as the presentation, the students perform with maximum results. The effect of the scientific attitude in this regard is to increase the students' curiosity that will encourage students to learn the material more widely and deeply. It also increases their critical thinking skills that will strengthen the establishment of courage to state different opinions. Thus, with high scientific attitude, it will improve the mastery of the materials, which at the end improve the learning results.

Third Hypothesis

There is no influence of cooperative learning between Jigsaw and Group Investigation methods with the scientific attitude towards the learning outcomes with the p-value is 0.491, which is more than 0.05. The results of this study is similar with the results of Tran (2014), that stated that there was no interaction between the using of cooperative learning methods for Jigsaw and Group Investigation with students' learning activities towards their learning outcomes in Maths. However, in contrast to the results of Francis (2009), that stated that there was an interaction between STAD cooperative method with guided inquiry and experimentation with a scientific attitude toward Maths learning outcome. The absence of interaction in this study means that in order to improve students' learning outcomes, it doesn't mean that we should use the Group

Investigation learning method on a high state of scientific attitude. In other words, learning outcome would be preferable to use the Group Investigation learning method regardless the acquisition of scientific attitude scores. In the description of the chart, the lack of interaction between the variables describe that: the line of learning outcomes in the Group Investigation learning method does not intersect with the score line of students scientific attitude, but both of them lie on parallel lines.

Students with high scientific attitude mean that they will be able to solve the learning problems because of their high desire and independence (Uno, 2008). Through cooperative learning, scientific attitude is not so instrumental for learning in small groups because each group members help each other and complete the weaknesses of each student. The scientific attitude of these students will be resolved through cooperative learning. Students' scientific attitudes are not unduly influenced by both the Group Investigation and the Jigsaw learning methods.

Learning outcomes can be acquired during the learning process through direct observation or after the learning process ends by giving a test (Grace, 2009). Factors that affect the learning process and learning outcomes are: 1) Internal factors that are inhibiting factors from self-learners in the form of physiological and psychological. Physiological is a common condition of the organs and joints that affect the spirit and intensity of the students in the course. Psychologically that affect the quality and quantity of student learning is the acquisition of intelligence, attitude, aptitude, interest and motivation to learn. 2) External factors are factors that come from outside the learners, for examples social and non-essential environments. The social environment such as: the effects from school, and the influences from the community. The examples of non-essential environment are school buildings, residential houses, learning tools, weather conditions, and study time (Slavin, 2005).

LIMITATION AND RECOMMENDATION

Learning outcomes are influenced by many factors, which is not limited to learning method. The learning outcomes, especially on the cognitive aspects, are influenced by internal factors and external factors of the students. For the data of the scientific attitude that is obtained from the questionnaire, it cannot be guaranteed that the students have answered the questions in the questionnaire honestly. There is a possibility that students were less serious in filling the questionnaire, so the answers did not reflect the students' real conditions.

Similar studies still need to be developed, noticing that cooperative learning is an instructional model that is the most appropriate learning method for the level of college students. That attributes of the studies should be connected with other variables, which may affect student results.

CONCLUSION

The Group Investigation learning method is more influential than the Jigsaw learning method in improving the students' learning outcome. The students' scientific attitude affect them in achieving the learning outcomes. However, there's no significant influence of cooperative learning methods between Group Investigation and Jigsaw with scientific attitude of students towards learning outcomes.

AUTHORS' CONTRIBUTIONS

The result of this study gives a new discourse of the ideas and knowledge of cooperative learning methods for both the Group Investigation and the Jigsaw methods that are implemented for midwifery students. It could be a material input for the preparation of learning strategies that is supported by the students'scientific attitude in each learning process so that it could increase their learning outcome. The cooperative learning methods can also encourage and foster a spirit of creativity in increasing the motivation of educators in teaching.

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REFERENCES

Arends R.I, 2007, Classroom Instruction and Management (New Jersey: The Mc Graw-Hill Companies, Inc).

Aziz Z, 2010, A Comparison of Cooperative Learning and Conventional Teaching on Students' Achievement in Secondary Mathematics. Procedia Social and Behavioral Sciences, 9: 53–62.

Azwar S, 2008, Sikap Manusia Teori Dan Pengukurannya (Yogyakarta: Pustaka Pelajar).

Bounds M, 2009, The Group Investigation Teaching Model. Science-direct Journal, 14(3), 353-357.

BPPSDM (Badan Pengembangan dan Pemberdayaan SDM Kesehatan), Kementerian Kesehatan RI, 2014, Kurikulum Inti Pendidikan Kebidanan, Buku A.

Emildadyani N, 2008. Cooperative Learning-Teknik Jigsaw. Report workshop of Management, Program Studi Pendidikan Ekonomi FKIP-Universitas Kuningan, Kuningan, July, pp:231-245.

Francis AA., 2009, STAD cooperative method with guided inquiry and experimentation with a scientific attitude toward Maths learning outcome. The Journal of International Social Research, 2(6), p.15-25.

Fullerton JT, Thompson JB, Johnson P, 2013, Competency-based Education: The Essential Basis of Pre-Service Education for the Professional Midwifery Workface. Midwifery, 29: 1129-1136.

Grace L, 2009, Instructional Design and Assessment. American Journal of Pharmaceutical Education, 73 (7) Article 132.

Guneysu S, 2010, Implementing an Alternative Cooperative Learning Method. Procedia Social and Behavioral Sciences, 2: 5670–5674.

Hamalik, 2009, Proses Belajar Mengajar (Jakarta: Bumi Aksara).

Harlen W, 2006, Teaching and Learning Primary Science (London: Harper & London Ltd).

ICM (International Confederation of Midwives), 2010, Global Standards for Midwifery Education and Companion Guidelines. http://www.internationalmidwives.org/glogal_standard_165243_php

ICM (International Confederation of Midwives), 2015, ICM International Definition of the Midwife. http://www.internationalmidwives.org/who-we-are/policy-and-practice/icm-international-definition-of-the-midwife/

Lie A, 2007, Cooperative Learning (Jakarta : Grasindo).

Persky A, 2009, A Hybrid Jigsaw Approach to Teaching Renal Clearance Concepts. American Journal of Pharmaceutical Education, 73(3) Article49.

Parchment, GL., 2009, A Study Comparing Cooperative Learning Methods: Jigsaw and Group Investigation. St. John Fisher College Fisher Digital Publications, http://fisherpub.sjfc.edu/mathcs_etd_masters/25.

Sanjaya W, 2006, Strategi Pembelajaran (Jakarta: Kencana Prenada Media Group).

Sardiman, 2005, Interaksi dan Motivasi Belajar Mengajar, hal. 98-105 (Jakarta: Raja Grafindo Persada)

Slavin R.E., 2005, Educational psychology: Theory and Practice 4 th.ed (Boston: Allyn&Bacon).

_____, 2008, Cooperative Learning : Teori, Riset dan Praktik; Terjemahan Nurulita Yusron (Bandung: Nusa Media).

Suhaenah S.A., 2010, Membangun Kompetensi Belajar (Jakarta: Direktorat Jendral Pendidikan Tinggi Depdiknas).

Suradi, 2006, Model Pelaksanaan Pembelajaran di Sekolah. Working paper, Direktorat Jenderal Peningkatan Mutu Pendidik dan Tenaga Kependidikan (PMPTK) LPMP, Makassar, Sulawesi Selatan, pp.87-96.

Suryawati E, 2010, The Effectiveness of RANGKA Contextual Teaching and Learning on Students' Problem Solving Skills and Scientific Attitude. Procedia Social and Behavioral Sciences, 9, 1717–1721.

Sutama, 2007, Model Pembelajaran Kooperatif. Varidika, 19(1), p.132-142.

Suyatno. What is Student Centered Learning? http://athena.wednet.edu/curric/weather/adptcty/stcntr.html. Accessed 17th Desember 2014.

Thompson, JE.,Kershbaumer RM., 2009, Educating Advanced Practice Nurses and Midwives (New York: Springer Publishing).

Tran, VD., 2014, The Effects of Cooperative Learning on the Academis Achievement and Knowledge Retention. International Journal of Higher Education, 3(2), p.131-140.

Uno H, 2008, Teori Motivasi dan Pengukurannya, p. 54-11 (Jakarta: Bumi Aksara).

Vaughan W., 2005, Effects of cooperative learning on achievement and attitude among students of color. Journal of Educational Research, 95, p.359-364.

WHO (World Health Organization), 2012, Trends Maternal Mortality. http://www.unfpa.org/webdav/site/global/shared/documents/publications/2012/trends_in_maternal_mortality_pdf.

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RANA PLAZA THREE YEARS AFTER: PHYSICAL AND MENTAL MORBIDITIES AMONG SURVIVORS

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Abstract

The worst industrial accident in the history of Bangladesh occurred in 2013 when Rana Plaza, a building housing garment factories, collapsed. At least 1100 died; over 2000 incurred a wide range of injuries. In the weeks following, we surveyed 177 survivors. In early 2016 we conducted a follow-up survey with 149. In this paper we summarize health and social outcomes among survivors. The average number of traumas reported by respondent was two. The most frequently reported are fractures (50%), spinal injuries (45%), and soft-tissue injuries (27%). Major triage problems arose, resulting in multiple admissions of survivors to different hospitals: half the sample underwent three or more admissions. The six most prevalent residual morbidities include three physical (medical, mobility, and atrophied muscles) and three mental (insomnia, depression and post-trauma stress). We briefly discuss recent improvements in garment sector safety due to initiatives of major garment importers.

Keywords: Bangladesh garment sector, industrial safety, triage, survivors'morbidities

INTRODUCTION

In April 2013, Rana Plaza, a nine-storey building containing numerous garment factories, collapsed. At least 1100 died; over 2000 survivors incurred a wide range of injuries (BBC 2014). Located in Savar, a community near Dhaka, this was by far the worst industrial accident in the history of Bangladesh.It is evidence of appalling standards in many commercial and industrial buildings.

During the month following the accident, we undertook a survey of 177 hospitalized survivors. The sample included all survivors we could locate, still hospitalized four weeks after the collapse. The sample is probably representative of age and education. However, given they were still hospitalized at time of surveying, the severity and number of injuries are more serious than for the typical survivor. Three years later, in 2016, we undertook a follow-up survey of 149 among the original sample. In the interim, five in the original sample have died.[1]

Approximately two-thirds of the original sample are women, one-third men (male 57, female 120). The average sample age is 25.9. Male survivors are on average approximately four years older than the female survivors (28.7 versus 24.6 years).[2] Over half

[1] All interviewees in the original survey gave oral consent to interviews. The ethics board of Simon Fraser University, Vancouver, Canada, approved the instrument used in the follow-up survey. The survey instrument is available from the authors on request. We thank Desdemona Khan for her assistance in conducting the follow-up survey.

2 The 90 percent confidence interval for the male population mean is [27.2, 30.3], for the female mean [23.2, 26.0].

the overall sample and the samples disaggregated by gender fall in the modal interval, ages 20-29.

Bangladesh is the world's second largest exporter of garments (after China). The sector accounts for over 80 percent of the country's export earnings. It employs four million, the great majority women (BGMEA, 2016). A stereotype exists of garment workers as low-skill and poorly educated. This is misleading: education levels (in the original sample) are well above the national adult average. The median for men is lower secondary (grade 10); that for women is some secondary studies (grades 6 – 9).

Distributions of traumas and residual morbidities

The five most prevalent traumas categorized are fractures (50%), spinal (45%), soft-tissue (27%), amputations (15%), head injuries (15%), paralysis (9%). Nearly all survivors suffered injuries in more than one category. Among 149 in the follow-up sample, we recorded 296 separate traumas. The most problematic in terms of quality of care are spinal injuries, which we discuss in more detail below.

In the follow-up sample, 118 reported one or more residual physical morbidities; 78 reported one or more mental morbidities. Table 1 reports the count and percentage (relative to the total sample) of survivors reporting each of the categorized morbidities. The three most prevalent physical morbidities are medical (for example, urinary problems), mobility (need for a wheel chair) and atrophied muscles (creating limited functionality of limbs). With respect to mental morbidities, the three most prevalent are insomnia, depression, and post-traumatic stress.[3]

Table 1 Prevalence of residual physical and mental morbidities among sample survivors (n=149)

	Physical morbidities	Mental morbidities
	(count, percentages in parentheses)	
prevalence, all survivors	118 (79)	78 (52)
medical	62 (42)	
mobility	50 (34)	
sleep disorder		47 (32)
depression		38 (26)
atrophiedmuscles	35 (23)	
post-traumatic stress		29 (19)
phobia		6 (4)
memory loss		4 (3)
anger		3 (2)
musculoskeletal	3 (2)	
other	0 (0)	27 (18)

[3] The prevalence of post-traumatic stress in our sample is 19 percent. This is only one third the rate reported by Fitch et al. (2015). The probable explanation lies in the difficulty in assessment via an interviewer.

Table 2 Factors associated with insomnia, depression and post-traumatic stress disorder (PTSD)

	Insomnia (n=47)	Depression (n=38)	Post-traumatic stress disorder (PTSD) (n=29)
	(percent of subset presenting morbidity)		
Gender			
male (n=48)	14.6	14.6	14.6
female (n=101)	39.6	30.7	21.8
Marital status			
married (n=112)	32.1	24.1	19.6
other (n=36)	29.7	29.7	18.9
Employment status, male			
unemployed (n=12)	25.0	25.0	25.0
other (n=36)	11.1	11.1	11.1
Employment status, female			
unemployed(n=50)	34.0	34.0	20.0
other (n=51)	45.1	27.5	23.5

Note:

The statistics arise from cross-tabulations of binary variables. For example, the total number of male survivors is 48. Seven male survivors among the 48 male survivors report insomnia (14.6% = 100 * 7 / 48). Conversely, 40 female survivors among the 101 female survivors report insomnia (39.6% = 100 * 40 / 101). The two differences in contingent means that are statistically significant (0.1 significance) are gender differences with respect to insomnia and depression Due to the small size of many sample subsets, confidence intervals are large. The remaining differences in contingent means are not significant at 0.1.

We elaborate on factors associated with the three most prevalent mental disorders via a set of cross tabulation results. (See Table 2.) One consistent result across the three disorders is a higher prevalence among women than men. Due to the small size of disaggregated samples, most tabulated differences in conditional means are not statistically significant, but the male/female differences with respect to sleep disorders and depression are significant (at 0.1 significance). The differences in prevalence of mental disorders between those married versus those in some other family relationship are minor. With one inversion (post-traumatic stress), the prevalence of mental disorders is higher among women who are without employment earnings than among unemployed men. However, the impact among men of being unemployed is much higher than the impact among women being unemployed. Among the male subset, the sample proportion displaying each of the three disorders is over twice among men without earnings than the proportion among men with some form of employment earnings.

In response to questions on the accident's impact on survivors' families, not surprisingly the most frequently mentioned impact is loss of income (n=96). The second most frequently mentioned impact is death of one or more family members (n=17). The first member of a family to obtain a garment sector job often draws other family members into the sector.

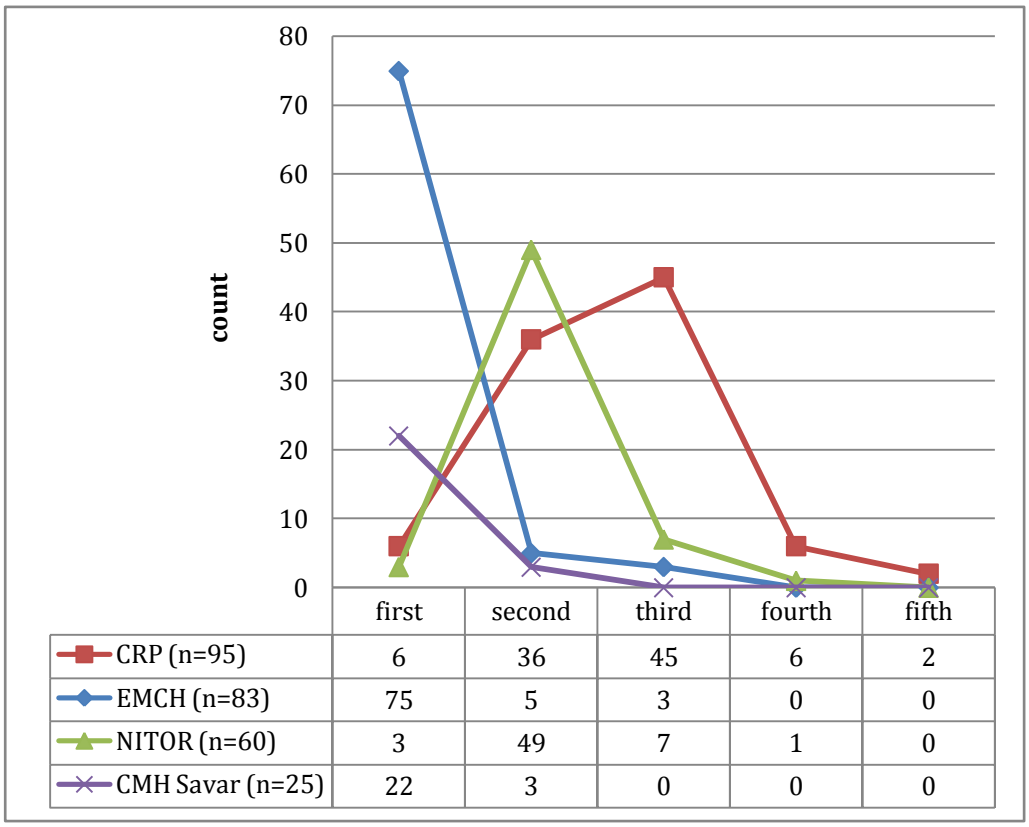
Triage of survivors with spinal injuries

The initial hospital admission of survivors took place in many hospitals, only two of which have the capacity to deal with the most severe injuries. The result has been multiple hospital admissions for many survivors. Given the severity of injuries incurred by those in our sample, more than one admission is not surprising. However, 51 underwent three; 19 underwent four, and 4 underwent five admissions.

Figure 1 illustrates the number of survivors received by the four hospitals having cumulatively the most admissions. of particular interest is triage of survivors with spinal injuries, for whom immediate immobilization is required to minimize risk of

permanent injury. The Centre for Rehabilitation of the Paralyzed (CRP) is the most qualified hospital in Bangladesh for treatment of spinal injuries. In the initial triage, only six of the 149 in our sample were admitted to CRP. The National Institute of Traumatology and Orthopedic Rehabilitation (NITOR), another hospital with the capacity for treating spinal injuries, received only three initial admissions. The two hospitals receiving the most initial admissions were the Enam Medical College Hospital (ENAM) and the Cantonment Medical Hospital Savar (CMH Savar).

As Figure 1 shows, subsequent admissions to NITOR and CRP were much higher than initial admissions. In the case of NITOR, few initial admissions may be explained by the (approximately) two-hour ambulance trip from Rana Plaza to NITOR's location in Dhaka and authorities' desire to admit survivors to closer hospitals. This rationale cannot explain the small number of initial admissions to CRP. Its major hospital and rehabilitation complex is located in Savar, a ten minute ambulance trip from Rana Plaza.



	first	second	third	fourth	fifth
CRP (n=95)	6	36	45	6	2
EMCH (n=83)	75	5	3	0	0
NITOR (n=60)	3	49	7	1	0
CMH Savar (n=25)	22	3	0	0	0

Figure 1 Number of Admissions to Selected Hospitals, by Rank of Survivors' Hospital Admissions

CONCLUSION

In the months following the collapse, the tragedy became a social media event. Images of injured and dead garment workers spread around the world's smart phones. The universal humanitarian revulsion obliged the government of Bangladesh and the major garment importers in Europe and North America to take action to improve building safety, compensate families that lost family members, and increase wages (Richards, 2013).

We surveyed survivors' perceptions as to post-2013 changes in the garment sector. The majority believe factory safety and wages are "better". A plurality believe there to be no change in security of employment, but many more believe there has been improvement than decline. Improvements in safety and in wages are the silver lining to the tragedy of the Rana Plaza collapse. On the other hand, the majority believe the ability of workers to negotiate working conditions is unchanged, and twice as many believe in a decline of rights than in improvement.

In thinking about the appropriate spending on improved building safety in the garment sector, readers may be interested in an economic calculation to weigh the incremental costs of proposed safety investments against the estimated monetary value of "statistical lives" that may be saved by safety investments. The value of a statistical life is the ex ante value to place on reducing expected loss of life or morbidity. A valuation of avoiding the statistical lives lost or injured at Rana Plaza is in the order of US$1 billion (Tk.7700 crore). Many ethical dilemmas and estimation problems surround application of statistical life methodology.[4] Nonetheless, this very large estimated value of lives that might have been saved and injuries avoided provides an additional rationale – over and above the basic humanitarian response – for massive investment in building safety in Bangladesh.

REFERENCES

Bangladesh Garment Exporters and Manufacturers Association (BGMEA), 2016, Trade Information. Accessed 11 July 2016 at http://www.bgmea.com.bd/home/pages/tradeinformation

BBC. 2014. Rana Plaza factory collapse survivors struggle one year on. Accessed 11 June 2016 at http://www.bbc.com/news/world-asia-27107860

Biausque, V., 2012, The Value of Statistical Life (Paris: Organization of Economic Cooperation and Development).

Fitch, T., Villanueva, G., Quadir, M., Sagiraju, H., Alamgir,H. 2015. The Prevalence and Risk Factors of Post-Traumatic Stress Disorder Among Workers Injured in Rana Plaza Building Collapse in Bangladesh. American Journal of Industrial Medicine58(7), 756-763.

Richards,J. 2013. Diplomacy, Trade and Aid: Searching for 'Synergies'. Commentary394 (Toronto: C.D. Howe Institute

[4] Underlying estimates of the value of a statistical life are studies of the willingness of workers to accept risky occupations relative to risk-free occupations. Risky occupations command a wage premium. Estimates of the premium's size generate, in the US context, values of a statistical life of approximately US$8 million. Average national per capita income is a relevant factor in explaining cross-country estimates of a statistical life. If, based on Biausque (2012), we assume a unit elasticity of value of life with respect to per capita income and replace per capita income in US with that in Bangladesh, the resulting estimate of thevalue of a statistical life in Bangladesh is about US$500 thousand. Finally, if we assume that the average survivor incurred injuries to be valued at 50 percent of a statistical life, we arrive at the value, in terms of statistical lives that might have been saved, of approximately US$1 billion. This is based on the conservative estimate of 1100 deaths and 2000 survivors.

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EFFECTIVENESS OF HEALTH EDUCATION SOCIETY OF KNOWLEDGE AND ATTITUDES IN DISEASE PREVENTION EFFORTS TUBERCULOSIS IN BIRU VILLAGE SUBDISTRICT MAJALAYA BANDUNG REGENCY 2016

Aditiya Puspanegara

Abstract

Tuberculosis is one of the important public health problem at the global, regional, national, and local even now to be the number one disease in Indonesia. In the prevention of diseases that exist in the community, is not spared of the importance of health volunteers, who help address and prevent the spared of infectious diseases. The purpose of this study is to determine the effectiveness of health education carried out by health workers to the knowledge and attitudes of society in the prevention of pulmonary tuberculosis disease in the blue village district of Bandung Regency Majalaya 2016. This type of research is a study Experimental design with pretest-posttest control group design. Population and sample in this study based on an annual profile is the whole Biru village society who totally 20 respondents experimental group and a control group of 20 respondents. Data analysis was done using independent test of Sample t Test. The results showed to experimental group as much as 70% in the category of support. In the control group were 60% in the category of support. There are significant differences between experimental group, and control group with the value (P = 0,000) sig t <0,05 to the community in Biru village Subdistrict Majalaya of Bandung Regency 2016. Based on the results, it should be further optimized active role of the volunteer in programs improving the quality of cadres carried out the health center and the heatlh Department. Skilled cadre would be a big impact on improving the status of public health.

Keywords: Knowledge, Attitude, Health Cadre

INTRODUCTION

Tuberculosis is one of the important public health problem at global, regional, national, and local levels. Source of TB infection that is when a person with TB coughs, sneezes, or speaks, then inadvertently out of droplet nucleis and fall to the ground, to the air, or other places.

Tuberculosis causes 5,000 deaths per day, or almost 2 million deaths per year worldwide. TB, HIV / AIDS, and malaria are the cause of 6 million deaths each year (World Health Organization, 2009). Indonesia takes third placed after China and India of the 22 countries in the world which has the highest burden of TB disease. There are an estimated 528.063 new cases of TB, incidence estimate of 228 new cases per 100,000 population. Estimates of the incidence of new positive sputum smear was 102 cases per 100,000 population in 2007. Base on the calculations, TB contributes for 6.3% of the total disease in Indonesia, in the Southeast Asia 3.2% (Global Tuberculosis Control Report 2009, WHO 2009).

The spread of TB in West Java is triggered by several factors, one of them is densely populated urban areas. One area that has a dense settlement criteria and spreading of TB high enough in West Java is Bandung. Based on data from the Health Department of Bandung, second quarter from several districts, in

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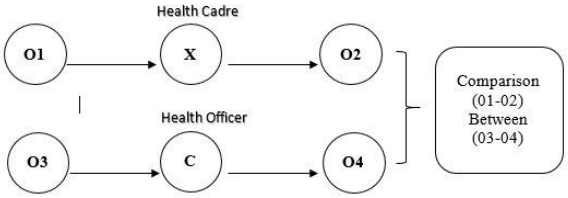
Majalaya district is found 168 TB cases, Ciparay 265 cases, Cileunyi 203 cases and Rancaekek 187 cases (Health Departement of Bandung, 2014).

In preventing of TB, the role of Public Health Center and Health Cadre are very important because they are health service facility that serve personal health and public. Public helath Center prioritized promotion and preventive action to increase public health, oriented individuals, families, groups, and communities. Prioritized the safety of patients, staff and visitors with coordination principle.

METHOD

This research is a true experimental research design with pretest – posttest control group Design. Known as Quasi Experiments.

In this research, two groups are given different treatment first group was given health education by health workers, and the two groups are to be given health education by health personnel. The group was given health education (penkes) by health workers uses a control group, because penkes are conducted by health workers is considered normal (conventional) both of group are performed to determine if there are changes in knowledge and attitudes towards the prevention of tuberculosis, which can be explained in the following picture:



The population in this study is based on an annual profile is the whole Biru village society with the number of 1,590 inhabitants.

the sampling technique which uses in this study is sampling probability (probability samples) with simple random sampling technique. Researchers uses slovin formula to determine the minimum sample size, then based on that formula so that the total of samples in this study are 94 respondets who will be divided into two groups: the experimental group totaling 47 respondents. But that is present in this study only 20 in the experimental group and 20 control group.

Statistical tests uses in this study is the Independent Sample T Test.

Table 1 Frequency Distribution After Applying Treatment by Health Cadre.

TB Prevention Knowledge and Attitudes	Group Experiment			
	Before		After	
	N	%	N	%
Support	10	50	14	70
does not support	10	50	6	30
Total	20	100	20	100

Table 2 Frequency Distribution After Applying Treatment by Health Officer

TB Prevention Knowledge and Attitudes	Group Experiment			
	Before		After	
	N	%	N	%
Support	11	55	12	60
does not support	9	45	8	40
Total	20	100	20	100

Table 3 Research Result

Group	N	Mean	P
Experiment	20	78,15	0,000
Control	20	71,35	

RESULT

Frequency Distribution After Applying Treatment by Health Cadre. From 20 peoples of Experimental group before applying treatment, the total were 10 respondents or 50% fall into the category of support, and the total were 10 respondets or 50% into the category does not support. While after applying treatment, the total were 14 respondents or 70% fall into the category of support, and the total were 6 respondets or 30% fall into the category did not support.

Frequency Distribution After Applying Treatment by Health Officer. The control group before applying treatment, the total were 11 respondents or 55% fall into the category of support, and the total were 9 or 45% of respondets in the category did not support. Meanwhile, after applying treatment, the total were 12 respondents or 60% fall into the category of support, and the total were 8 respondents or 40% fall into the category did not support.

Hasil Uji Beda Rata-Rata Antara dual Kelompok. The mean score of Experimental group was ± 78,15, while to the control group was ± 71,35. After the difference test are found that there is a value (P = 0,000) sig t < 0,05, it means that there is a significant difference between the group which penkes were given by cadres, and penkes group were given by the officer to the people in Biru village Subdistrict Majalaya Bandung Regency. Thus penkes were given by health workers to the people in Biru village Subdistrict Majalaya Bandung Regency, reckoned in the prevention of pulmonary tuberculosis disease.

DISCUSSION

TB control in the community needs to be done with a variety of approaches. Health cadre is part of a community that can assist government programs in TB control. (Sunar 2005). The results of the experimental group score is influenced by a large number of learners, differences in the number of learners will cause to differences in their learning environments. Each learning group consists 5 people ideally, too much learners will cause less interaction among students and crowded, in this research the number of students in each group are 20 people. The level of the hustle and conditions of the learning environment will influence the success of health education (J. Guilbert in Notoatmodjo 2007).

From the research, there are changeing in knowledge and attitudes of respondents, these changes are positive, there are 11 respondents were categorized become 12 respondents support, this prove it is true that health officer can influence society attitude and knowledge in prevention of TB disease One of the booster factors that influence people's behavior is the health officer or other officer, they are a reference for people's behavior (Green 1980 in Notoatmodjo 2007). Health education is given by the health officer has better opportunity in changing of knowledge and changing behavior of community, and according to Ariesya Ditha (2012) Explained that “The result of mother’s behavior assessment in giving MP-ASI is increase after giving the health education. The result of this research shows the knowledge changing of attitude and possitive knowledge in control group. In the opinion of the researcher, the factors that determine the behavior of an individual is the attitude.

According to Notoatmodjo (2007) says that "attitude is a closed reaction of a person against a stimulus and it cannot be observed directly.“ Individual attitudes will affect the process of change in behavior, attitude, positive individual will support the realization of positive individual behavior is in accordance with the opinion Kurniawati (2012) which explains that "there is a relationship of health workers well perceptions, and have good knowledge, with findings of TB

diseaseBased on the results, it can be explained that the average score in the eksperiment group was ± 78,15 while the control group was ± 71,35. After testing independent sample t test, the value obtained is (P = 0.000) sig t < 0.05 which mean rejected H0, then there is a significant difference between the health education provided by group health cadre and health officer.

Health education provided by health cadre, reckoned in the prevention of TB disease Pender Theory et al (2002) explains that "one of the booster of formed factors health behavior is the influence of interpersonal relationships". Cadre is a reference source community referral, trusted by the community, and have a close relationship with the community, because these cadres are part of society. When people's lives there is status as a public figure or health cadre, is expected to appear behavior in accordance with their respective status. In the opinion of Soekanto (2007) says that "everything was done by a person or group because of its position".

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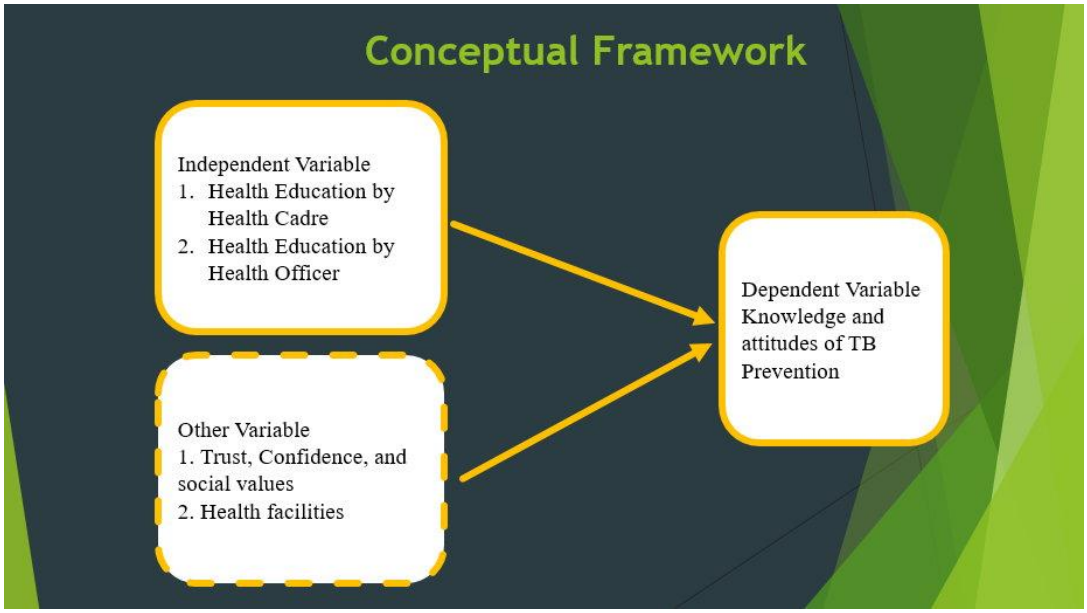

CONCLUSION

Public trust to health cadre is taken by good daily habbit. Society accept the trust based on Conviction without the proof science before. Based on the results of this study can be explained that, it is undeniable the role of health a cadres is very important in improving community health. The role of community volunteers do not reduce the role of health workers in Public Health Centers, otherwise with forming of a qualified cadre is the result from health workers intense guidance countinuously, and participate in all activities in the community.

REFERENCES

Alimul Aziz Hidayat, 2007, Midwifery Research Methods Data Analysis Techniques. Jakarta: Salemba Medika

Almaitser. 2006, Diet Guide. cetakan ketiga. Jakarta : PT Gramedia Pustaka Utama.

Ariesya Ditha. 2012, Effect of Health Education Practice By Kader Against Mother In granting MP-Asi IN Puskesmas Ledokombo Jember. Universitas Jember

Badriah L, Dewi. 2012. Methodology Research Health Sciences. Cetakan ke-5. Bandung: Multazam.

Badriah, L. 2012, Methodology Research Health Sciences. Bandung : Multazam

Darnoto Sri., 2008, Basic Environmental Health. Universitas. Muhammadiyah Surakarta Press

Depkes, 2008, National guidelines for prevention of tuberculosis. Edisi ke 2. Jakarta: DepKes RI.

Kemenkes, 2010, Managerial Guidelines for Tuberculosis Care Strategy Dots With DI Hospital.

Kurniawati Indah, 2012, Factors Related to Performance Management Officer Community Health Center in Patients with Tuberculosis (Tb) LTFU In Pekalongan City in 2012. Bamada.

Mubarak, Chayatin, N., 2009, Public Health Theory and Applications. Jakarta : Salemba Medika

Muttaqin Arif, 2008, Textbook of Nursing Clients with Impaired. Sistem Persarafan. Jakarta: Salemba Medika

Notoatmodjo, S, 2007, Health Promotion and Behavioral Sciences. Jakarta: EGC

Notoatmodjo, S. 2010, Metodologi Penelitian Kesehatan. Jakarta : Rineka Cipta

Notoatmodjo, Soekidjo, 2003, Education and Health Behavior. Rineka. Cipta. Jakarta

Notoatmodjo,S, 2002, Health Research Methodology. Jakarta: Rineka Cipta

Nursalam, 2003, Concept & Implementation Methodology of Nursing Research: Guidelines Skrips, Thesis and Research Instruments. Jakarta Salemba Medika

Pamasi Jein, 2011, Task Management hospitals and health centers. Samarinda. FKM Universitas Mulawarman

PELITA, 2015, Jabar Largest Tuberculosis Disease Patients http://www.pelita.or.id/baca.php?id=67281 diakses pada tanggal 12 Maret 2016

Pender et all, 2002, Health Promotion in Nursing Practice. Prentice Hall

Purwanto, 2002, Principles and Techniques Learning Evaluation. Bandung : Remaja Rosdakarya

Riyanto Agus B, 2013, Capita Selecta Questionnaire, Knowledge and Attitudes in Health Research. Jakarta: Salemba Medika.

Sawaludin, 2014, Implementation Analysis of Pulmonary TB Treatment Strategy With Dots In Medan City Regional Health Center

Setiadi, 2013, Concept and Practice of Nursing Research Writing. edisi 2. Yogyakarta : Graha Ilmu.

Soekanto, 2007, Sociology Scope and Application. Bandung: Rosdakarya

Sugiyono, 2009, Quantitative Research Methods, Qualitative and R & D. Bandung: Alfabeta

Sumijatun, et al, 2005, Basic Concepts of Community Nursing. Jakarta : EGC

Suryani, E., & H, Widyasih, 2008, Mother And Child Psychology. Yogyakarta: Fitramaya

Sunar, 2005, Characteristic Relationships, Knowledge and Attitudes of Health Cadre Patients With Suspected invention Practice Tb Lung Health Center Sambungmacan I Sragen.

Syafei et all, 2008, Empowerment cadres in Posyandu revitalization in Batang Hari.

USAID, 2009, Infectious disease. www.usaid.gov. Diakses pada tanggal 14 Maret 2016.

Wahyu Lina Susanti, 2011, Kader Posyandu Role Relationships With Completeness Basic Immunization in Rural Kwarasan Sukoharjo. Jurnal Keperawatan Akper Karanganyar.

Wawan & Dewi M., 2010, Theory and Measurement of Knowledge, Attitudes, and Human Behavior. Yogyakarta : Nuha Medika

Wawan, A dan Dewi, M., 2010, Theory and Measurement of Knowledge, Attitude and. Human behavior.. Yogyakarta : Nuha Medika

WHO, 2009, The Global plan to stop TB 2006-2015. www.who.int.org. Diakses pada tanggal 5 Maret 2016.

WHO, 2009, Global Tuberculosis Control Epidemiology, Strategy, Financing. Geneva. Switzerland: WHO Press. whqlibdoc.who.int/publications/ 2009/ 9789241563802_eng.pdf diakses pada tanggal 12 Maret 2016

WHO, 2009, The stop TB strategy. www.who.int.org. Diakses pada tanggal 10 Maret 2016.

Yuli Anisa, 2013, Overview Evaluation of DOTS strategy according Tuberculosis Patients in Puskesmas Kopo Bandung. Bandung: UNPAD

Zulkifli, 2003, IHC and health cadres. Implementation of Early Detection Program Developmental Toddler in IHC. http://library.usu.ac.id. diakses pada tanggal 12 Maret 2016

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CURRENT PRACTICES IN FOOD AND CHILDCARE-SERVICES PROVISIONS IN BANGLADESH'S READY-MADE GARMENT FACTORIES

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Abstract

The Bangladesh readymade garment (RMG) industry employs 4 million people of which 80 percent are women. Data on dietary preference, pattern and current practice is limited. This study aimed to look into the knowledge, practice and attitude towards current arrangements of food and childcare at the garment factories and to gauge the scope of introducing nutritional interventions. A cross sectional qualitative study was conducted in 5 hot-meal serving and 10 non meal providing factories. The study involved 480 male and female workers aged from 18 to 35. 58 percent of the workers had no basic understanding of what constitutes a balanced diet and the majority thought rice is the healthiest food. Workers were content with meal provision, at the sane tine concerned on hygiene and food safety. Managers in factories mentioned noticing a relationship between free hot-meal and increased productivity. In factories providing hot-meals, 3 percent young adults aged 18-22 years and 7 percent elderly aged above 30 years preferred food allowance instead, whereas in factories not providing hot meals more than 90 percent workers would prefer monetary allowance. Management of non-hot-meal providing factories were rigid about not providing any meal arrangements. 13 percent workers with children uses the daycare center at the factory, rests preferred leaving children at home. Recommendation were provided to introduce a peer education system to deliver health and nutrition messages, introduce food fortification and provide food supplements where applicable in parallel to establish strong business cases for the factories to invest in food and daycare components.

Keywords: workforce, nutrition, hot-meal, daycare

INTRODUCTION

There were sustained efforts to improve the nutritional status of women in Bangladesh in the past 15 years, the prevalence of chronic energy deficiency (CED) among them were still high, at 30% in 2007 (Ahmed et al., 2012) . Clinical vitamin A deficiency (VAD) and anemia are common among women of reproductive age and during pregnancy; for instance, vitamin A intake by nearly half of pregnant women was less than the recommended dietary allowance, and 4 in 10 pregnant women suffer from anemia, particularly in rural areas . The high burden of anemia has direct impacts on Bangladesh's economy - an estimated 7.9% of gross domestic product (GDP) in Bangladesh is lost due to anemia alone .

According to a study conducted in Dhaka in 2008 with 108 female workers, 92% of the respondents were anemic (with a haemoglobin level of <12 g/dl); in an earlier study, the prevalence of anemia was between 37% and 52% and intake of iron and vitamin A were only 67% and 61% of the daily recommended intake respectively (HKI, 2006). In general, these workers face difficulties in meeting basic needs of food, clothing, housing, medicines, and education for their families, and also do not have adequate access to sexual and reproductive health care.

Female workers' ability to improve their nutritional status is constrained by access and behavioral factors. In terms of access to food, RMG factories are required by law to provide food allowance to workers (650 taka per month) which is usually included in the total wage, though it should be noted an increase in wage does not always lead to improved food intake. Factories also provide light snacks to workers during normal overtime, and a number of factories in the

Export Processing Zones (EPZs) provide workers with hot meals for lunch and sometimes special snacks for pregnant workers. Serving portion, dietary diversity, cooking methods, etc. vary across factories and have different impact on workers' nutritional status.

On the other hand, female workers have low education background and poor understanding of balanced diet, micronutrient deficiencies, maternal nutrition, and infant and young child feeding (IYCF). Women lack knowledge on what food is enriched with protein, carbohydrates, vitamins or minerals. Women have expressed that they do not know the nutritional value of inexpensive food like pumpkins, leafy greens, vegetable, nuts, fruits of the seasons and small fish. Few women drink adequate amounts of water due to lack of access at home or restricted movement at work. Various access and behavioral factors interplay and lead to malnourishment of female workers and their children, as well as poor productivity leading to business losses.

OBJECTIVE OF THE STUDY

The overall objective of the study was to assess the knowledge, behavior and attitude of the workers and factory management concerning food provision and childcare services in factories. The study aimed at achieving the following specific objectives:

1. Assess knowledge, awareness and practice of workers on workplace meal or snacks.
2. Assess workplace meal arrangements
3. Evaluate availability and acceptability of range of food products from workers and managers.
4. Assess childcare facilities in factories.

Factory selection criteria

- Fifteen factories were nominated by five buyers to participate in this study. It is important to realize that as such, all things being equal exporting factories to international brands and buyers tend to have better working conditions than the average RMG factory. A mixed samples of hot meal providing and non-hot meal providing factories were selected for comparison purpose. In addition, selection was based on the agreement with individual international buyers and factories and the below criteria:
    - Factory's owner/management is willing to provide paid time to workers to participate in the study.
    - Located in Dhaka division.
    - Good representation of factories in terms of different size of workforce and products produced.

All the factories were strategic suppliers to international buyers and therefore subject to annual social compliance audits. Some of the factories may had ongoing health programs delivered by different NGOs. All participating factories were located in Dhaka division, the number of workers ranged from 640 to 8,000 with a mean of 3,285.40 and standard deviation of 2221.614. About 60% of the workers were female and all the factories had six days of work and eight hour work shifts.

METHODOLOGY AND SAMPLING

A mix of both qualitative and quantitative methods was used in this study, including In-Depth Interviews (IDI), Focused Group Discussions (FGD) and observation of factory environments. A three day Food Frequency Questionnaire was also administered to provide additional insight. This is to be noted that this was not a systematic study of the nutritional status of the female workers, but a snapshot of industry practices and preferences; as such, the analytical lens was mainly qualitative instead of quantitative, although some quantitative data was used to help illustrate the case whenever appropriate.

IDI was conducted with management representatives from Human Resource, Compliance and Administration departments. Caregivers and supervisors from childcare center, managers and cooks from kitchen were also interviewed. FGD was conducted with four different group of workers: a) Young adults (18-22 year old females), b) Female with <2 year old children, c) Female with 2-5 year old children and d) Male and Female aged 30 years and over.

A homogenous purposive sampling technique was used to determine the sample size for qualitative part, because the sample size share relatively similar demographic and work pattern. Therefore, 480 workers were reached through FGD and 48 were covered through IDI. For quantitative part, we assumed the population size to be >10,000, Confidence Interval as 8.91% and Confidence Level was assumed as 95% considering the work hour and interview time during work time, thus determined the sample size as 120.

Limitations

The factories were nominated by international brands and their local liaison office in Bangladesh. The nominations are from relatively better conditioned pool having higher compliance standard, therefore the sample is not a representation of the whole industry.

Number of factories providing hot-meal is very limited, only 5 among the selected 15 factories provide free of cost hot-meal during lunch.

In addition to these, factory management was reluctant to spare workers for interview for a longer period, which resulted in adopting a three day version of the seven day FFQ.

RESULTS AND FINDINGS

The study findings are focused in the following investigation areas.

Investigation area: Workers knowledge, awareness and practices in relation to food and nutrition

The term *balanced diet* is not a familiar term to most workers, and there were few who have a basic idea about what it is. Workers were asked the meaning of balanced diet, and about 42% (202 out of 480) mentioned that proper meal needs to contain a variety of rice, lentil, egg or meat or fish, and vegetables. Not many respondents said a balanced diet should include dairy products or fruits. The rest (58%) responded with vague or partially correct answers, e.g. they regarded balanced diet as consumption of individual food items such as big fish, beef, mutton, biryani, etc. instead of a combination of different food groups.

Peer influence was significant in knowledge dissemination, especially among the older cohorts and workers with children. For workers with children, they mainly learned from factory doctors, nurses and welfare officers. The more mature group came to know about nutrition mainly from mass media (e.g. television) and their peers and family members. Young adult workers, on the other hand, learned about balanced diet from sources such as school curriculum, television, and other mass media. There were some misconceptions reported such as:

- Rice is the healthiest food.
- Only expensive items are considered as *balanced food*, and cheaper items such as spinach and vegetables were believed to be of low nutritional values.
- Meat and fish are more nutritious than fruits and vegetables.

Imported fruits such as apples and oranges are more nutritious than locally available fruits such as guava and pomelo.

There was a lack of diversity in the food consumed, especially for breakfast and lunch, as the menu usually consisted of a simple curry of fried item with rice and lentil. Workers' ability to consume balanced diet was constrained by the unavailability of affordable nutritious foods in the market. Workers tended to include vegetables, small fish, and egg in their daily meals, not because they knew about their nutritious values or the need to balance their diet, but because these were the foods that they could get hold of. They were not aware of the concept of a food plate or a food pyramid when preparing meals. Their purchasing power also decreased towards the end of the month, as they spent their income on other household expenses and remittances while awaiting the next salary payment.

In 3.15% of the cases were the female workers the last ones to eat during dinner; these workers ate whatever was left after other family members had finished their meal.

Women workers aged 30 or above procured food for their families more often than other cohorts. About one in four young females interviewed also said that they helped to buy food. Presumably they could have some influence over what types of food to eat. On the other hand, women workers with children, especially those with younger ones (aged less than 2) had less responsibility in procuring food, mainly because of

other child-caring responsibility at home and the associated time constraints. In general, which food to buy was usually affected by factors such as seasonal availability of food, relative cost on a particular day, and most importantly, the decision of the head of household.

While working mothers did less grocery shopping than the two other cohorts, more than half of them had to prepare and cook food at home. These women were "time stressed" as they got less time for rest and acquiring personal capabilities. Young women and older workers had less cooking responsibilities, as they usually had other family members such as mother, sister, and in-laws, to do it for them.

The expenditure on food tended to increase with family size. The bigger the family was, the more contribution individual workers had to make. It should be noted that 13.1 % (63 out of 480) of interviewees either did not make any monetary contribution to household food expenditures or had no idea how much was spent as they handed over their entire income to their parents.

Table 1 Workers' average monthly expenditure on food (Taka)

Group by family size	Number of respondent	Average expenditure on food (Taka)
Single, living alone	24	3,460
2-3 Member family	180	6,772
4-6 Member family	206	8,032
6< Member family	7	14,667

According to a research conducted in 2010, the average monthly household expenditure on food for a worker family of four was 3,974 taka (Alam, Blanch and Smith, 2011) which is 44.7% of total household expenditures according to the Household Income and Expenditure Survey of Bangladesh (HIES) (BBS). It should be noted that food Inflation in Bangladesh averaged 7.93 percent from 2013 until 2015, reaching an all-time high of 9.09 percent in May of 2014 (Bangladesh Food Inflation).

Most of the younger workers interviewed in the study live on their own, either in mass houses or hostels, and spend the least on food (2,571 taka per month). Assuming an average worker at grade 7 (the lowest grade) is earning a minimum wage at 5,300 taka per month, food expenditure would constitute 48.5% of her income; the percentage dropped for workers who are more senior in position and/or have more experiences, e.g. the same figure would represent 19.8% of the monthly salary of a grade 1 worker who earns 13,000 taka minimum a month. Average expenditure on food increased for workers with children. Complementary feeding might have led to increased expenditure, and some women considered medical expenses as expenditure on "food". Older workers (30 years old or above) who lived on their own tended to spend 41% more on food than their younger co-workers. Their contribution to the household food expenditure also increased with the number of family members.

Investigation area: Food provision in factories

Two types of factories were selected in this study: i) factories that provided hot meals to the workers and ii) those that did not. It should be noted that with the exception of factories located in the Export Processing Zones (EPZ), it is not a very common practice in the RMG industry in Bangladesh to provide hot meals, i.e. cooked lunch served fresh for immediate consumption, for workers. On the other hand, factories usually provide snacks during overtime even if they are not providing hot meals, and that is seen in factories situated in all localities.

It should be mentioned that all the factories that provided hot meals were also paying the 650 Taka food allowance to workers as stipulated by law. The hot meal could be seen as an *additional* benefit. Four out of the five hot meal providing factories were situated in the EPZ, with food supplied from two different external suppliers. The non-EPZ located factory had its own cooking facility in the factory premises.

All the food suppliers interviewed (three including the one in the non-EPZ factory) were sole proprietors and had been serving food to respective factories for a long period of time. These suppliers were located near the EPZ and each had the capacity to prepare food for 7,000 to 9,000 people a day. Suppliers' facilities were subject to buyers/factories' compliance standards (e.g. on cleanliness, hygiene, etc.). They had separate areas for cleaning, cutting, cooking, storage (grains, spices and vegetables), as well as

refrigerators. The cooking stoves were mostly run by gas, but considering the possible interruption of supply, clean coal was used at times. Staffs were checked by factories' medical team periodically for communicable diseases, they were also trained to use good food preparatory practices, e.g. types of vegetables to cook, cleaning, as well as preparation and storage of raw materials and cooked food.

Food distribution system at factories providing hot-meals

All five factories have fixed weekly menu consisting of meat, fish, egg and vegetable. Rice and lentil is provided as abundant and the side of the day is served on a cup. The usual amount of the side dishes is approximately 90-120 grams. The Human Resource Officers or Welfare Officers take charge during the lunch period to oversee management and cleanliness.

There were also variations in terms of the menu and the process such as, two out of five factories avoided fish fearing discontent over piece received or even easy spoiling, while others ordered fish in particular considering big fishes as a special item (such as *Hilsha fish),* the non-EPZ factory provided hot meals as a benefit to workers, some factories provide an improved meal once a month, e.g. polao, roast chicken, etc and in all five factories, Workers Participation Committees or a separate Food Committee were responsible for entire process or a part of it (e.g. grocery shopping).

In the factory where food was prepared in-house, factory management claimed that the entire compliance team as well as representative of food committee constantly monitored the hygiene, cleanliness, and safety in the kitchen and dining areas.

All five factories suppliers cooked food as per daily order based on workers attendance, so that there was no issue of waste food. However, suppliers or cooks prepared 100 to 300 units extra in case of extra demand. Fish was usually fried the night before and kept in a refrigerator in order to save time, and would be cooked with curry the following morning.

Workers' satisfaction and expectation over current hot-meal provision

Workers in the five factories were satisfied with the free hot meal arrangement. Regardless of age, marital status and number of family members, there were some common compliments and complaints. Compliments being the fact that the free lunch provision ease up the cooking responsibility since the workers needed to come to work very early in the morning, while bearing the responsibility to cook for themselves and other family members. Many workers said that providing meals in factories had relieved them from these chores and they had time to have breakfast, which was otherwise the most commonly skipped meal of the day. Then, workers said that if the bring lunch form home they might run the risk of food poisoning if factories had no food storage (e.g. refrigerator) or heating facility. Hot meals provided by factory could guarantee food safety to a certain extent. Moreover, workers were happy to be able to eat a variety of protein items (i.e. meat) on a regular basis, which otherwise would not be possible if they had to prepare food themselves. Finally the fact that factory provided lunch also helped workers to save money on food.

On the other hand, there were some complaints reported by the workers such as having limited and fixed menu option where factories followed the same menu over and over and they had never been changed since the inception, except for one factory where they changed one item over the years as per workers' request. It became very monotonous and workers started feeling weary of having the same food every week. Then comes the taste and portion size, some workers also felt that the portion size was not big enough and the food did not taste good, especially the vegetable items. In all factories, workers reported that they carry an additional item from home on the days when factories served vegetables.

As 4 out of 5 hot meal providing factories were located within the EPZ, where there was no provision of canteen or food stalls and very few workers lived within walking distance areas, there was simply no alternative for many than taking the food provided by factories. In general, only about 3 percent of young adults and 7 percent older workers in these 5 factories would prefer to have food allowance, majority of the workers were satisfied with the current set up and hoped that the factory will continue providing food.

Management's perception of hot-meal provision

There were mixed comments found from the management regarding hot meal provision in factory.

Two out of five of the management representatives agreed that there was both direct and indirect relationship between serving food and productivity. According to them, workers from factories that provided food had higher morale than the ones that did not. Workers were thought to be more motivated and tended to have more energy, because they did not have to spend time preparing food or commuting back home for lunch. As a result, workers may be more productive in hot meal providing factories. However, factories did not have a systematic way to collect data, e.g. turnover, absenteeism, therefore they did not know the business benefits of such investment.

On the negative side, another two management representatives interviewed mentioned that it had become an additional burden to some management staff, because they were the ones who need to organize, coordinate, manage and monitor the whole cooking and distribution processes. Supervision of food suppliers was very time consuming; factory management representatives often received calls from suppliers about unavailability of ingredients, they also needed to pay periodic visit to the food preparation facility/dining area for supervision. Since food was a very sensitive issue in the industry, management needed to ensure the quality and safety to avoid discontent.

Food distribution system at factories not providing hot-meals

There were 10 factories that did not provide any hot meals to workers, although they provided snacks during regular overtime. These factories had in-house food stalls which sold packaged and dried food items, soft drinks, and candies. This type of factory represents the majority in the readymade garment (RMG) industry in Bangladesh.

Eight out of ten factories in this category had a food stall in the facility. There were two types of food stalls in non-hot meals providing factories – permanent and makeshift shops. Both types of shops/stalls were managed by factory appointed staff or worker, except for one factory where an external supplier was contracted to set up a shop in the dining area.

Food stalls in these factories sold similar types of food and beverage, including packed biscuits, cakes, candy, bun and bread, bananas, fruit juice, energy drinks, tea, etc. Six out of ten of the non-hot meals providing factories sold fried snacks like *samucha* and *shingara*, while the rest had either stopped selling them (one factory) or had never sold them (three factories) despite high demand from workers, as management considered these foods to be unhealthy.

Items kept at the food stalls were sold at market prices; factories neither gave any subsidy nor marked up the price for profit. There were fixed price lists available at the stall, displayed at convenient places for workers' reference.

Food stalls in all eight factories needed to comply with the rules and regulations of the factories, and were monitored regularly either from the assigned management department or designated committee (in some cases, both).

Items to be included for sale needed to be approved from respective department and/or committee. Fried items needed to be sourced from approved vendors and vendors must use oil of good quality (e.g. bottled/branded). Moreover, expired packed foods were to be returned to the suppliers or the distributors. It should be noted that those factories were following the best practices, such stringent requirement on food quality is not common in the industry.

Workers' satisfaction and expectation over current food provision

Workers at the ten non-hot meal providing factories either went home for lunch (51%) or brought home-cooked food to the workplace (49%).

Family structure, distance from home and number of family members, appeared to be the key influencing factors as to the decision of going back home or bringing lunch to work. Workers with young children tended to go home so that they could feed their children and did other household chores before returning to the factory. Some of them were tired and/or returned to the factory late.

Across all non-hot meal providing factories, workers shared same expectation from the management, i.e. majority of them (more than 90 percent) wanted the factory to provide them with additional monetary food allowance. Only a few workers (aged 30 or above, and workers with children aged less than 2 years) wanted factories to provide food. Workers

would like to spend the money at their will and contribute more to family food expenditure, although the amount at stake would not be significant.

Majority of workers interviewed had bought food (snacks and tea) at factory food stalls, and were satisfied with the current arrangement. Presumably, there was no ground for workers to make comparison as they had never experienced any provision of hot meals in the workplace before. Also, many workers in one factory wanted the factory to provide them with hot meal, mainly because there was a factory nearby doing that; however, workers were also concerned about the quality of hot meals, as they had heard that such food was of poor quality.

Management's perception of food provision

Management interviewed were aware of the potential correlation between serving hot meals and more satisfied/productive workers, but they also thought that it was important for workers to spend their lunch time (1 hour) with family at home and come back to work with more energy.

Moreover, there were other reasons why management were reluctant to the arrangement of hot meals in the workplace such as the perception of managerial staff that it would not be feasible to provide hot meals to workers, and that this would not have any positive effect on the workforce. Some management representatives believed that workers would complain about the quality of food or the arrangement, and small complaints could be a spark to more serious unrest. They did not think about the potential benefits of serving food (e.g. attract and retain good workers) and would not like to take the risk. Then they think there is lack of success cases from peer factories though there were indeed a number of them. Some management said that they had only heard of failure or rumors of failure (e.g. workers unrest) from peer factories. Then the logistical difficulties were the biggest drawback. Finally, they had no intention to go beyond the minimum, although some management had considered providing hot meals, they were concerned that nearby factories might feel "pressurized" – that their workers would start making the same demand of providing hot meals. Management did not want to upset the equilibrium and continued to provide the basic minimum.

Food intake comparison with national data

The outputs from the three day FFQ were compared with the average per capita per day food intake data collected from HIES- 2010. The comparison is as below:

Table 2 Comparison of average per capita per day food intake (in grams) by residence

Food Items	National	Observed
Total	1000.0	692.4
Cereals	402.9	220.5
Vegetables	166.1	180.3
Pulses	14.3	13.4
Milk	33.7	20.4
Oil	20.5	24.4
Meat, Poultry, Eggs and Liver	26.2	92.7
Fish	49.5	49.7
Fruits	44.7	82.0
Sugar	8.4	2.4
Miscellaneous items	36.5	6.6

It was rather interesting finding that the workers' average daily intake is lower than that of the national average. A common assumption was that the workers consume more rice to fill up their stomach and since the rice and lentil/pulse is provided at abundant at the hot-meal providing factories, intake of the cereals was expected to be higher than the national average. In reality, although workers think of rice as most nutritious food, still they think it makes them drowsy and be less productive after lunch period. Milk, sugar and miscellaneous products are less consumed by the workers due to the fact that those are considered as 'luxury' food to them. On the other hand, intake of vegetables, meat, poultry, eggs and liver were well over, fish intake was almost similar and most surprisingly fruit intake was way higher than the national average intake. The reasons were the fact that many of the observed workers consume better meal at the factory and there were fruits vendor outside the factories which sells fruits by pieces and slices rather than selling by weight as usual.

Investigation area: Worker and Management's preference and willingness to pay

A basket of food products and supplements were suggested to the workers as well as to the factory

management representatives in order to gauze their perception and interest in providing those in regular basis. Respondents were asked to rate the items using a 5-point scale, with 1 being the least preferred and 5 being the most preferred. Management representative from one factory refused to answer, as they firmly indicated that they had no plan to provide any of those. The basket contained: options for hot-meal, snacks, drinks and food supplementations.

Hot meal

Hot meal was most preferred by workers with young children aged under 2 in non-hot meal providing factories. However, in factories those were already providing hot meals, this group of workers preferred to spend some time at home during lunch hours to take care of their children, instead of staying in the factories for lunch.

Management, especially in non-hot meal providing factories, were reluctant to provide any food in general; but if food is to be provided (e.g. by executive's order), then they would prefer to serve hot meals than snacks.

Snacks

Snacks were popular (in descending order) among young adults, workers with children aged 2 to 5 and older workers. Workers in hot meal providing factories wanted to add snacks to current lunch as the serving portion was too small or the taste too poor).

Workers with young children aged under 2 did not prefer snacks (they preferred lunch instead).

The most preferred snacks were (in descending order): Noodles, yoghurt, egg, wheat bread, corn, and ethnic snacks.

Fortified biscuits were least preferred – almost no workers had heard of them, and many of them did not like to have the same biscuits every day.

Snacks were not preferred by the management in both types of factories –management from hot meal providing factories thought that they were providing good food already, while management from non-hot meal providing factories either did not want to disrupt production by distributing snacks or were reluctant to take on the logistical challenge in providing any food to a large workforce.

Drinks

Drinks were not attractive items among workers; among all workers only those with children aged 2 to 5 showed interest. The most preferred drinks were (in descending order) lemon water and milk.

Older workers in non-hot meal providing factories preferred drinks, while those in hot meal providing factories did not.

Management in both types of factories did not prefer to serve drinks other than water in the workplace.

Food supplements

No workers had chosen food supplements, as it was found that they had no idea what they were.

Management in non-hot meal providing factories, on the other hand, shown more interest in food supplement, e.g. multivitamin and zinc, than drinks.

No management preferred food supplements in hot meal providing factories – they did not see the need.

Investigation area: Factory Childcare center

Childcare center related data was collected from all 15 participating factories, but there were only 12 functional childcare centers found at the time of data collection. Data collected includes the following: current arrangements, physical condition of the childcare centers, facilities and services offered, qualifications of caregivers, food provision, satisfaction and preference over services.

By law all factories in Bangladesh are required to have a childcare center for workers' children aged under 6. In the Act, it is mentioned that factories may include provisions for accommodation, food and other facilities but are not made mandatory, so factories can make their own arrangement as per their own preferences.

The daycare centers were located either within the factory building (5 out of 12), or outside the main production facility (7 out of 12). Two out of twelve of the factories that had daycare center had air conditioning system and rest of the factories had working ventilation system. All the daycare centers were located near to the medical center and kept away from the generator, boiler rooms or power sources. Water, both tap and drinking, was available, as well as bedding for children.

In most cases, childcare centers were open during factory operation hours, it remained closed during overtime which was outside of normal working hours. However, if required under special

circumstances (e.g. during peak production), management could keep the childcare center open with limited services.

All the facilities were provided for free, except in two factories where workers needed to pay an one-off 300 taka for admission.

Four factories provided only snacks, the rest provided snacks as well as lunch, which include khichuri, soften rice, bread and jelly etc. Factories provided basic Early Childhood Development (ECD) materials, such as toys, reading materials, and equipment which promotes physical movement (e.g. see-saw). On the other hand, breastfeeding facility was widely available for all lactating mothers; workers who were not using the childcare center could still use the breastfeeding corner if their child was brought to the factory.

Only two factories had trained caregivers. Factory management selected caregivers based on their experiences of child caring, i.e. whether they had a child of their own, instead of prior childcare center experience or educational qualification. Two factories sub-contracted the management of their childcare centers to an NGO which had trained staff.

When asked if they had any improvement plan, i.e. plans to construct new room, moving the fixture to a permanent site, or start providing food or other materials, all but two factories were content with the facility and services currently provided and had no plan for further improvement. Two other factories would like to improve on their infrastructure development.

Workers' utilization and preference

Among the workers interviewed, only 50 percent (240 out of 480) were eligible for the childcare services, i.e. having children aged under 6; and only 13 percent (31 out of 240) of them did actually send their children to the childcare centers. Childcare center facilities at two other factories were suspended due to construction of new building; there was also very low interest from workers for any interim child caring arrangements.

Workers availing the service were satisfied in general, management were also willing to continue providing the services, mainly because it's a statutory requirement. Workers were willing to use the service mainly because at first, well-being of the children, as such workers thought that their children would be safe in the childcare centers, that they would be fed, taken care of, and remained active, which would not be possible if they stayed at home alone. Workers would like to keep their children closer and be able to see and feed them. Moreover, the factory doctor paid regular visit to check children's health status and administer vaccination as necessary. Then, word of mouth from other workers, since workers were naturally doubtful of the intention of management or quality of services, but once their peers experienced good services and conveyed that to other workers, they would start trusting the management and sent their children to the centers.

However, the utilization of childcare centers remained low, mainly because of the following reasons:

- Ensure of the quality of service: Three workers expressed their concern over caregivers' attention to children. They had questions over the quality of child care when two to three caregivers had to take care of 30 to 40 children.
- Having caregiver at home: Almost 87 percent (n=209 out of 240) of eligible workers did not use the daycare center as they had at least one elderly relative at home to look after the children. Mothers, mothers-in-law, sisters, and neighbors took care of their children, in two cases workers even had a paid caregiver at home. No workers were using any community childcare centers.
- Transportation: Workers usually walked or took bus to go to work. Travelling with children along the busy roads during peak hours could be risky and stressful.
- Industrial incidents and natural disasters: Many workers felt that their children were better off at home, as they were worried about the risk of fire and workers' unrest (and the agitation that usually followed), as well as natural

disasters such as earthquake. One management representative said that he personally thought it's not a good idea to let workers bring their children to work, as heavy machinery operated all day and there were always risks of fire and other industrial incidents.

- Lack of promotion: Factory provide the services because of legal requirement, and therefore not incentivized to actively promote the services. Many workers did not know the range of services provided (e.g. snacks, doctor's visits).

No worker was willing to pay for any child-caring services, as they strongly felt that factory should be paying for all types of services. On the other hand, factory management in most cases thought running a daycare center was a burden to their finances and brought no direct business benefits.

CONCLUSION AND WAY FORWARD

This study examined a purposeful sample of factories to understand the current practices and preferences of management and workers regarding food and child caretaking. The study found that Female workers in general had poor knowledge and misconceptions on nutritious diet. Working mothers were heavily burdened with cooking and spent more on food than the other co-workers.

Management in some hot meal providing factories found relationship between serving food and increased productivity, but the causality was not properly documented or referred to. Workers were also satisfied as it relieved them from the chores of preparing meals and had time to take breakfast.

Hot meal was most preferred by workers with young children aged under 2 in non-hot meal providing factories. Snacks were popular among most workers, although they were not preferred by the management in both types of factories –factories were either providing hot meals, did not want to disrupt production by distributing snacks, or were reluctant to take on the logistical challenge in providing any food to a large workforce.

Only 13 percent of eligible workers interviewed sent their children to factories' day-care centers. The utilization rate was low as workers preferred to have their children taken care of by their relatives at home; they were also unsure about the quality of service and worried about industrial accidents and road conditions from home to factory.

Way forward

The study recommends the following programmatic interventions:

Raising awareness and improving knowledge on nutrition and infant and young child feeding among female workers through peer education.

Improving nutritious content of food served in factories, and exploring the options of increasing dietary diversity through improvement of menu, use of fortified oil and iodized salt, training of food suppliers, and distribution of supplements (e.g. IFA supplement).

Establishing business and scientific case for factory's investment in food through research in (i) improving hot meals and ii) fortified snacks. Business data (e.g. productivity over hours in a work day) can also inform the timing of food intervention.

Upgrading the services of childcare center through training of care-givers, promoting breastfeeding and IYCF practices, promoting linkage between childcare center with local health programs and/or community-based childcare centers.

Malnutrition is a multi-dimensional issue which demands multi-stakeholder collaborations to close the gap, but efforts from others are critical to bringing about systematic change.

REFERENCES

Ahmed T, et. al. Nutrition of Children and Women in Bangladesh: Trends and Directions for the Future. J Health Popul Nutr. 2012 Mar; 30(1): 1–11.

Ali, P. and Pramanik, M. (1991). Conversion Factors and Dietary Calculation. Dhaka: Institute of Nutrition and Food Science, University of Dhaka.

Ali, P., Malek, P., Jahan, P. and Salamatullah, D. (1992). Deshio khaddo drobber pushtiman. 4th ed. Dhaka: Institute of Nutrition and Food Science, University of Dhaka.

Better Factories Cambodia, (2012). Study on the perceptions of garment factory owners on nutrition and the feasibility for pursuing canteen services in the garment sector in Cambodia. [online] Better Factories Cambodia. Available at: http://betterwork.com/cambodia/wp-content/uploads/2013/01/Harga-Report.pdf [Accessed 21 Jan. 2015]

BIRDEM, (2013), Dietary Guidelines for Bangladesh. National Food Policy Capacity Strengthening Programme.

Business Climate, (2014). Product Suitability and Availability Analysis. Dhaka: GAIN.

Business Climate, (2014). Enabling Environment Analysis Towards Nutritious Products at Workplace. Dhaka: GAIN.

Chowdury, N. and Ullah, M. (2010). Socio-Economic Conditions of Female Garment Workers in Chittagong Metropolitan Area–An Empirical Study. Journal of Business and Technology (Dhaka), 5(2).

"Countries: Bangladesh." Country Briefs. Food and Agriculture Organization of the United Nations (1999)

Available at: http://www.fao.org/countries/55528/en/bgd/ [Accessed 21 Jan. 2015]

Food and Nutrition Division, FAO Rome, (2001). Human Vitamin and Mineral Requirements. Report of a joint FAO/WHO expert consultation Bangkok, Thailand. Rome.

Food Planning and Monitoring Unit, Ministry of Food, (2014). Food Composition Table for Bangladesh. Dhaka: National Food Policy Capacity Strengthening Program.

Helen Keller International . Bangladesh: the burden of anaemia in rural Bangladesh: the need for urgent action. Dhaka: Helen Keller International; 2006. p. 4. (Nutritional Surveillance Project bulletin no. 16).

Institute of Nutrition, Mahidol University (2014). ASEAN Food Composition Database, Electronic version 1, February 2014, Thailand.

http://www.inmu.mahidol.ac.th/aseanfoods/composition_data.html

Latham, Michael C. 'Human Nutrition In The Developing World'. Food and Nutrition Series 29 (1997)

Merrill, R., Shamim, A., Ali, H., Labrique, A., Schulze, K., Christian, P. and West jr., K. (2012). High prevalence of anemia with lack of iron deficiency among women in rural Bangladesh: a role for thalassemia and iron in groundwater. Asia Pacific Journal of Clinical Nutrition, 21(3).

Statistics Division, Ministry of Planning, (2011). Report of the Household Income and Expenditure Survey 2010. Dhaka: Bangladesh Bureau of Statistics, pp.45-58.

War on Want (2011). Stitched Up: Women workers in the Bangladeshi garment sector

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THE PREDICTIVE EFFECT OF DEPRESSION ON SELF RATED HEALTH: A ONE YEAR LONGITUDINAL STUDY AMONG ADULT POPULATION IN BANGLADESH

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Abstract

Objectives. To examine the independent effect of depression on subsequent self-rated health (SRH) among adult community based population in Bangladesh over a one year period controlling for socio-demographic, chronic diseases and symptoms, physical disability, risk behaviors, and life events.

Methods. We examined data from 3455 participants aged 18 years and above who participated in the 2015 January and 2016 January Health and Socio Economic Survey of Independent University, Bangladesh. Using multiple logistic regressions, depression at baseline was examined to predict self rated health at one year follow-up adjusting for socio-demographic, chronic diseases and symptoms, physical disability, risk behaviors, and life events.

Results. Percentage of participants with depression among those reporting poor SRH was almost double compared to those reporting good SRH (12.4% and 6.5% respectively).Respondents with depression at baseline had 33% higher odds of reporting poor SRH in the follow up round compared to those with no depression (OR = 1.33, 95% CI = 1.007, 1.749, p< .044).

*Conclusions.*Depression independently predicts SRH among people aged 18 years and above. SRH may be used as a proxy indicator to screen population for depression in primary care. Guidelines can be developed to facilitate further screening, management and or appropriate referral.

INTRODUCTION

Depression affects over 350 million people around the world. It has been ranked as the 4th leading cause of disability worldwide by The World Health Organization (WHO)[1] and projects it to become the second leading cause by 2020[2]. Depression is a commonly occurring, serious, recurrent disorder, affects people across life span, has been linked to diminished functioning, years of productive life lost, medical morbidity and mortality.[3-6]

However, despite availability of evidence based management for depression, people fail to recognize the psychological and somatic symptoms of depression and thus do not seek medical help or visit other disciplines of medicine in primary care.[7-10] Thus, identification of patients in primary care who may have depression followed by adequate screening, management and care is critical to reduce the burden associated with the disorder.

However, high patient load in primary care centers usually deter health care professional from using methods of detecting depression that may take long.[11-13] This highlights the need of a simple and easy to use tool that may act as a proxy indicator to

identify patients who may have depression only or as a co morbid disorder.

Self rated health (SRH) is a one item question, easy to implement and can assess one's objective, subjective and psychosocial aspects of health.[14,15] It has been used in several studies for population health monitoring[16-18] and has been found to be associated with depression in a number of studies. In a study conducted among older institutionalized population, depressive symptoms were among the main determinants of SRH.[19] In another population based study of older people depressive symptoms were associated with SRH and suggested to be of particular interest due to potential for change of these factors through public health interventions.[20] In a study of a representative Spanish population, depressive symptoms showed the strongest relation to poor SRH.[21] However these studies were done either among elderly population, institutionalized population or were cross-sectional in design. All these factors limit their generalization to other age groups, the general population and lack of ascertainment of the temporal relationship of depression and SRH respectively. Among a few studies conducted among the young age groups, a cross sectional study among university students using Cross National Student Health Survey data by country and gender found psychosomatic complaints to be the most important indicators forming a rating frame for student's SRH.[22]Although participants were from the younger age group, the studies were cross sectional in design and hence lack the power to determine direction of association.

One recent longitudinal study in 2014 from three waves of Health and Retirement Study (HRS) in the United States showed depression to be the strongest predictor of SRH.[22] However, this study was conducted among people aged 50 years and above and thus results cannot be generalized to other age groups.

In our paper we looked into the temporal relationship of depression and SRH among a community based sample of adult rural population aged 18 years and above in Bangladesh.

Our specific aim was to determine whether depression is independently associated with subsequent poor SRH over a one year period among adult Bangladeshi population controlling for socio-demographic characteristics, chronic diseases and symptoms, functional disability, risk behaviors, and life events.

METHODS

Study Population

Our study population consists of participants in the cohort of the health and socio-demographic survey of Independent University, Bangladesh (IUB).Baseline information was taken from a total of 3455 respondents aged 18 to 75 years from 2015 data.

The health and socio-demographic survey is conducted by Independent University, Bangladesh (IUB) across Bangladesh among respondents 18 years of age and above. Data is collected by face to face interview with respondents using a pre-tested questionnaire. The survey is conducted in eight sites located across Bangladesh in the North East, North West and South West of the country (http://www.iub.edu.bd/lfe/index.html). Each study site was purposively selected based on the availability of a service oriented non government organization working at the respective sites by means of which access to households could be achieved.

At each of the sites from among all the villages three villages were randomly selected. From each of the selected villages, hundred households were randomly selected for inclusion into the cohort and from each of the selected households, respondents of 18 years and above are interviewed using structured questionnaire. For this particular study, data from eight survey sites from the rounds January 2015 and January 2016 were used. A total of 3455 respondents aged 18 years or more were included in this study. Table 1 presents baseline characteristics of this cohort in January 2015.

Measures

Self Rated Health

Self assessed health was asked using the question 'how do you assess your health: good, moderate or poor'? Moderate and poor SRH options were

combined to form 'poor SRH' and the category of 'good SRH' was used as reference in the analysis.

Depression

Depression was measured using the 9-item Patient Health questionnaire (PHQ-9)[24] which is a widely used self-reported measure of depression. The Bangla version of PHQ-9 that was used for this that was validated in Bangla language in a prior study.[25] Scores between 0-9 were coded as 'no depression and score of 10 and above were coded as 'depression'.

Socio-demographic variables

The set of socio-demographic variables included age (grouped into 18 to 30; 31 to 40; 41 to 50 and > 50 years), gender (male or female), marital status (married/not currently married), education and income. Education was classified into no education (never went to school); primary (class I to V); secondary (class VI to X); and high education (> 10) strata. Income was classified based on average monthly individual incomes reported and were stratified into low (up to Taka 5,300) and high income group (> Taka 5300) based on the national minimum wage of Taka 5,300.

Chronic Disease and Symptoms

Chronic diseases was measured by asking respondents if a health professional had told them they had any of the following chronic diseases: i) heart disease, ii) diabetes, iii) stroke, iv) cancer, v) arthritis, vi) respiratory distress, vii) Hypertension and viii) Stroke.

Chronic Symptoms was measured by asking respondents for the presence or absence of any of the following symptoms in the past six months prior to interview: i) Asthma or breathing difficulty, ii) Loss of appetite, iii) Loss of weight, iv) Chest pain, v) Headache, vi) Cough with blood, vii) Gastric ulcer, viii) Skin rash, ix) Burning sensation in urine. All responses were dichotomous.

Physical Disability

This was measured using the responses 'no disability' or 'some disability' to the question 'do you have any physical disability? The responses were dichotomized into 'Yes' and 'No'.

Risk Behaviors

Current smoking was considered as a risk behavior. Individuals who smoked at least one tobacco product daily in the past 12 months were considered as current smokers.

Life Events

Life events question included the presence or absence of any of the following adverse life events in the past 6 months prior to the interview: i) Loss of a job; ii) Retirement; iii) Loss of crops or loss in business, iv) Theft in the house, v) Divorce or separation from spouse; vi) Clash among family members; vi) Severe illness; vii) Facing violence; viii) Death of spouse; ix)Death of a close relative; x) Major reason for anxiety; xi) Marriage of a family member; xii) New job; xiii) Birth of a child; xiv) Away from family; and xv) Food insecurity.

DATA ANALYSIS

Data analysis was conducted using Stata 12 in 2 stages. In the first stage we conducted descriptive analysis to show the distribution of baseline characteristics with respect to SRH status in the baseline year, 2015.In the second stage multivariate logistic regression was used to estimate the odds ratio for self-rated poor health as a function of depression, socio demographic variables, self-reported chronic disease and symptoms, physical disability, life events and risk behaviors.

All base line information including depression was taken from January 2015 data. Self rated health data was taken from January 2016.

RESULTS

Table 1 shows the distribution of baseline characteristics with respect to depression status in the year 2015 (baseline year).Participants reporting poor SRH had higher rates of depression (12.4%) compared to participants with no depression (6.5%).Respondents in the older age group had significantly higher percentage of poor SRH compared to the lower age group (> 51 yrs=43%; 41-50 yrs= 23.9%; 31-40 yrs = 17.8%; 18-30 yrs = 15.2%). Lower educated participants reported more poor SRH (no education = 40.2%, primary education = 22.2 %; secondary education = 19.2%, and >11yrs

of education = 5.6%) compared to the higher educated participants. Females had a significantly higher percentage of poor SRH compared to males (50.7% and 49.3% respectively)

In table 2 respondents with depression in base line had 33% higher odds of reporting poor SRH in the follow up round (OR=1.372, 95% CI = 1.031,1.825,P< .044).Respondents of both sex from the older age group were more likely to report poor SRH compared to their younger counter parts(age group above 51, OR = 5.247 ,95% CI= 4.105,6.708, p< .000; age group 41 to 50, OR = 2.39, 95% CI=1.847,3.088, p< 0.000; age group 31 to 40 years, OR = 1.30, 95% CI=1.008,1.680, p<.04) while respondents with higher education were less likely to report poor SRH compared to their counter parts with lower levels of education (secondary education OR = 1.33, 95% CI = 0.943,1.880, p< 0.10; primary education OR = 1.69, 95% CI =1.196,2.403, p< .003, no education OR =2.01, 95% CI =1.437,2.798,p< 0.000).Respondents with self reported chronic disease had 25% higher odds to report poor SRH compared to those without(OR= 1.25, 95% CI = 1.056,1.487, p< 0.01).Marital status and life events, did not have any significant effect on SRH. After controlling for all the predictor variables, depression remained a significant predictor for SRH

Table 1 Sample characteristics of Respondents with respect to self-rated health status in baseline year (N =3455)

	Good SRH % (N=2477)	Bad SRH % (N=978)	Total % (N=3455)	P value
Depression				0.000
No	93.5	87.6	3168	
Yes	6.5	12.4	282	
Age				0.000
18-30	36	15.2	1041	
31-40	28.3	17.8	876	
41-50	19.3	23.9	712	
>50	16.4	43.0	826	
Education				0.000
No education	35.2	53.0	1389	
Primary education	22.4	22.2	771	
Secondary education	28.7	19.2	898	
>11	13.8	5.6	397	
Income				0.028
Low income	57.7	62.9	2104	
Upper income	42.3	37.1	1351	
Marital status				0.210
Married	85.8	87.4	2974	
Unmarried	14.2	12.6	475	
Gender				0.019
Male	53.7	49.3	1812	
Female	46.3	50.7	1643	
Chronic disease & symptoms				0.000
No	64.6	51.6	2104	
Yes	35.4	48.4	1351	

Physical Disability				0.000
No	94.9	89.4	3220	
Yes	5.1	10.6	231	
Smoking Status				0.000
No	62.2	48.6	2016	
Yes	37.8	51.4	1439	
Life Events				0.004
No	82.4	78.1	2804	
Yes	17.6	21.9	651	

Table 2: Multiple Logistic Regression table

Independent variables	Odds Ratio	95% Confidence Interval	P value
Depression No Yes	1		
	1.33	1.007148 1.749249	0.044
Age 18-30 31-40 41-50 >50	1		
	1.30	1.008656 1.680072	0.043
	2.34	1.847083 3.088128	0.000
	5.25	4.104524 6.708241	0.000
Education Higher Education (> class 11) Secondary education Primary education No education	1		
	1.29	.9005093 1.845327	0.165
	1.58	1.098563 2.277364	0.014
	2.01	1.437168 2.798016	0.000
Income Higher income group Lower income group	1		
	1.22	.9818295 1.512653	0.073
Marital Status Married Unmarried	1		
	1.09	0.8311411 1.421165	0.543
Gender Male Female	1		
	1.32	1.064544 1.635036	0.011
Chronic Disease & symptoms No Yes	1		
	1.26	1.056079 1.486777	0.01
Physical Disability No	1		

Yes	1.22	.9441303 1.714908	0.11
Current Smoker No Yes	1 1.12	0.9408725 1.337507	0.20
Life Events No Yes	1 1.06	0.8620078,1.298533	0.590

DISCUSSION

The purpose of the present paper was to examine the independent effect of depression on perceived health status in a sample of respondents of 18 years and above in Bangladesh. In this paper we controlled for several known confounders of SRH like socio-demographic variables, self reported chronic diseases and symptoms, risk behaviors and life events. Similar to findings in other papers, age, education, income and chronic disease attenuated the predictive power of depression for SRH but remained significant. Respondents with depression had 33% higher odds of reporting poor SRH compared to those who were not depressed at baseline.

These findings build upon a previous study that found depression to be the strongest predictor of self rated health in a longitudinal study among adults aged 50 to 104 years.[22] In our study, population age ranged from 18 years and above and compared to the reference age group of 18-30, participants of all age groups had higher odds of reporting poor SRH. This finding is important because unlike other chronic diseases depression affects people across life span beginning as early as in childhood and adolescence[26-28] and thus it is crucial that they are detected at the earliest and managed.

Despite availability of cost effective treatments[29,30] a substantial number of people visiting primary care do not recognize the psychological or somatic symptoms of depression and seek help from other disciplines of medicine.[7-10] Self rated health can be used as a proxy

indicator or risk indicator to identify patients in primary care who may report poor SRH because of underlying depression. Upon primary identification, further screening for depression and necessary interventions can follow.

The value of mental health in primary health care has been noted worldwide and focusing efforts in this area has become a priority.[31] Mild to moderate depression is treatable using simple interventions like peer counseling at the community level while severe depression may require medication and assessment by a specialist in addition to the above. So, if it is possible to identify patients who may have depression, management should not be difficult.

In our paper, although participants with low income had 21 % higher odds of reporting poor SRH, results were not significant which could be due to insignificant variation among the income groups. Marital status did not show any significant association with SRH which is consistent with findings in a few papers.

STRENGTHS

The sample size of this study is fairly large, it is longitudinal in design that specifies the direction of association between the predictor and outcome variable and respondents have been selected from across the country.

LIMITATIONS

One of the limitations in this study is that we followed the respondents only for one year and the sampling procedure was not completely randomized.

PUBLIC HEALTH IMPLICATIONS

Patients visiting primary care who may have solely depression or as co morbidity may be identified using SRH as a proxy for depression. Guidelines can be

made for further screening, management and or referral to specialists.

REFERENCE

Murray CJL,Lopez AD.Evidence-based health policy—lessons from the Global Burden of Disease Study.Science.1996;274:740-743.[PubMed:8966556

Murray CJL,Lopez AD. The Global Burden of Disease: A comprehensive assessment of Mortality and Disability from Diseases, Injuries, and Risk Factors in 1990 and Projected to 2020.1996Cambridge,MA Harvard University Press Most comprehensive study of comparative disease burdens ever undertaken. Major depression estimated to be among the most burdensome disorders worldwide.

Spijker J,Graaf R,Bijil RV,Beekman AT,Ormel J,Nolen WA.Functional disability and depression in the general population.Results from the Netherlands Mental Helath Survey and Incedence Study (NEMESIS).*Acta Psychiatr.Scand*. 2004;110:208-214.[PubMed:15283741]

Ustun TB,Ayuso-Mateos JL,Chatterji S, Mathers C, Murray CJ.Global burden of depressive disorders in the year 2000.*Br. J. Psychiatry*.2004;184:386-392.[PubMed:15123501]Most extensive cross-national study of major depression ever undertaken.

K Zivin, P Pfeiffer, M Ilgen, DE Welsh, J McCarthy, M Valenstein, E Miller, K Islam, HC Kales, "Years of Potential Life Lost Associated with Depression Among Veterans," *Psychiatr Serv*. 2012 Aug 1:63(8):823-6.

MA Whooley, P de Jonge, E Vittinghoff, C Ottie, R Moos, RM Carney, S Ali, S Dowray, B Na, MD Feldman, NB Schiller, WS Browner, "Depressive Symptoms, Health Behaviors, and Risk of Cardiovascular Events in Patients With Coronary Heart Disease," *JAMA*,2008;300(20);2379-2388.

Australian Bureau of Statistics.National Survey of Mental Health and Wellbeing:Summary of Results,2007.Canberra,Australia;2007.

Gonclaves DC, Albuquerque PB,Byrne GJ, Pachana NA. Assessment of depression in aging context:general considerations when working with older adults.*Prof Psychol Res Pr.* 2009;40(6):609-16

Fiske A, Wetherell JL,Gatz M.Depression in older adults.*Annu Rev Clin Psychol* .2009;5(1):363-89.

Patel V,Simon G,Chowdhary N,Kaaya S,Araya R.Packages of care for depression in low and middle income countries. *PLoS medicine*. 2009;6(10):e1000159.

Baik S-Y,Bowers BJ,Oakley LD,Susman JL.The recognition of depression: the primary care clinician's perspective.Ann Fam Med.2005;3(1):31-37

Toner R,Snape C,Acton S,Blenkiron P.Do general practitioners adhere to NICE guidelines for depression? Systematic Questionnaire Survey. *Prim Health Care Res Dev*. 2010; 11(2):123-131.

Mitchell Aj,Kaar S,Coggan C, Herdman J.Acceptability of common screening methods used to detect distress and related mood disorders-preferences of cancer specialists and non-specilaists.*Psychooncology*.2008;17(3):226-236

Mavaddat N,Kinmonth AL, Sanderson S, Surtees P,Bingham S, Khaw KT.What determines Self Rated Health (SRH)?A cross-sectional study of SF-36 health domains in the EPIC-Norfolk cohort.*J Epidemiol Community Health*. 2011;65(9):800-806.

Ferguson RJ, Robinson AB,Splaine M.Use of the reliable change index to evaluate clinical significance in SF-36 outcomes.*Qual Life Res*.2002;11(6):509-516.

Jerant A, Tancredi DJ,Franks P.Mortality prediction by quality-adjusted life year compatible health measures:findings in a nationally representative US sample. *Med Care*.2011;49(5):443-450.

Miilunpalo S,Vuori I,Oja P,Pasanen M,Urponen H.Self-rated health status as a health measure:the predictive value of self-reported health status on the use of physician services and on mortality in the working-age population.*J Clin Epidemiol*.1997;50(5):517-528.

Goldberg P,Gueguen A,Schmaus A,Nakache J-P,Goldberj M.Longitudinal study of associations between perceived health status and self reported diseases in the French Gazel cohort.*J Epidemiol Community Health*.2001;55(4):233-238.

Damian J,Barriuso RP,Gama EV.Factors associated with self-rated health in older people living in institutions.*BMC Geriatrics*.2008;8(5).

Arnadottir SA, Gunnarsdottir ED,Stenlund H,Olsson LL. Determinants of self-rated health in old age: A population-based, cross-sectional study using the International Classification of Functioning.*BMC Public Health*.2011;11:670.

Millan Calenti JC,Sanchez A,Lorenzo T,Maseda A.Depressive symptoms and other factors associated with poor self-rated health in the elderly:Gender differences.*Geriatr Gerontol Int* 2012;12:198-206.

Mikolajczyk RT,Brzoska P,Maier C, et al.Factors associated with self-rated health status in university students:a cross-sectional study in htree European countries.*BMC Public Health*.2008;8:215.

Wagner D,Short JL.Longitudinal predictors of Self-Rated Helath and Mortality in Older Adults.*Prev Chronic Dis*.2014;11:130241.DOI:http://dx.doi.org/10.5888/pcd11.130241.

Kroenke K,Spitzer RL,Williams JBW.The PHQ-9:validity of a brief depression severity measure.J Gen Intern Med.2001;16(9):606-613.

Roy T, Lloyd CE, Parvin M, Mohiuddin KGB, Rahman M**.** Prevalence of co-morbid depression in out-patients with type 2 diabetes mellitus in Bangladesh**.** *BMC Psychiatry*. 2012;12:123.

Asarnow, J. R., Jaycox, L. H., & Tompson, M. C. Depression in youth: Psychological interventions. *Journal of Clinical Child Psycholog.*2001; 30, 33-47.

Hazel, P. Depression in children. *British Medical Journal.*2002; 325, 229-231.

Hazel, P. Depression in children and adolescents. *American Family Physician.*2003 67, 577-580.

Hayman S,Chishlom D, Kessler R,Patel V,H.W..Mental Disorders.In:Jamison D,Breman J, Measham A, et al.,editors.Disease Control Priorities in Developing Countries (2nd Edition).New York:Oxford University Press.2006.

Patel V, Araya R, Chatterjee S, Et al.Treatment and prevention of mental disorders in low-income and middle income countries.*Lancet*.2007;15;370 (9591):991-1005.

World Health Organization (WHO).Organizaiton of services for mental health.In: Mental Health Policy and Service Guidance Package.Geneva.2003.

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EQUALITY IN EDUCATION; AN ANALYSIS OF EDUCATIONAL POLICIES AND LAWS RELATING TO PHYSICALLY DISABLED CHILDREN IN SRI LANKA

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Abstract

Children with disabilities are not being treated as equal basis in a society because of various reasons. They have the same rights such as the right to life, right to good health care, nutrition and education as any other child in each and every sector of the society. There are various international conventions, standards and Action plans charring out by the various international bodies in order to promote and protect the rights of children with disabilities in the world. Right to education is a basic human right which gives power to transform the life and creates a path to sustainable human development. The research seeks to examine the legislative and policy making approach of the educational right of the children with physically disabled in Sri Lanka. And also it will focus on how far the national legislations and policies are harmonized with the provisions of the International Conventions and standards. Article 12 (4) of the 1978 Constitution of Sri Lanka provides an opportunity to take affirmative action to children in the law making process. Sri Lanka is a responsible state party to the International Conventions regarding child rights. The objective of the research is to identify the key issues on legislative and administrative process comparatively with India. The researcher having relied on Doctrinal methods of research .It shall involve the study of the International Conventions, Recommendations, Committee Reports, Legislations and Constitutional provisions of Sri Lanka, journals ,Articles and books.

Keywords: right to education, physically disabled children, educational policies, legislative approach

INTRODUCTION

"There are certain groups of human beings which either by nature or because of deep-rooted custom is weak and vulnerable, such as, a child, women, disabled persons, aged persons, migrant workers or persons belonging to a particular race."[i] Children with disabilities are the vulnerable, most suffering and excluded within the community, at school and even within their family as well. Negative attitudes of the society and the policy making authorities and the poor educational states of the children with disabilities are lead them to put at risk for violence, abuse and exploitation.

The Right to Education under the International Conventions

Education is the key to success. Right to education is a basic human right. The Universal Declaration of Human Rights encouraged the member states to protect and promote basic human rights to their citizen without considering their nature. The Convention on the Rights of the Child (CRC) was adopted in 1989 and it can be considers as the umbrella convention regarding the rights of the child. Article 28, Para 1 of the CRC has recognized the right to education as the key human right of the children. Physically disabled children are the most vulnerable group in the society. As considering their

needs and safety the United Nation's Convention on the Rights of the People with Disability was adopted in 2006.The objective of the convention were to ensure their wellbeing, social security and to form a platform to enjoy their rights without any discrimination.

Legislative attempts to Protect and Promote the Rights of the Disabled Children in Sri Lanka

The government had initiated training, education and rehabilitation through various governmental agencies since early 1960s.Constitution as a basic law of the country recognized the rights of the children without considering their nature. Article 12 of the 1978 Constitution of Sri Lanka specifically guaranteed the right to equality and equality before the law. The Constitution specifically permits the state to make special provisions regarding children and women.[ii] Apart from the basic law of the country the Parliament of Sri Lanka has enacted several legislations to protect the rights of the disabled person .In 1988 Public Administration Circular was issued regarding public service and it gives 03% of opportunities for people with disabilities. The Rights of the People with Disability Act was enacted in 1996 with the objectives of to protect and promote the rights of the disabled persons. Section 37 of the Act states that disabilities means any person who, as a result of any deficiency in his physical or mental capabilities, whether congenital or not, is unable by himself wholly or partly, the necessities of life. Disability results from impairment and refers to any limitations in or absence of ability to perform an activity or skill considered appropriate in relation to age, sex or social-cultural norms (Wood & Vradley, 1980).

The National Council for the Persons with Disabilities was established as a main administrative body under the Act. Under section 12 of the Act the main function of the Council is to take necessary steps to promote and protect the rights of persons with disabilities. It has powers to make appropriate policies and guidelines to the government. The government of Sri Lanka had taken a land mark legislative enactments to protect and promotion of the rights of the disabled persons. In line with the international conventions and regulations in 1997 the government of Sri Lanka had taken an important decision regarding the inclusive education to children with disabilities under the General Education Policy. Education can be categorized as primary, secondary, higher and vocational. In Sri Lanka few vocational training centers have granted facilities to the disabled persons. Therefore it is important to make necessary arrangement to widen the opportunities to the disabled persons. As mentioned above Sri Lanka adopted the inclusive education policy in keeping with UN Convention on the Rights of the Child. The National Policy on Disability states that "children who have disability obtain education in Government schools either through inclusion in the ordinary classroom or in special education units attached to ordinary schools."[iii]The compulsory Education Ordinance[iv] is equally applicable to all children without any discrimination between the ages of five to fourteen years. However the education system lacks the capacity to deal with the physically disabled children. It appears both in the infrastructure and the human expertise.[v] "Without social acceptance and some reasonable approximation of academic equality, special education students are likely to continue to experience academic difficulties in the inclusion classroom."[vi]Sri Lanka as a developing country has faced various kind of difficulties by adopting inclusive method in education system. Lack of sufficient number of specialized personnel, adequate infrastructure facilities are the major constrains in this field. Therefore funds should be allocated for research and projects to discover the major problems and to develop curriculums for disabled children. "A curriculum must prepare students for both current and future environments in which they do or will participate."[vii]Therefore the tasks of the government lie not in the present but for the future as well. Under Section 12 of the Act the principal function of the Council shall be to ensure the promotion, advancement and protection of the rights of persons with disabilities. To advise the Government on the promotion of the welfare of, and the protection and advancement of rights of, persons with disabilities; to take all such measures as are necessary, in consultation with the relevant Ministries, Provincial Councils, local authorities, District and Divisional Secretariats, public and private sectors and organizations, to promote the furtherance of, and safeguarding, the interests and rights of persons with disabilities to establish and maintain institutions to

accommodate and care for persons with disabilities and provide educational and vocational training for such persons; to encourage the establishment by the State and by private individuals, of institutions to accommodate persons with disabilities and the provision of educational and vocational training to such persons are the other important function of the Council.[viii]The established law of the country provides bulk of task to the Council.

SUGGESTIONS AND CONCLUSION

However specific problems of the disabled children within the educational system are still remaining. Therefore it the duty of the law making authorities to address the issues by making special provisions to the legislations .Lack of institutional attitudinal and technological obstacles the children with physically disabled do not enter the systems in the regular schools. In order to address the specific needs of children with physically disable the law makers of the country should have significantly contributed their effort. In such a case the government should allocate the funds to uphold the right to education of the disabled children. In order to maintain the inclusion education the separate units within the regular schools must be established. "Special teachers take the major responsibility for children with disabilities in a segregated environment. Children with disabilities are denied the opportunity to learning with children in regular classroom, and interaction with other children in the school is mainly restricted to social activities."[ix] Identifying obstacles and challenges in implementing these rights and develop should be an agenda for the empowerment of persons with disabilities of the government. Therefore it is the firm responsibility of the government to make allocation for the welfare of the disabled children in the scheme of education. Another important problem is that the social isolation of the disabled children. It is hard to collect the statistical regarding the number of these sample. Negative attitude of the parents is also connected with the above problem. Therefore the government should allocate the necessary funds for research and projects regarding the disabled children in the society. Apart from that it is suggested that separate schools for blind and deaf children should be established. Teacher training and rehabilitation programme should be promoted. All international conventions, regulations and standards claimed from their member states to protect and promote of the rights of the disability children within a broad human rights framework including civil, political, economic, social and cultural rights. Policy makers of the country must be in line with the three major accepted norms specified in the broad international standard. The equalization of opportunities for persons with disabilities: the full and effective integration of persons with disabilities in social life and development; and standards to protect and promote the rights of persons with disabilities are the above discussed accepted norms and it is the duty of the policy makers to increased and promote national and local communities to the goals and objectives of international human rights standards pertaining to persons with disabilities.

REFERENCES

The Constitution of Sri Lanka 1978

National Policy on Disabilities 2003 Sri La The Rights of the People with Disability Act 1996.

Childhood disability in developing countries Issues in habilitation and special education edited by Kofi Marfo,Sylvia Walker,Bernard Charles Invisible Children in the Society and Its Schools, 3rd edi. 'Hoping for the Best: 'Inclusion' and Stigmatization in a Middle School, Bram Hamovitch

Dr.H.O.Agarwal, Human Rights, 12th ed.2010. When Is Separate Unequal? A Disability Perspective, Ruth Colker Cambridge.

Understanding Disability; A Lifespan Approach, Peggy Quinn, Sage Sourcebooks for the Human Services.

Disabled Children & Developing Countries, edited by Sue Books.

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[i] Dr.H.O.Agarwal,Human Rights,12th ed.2010 Central Law Publication,p113

[ii] Article 12(4) of the Constitution 1978 Sri Lanka

[iii] National Policy on Disabilities p16

[iv] No 1003/5 of 1997

[v] Source; Ministry of Social Welfare. Social Research Study on Disability, draft

[vi] Invisible Children in the Society and Its Schools,3rd edi. 'hoping for the Best: 'Inclusion' and Stigmatization in a Middle School, Bram Hamovitch ,p278

[vii] David Baine-Early Education Curriculum Design for handicapped children in developing countries. P 139 Childhood disability in developing countries Issues in habilitation and special education edited by Kofi Marfo,Sylvia Walker,Bernard Charles

[viii] Section 13 of the Act

[ix] http://www.unicef.org/rosa/InclusiveSlk.pdf

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MENTAL HEALTH SERVICES IN PROTRACTED CONFLICT AREA OF MANIPUR, INDIA: UNDERSTANDING THE CHALLENGES FOR POLICY MAKERS

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Abstract

There is a growing recognition to address mental health needs globally. This need gets amplified in the context of protracted conflict. Despite this, services for mental health in developing countries remains poor. In India, the National Mental Health Policy (2014) as well as the Mental Healthcare Bill (2016) envisages the provisioning of mental health services at district level. The effects of conflict on people residing in protracted conflict areas are multiple. Exposure to and experience of conflict, in scenarios where even the minimal provisioning is adversely affected, leaves a large part of the population severely traumatized and without access to services. The nature of conflicts in Manipur is complex and involves intra/ inter –ethnic and state vs. people. Mental health manpower and public health infrastructure in the state is at bare minimum. A community based survey by the authors (2015) on randomly selected 666 respondents suggests high mental health burden in the study population. Over a quarter of the respondents (29.6%) reported a minimum of two or more symptoms across all four domains. Thus, the challenge for policy makers and service providers alike remain a mammoth task. The paper examines the challenges and discusses alternate models of service delivery.

Keywords: Mental Health, Service Provisioning, Protracted Conflict

INTRODUCTION

This paper attempts to understand the challenges of policy makers and service providers in provisioning of mental health services in protracted conflict areas, where mental health burden in high. At the same time this paper discusses what can be the way forward for mental healthcare service provisioning. The background paper of WHO (2012) on vulnerability and risks related with mental health lists conflict and war as significant environmental risk factors. In general, service provisioning for mental health around the globe is not very promising and the coverage is very poor in low income as well as middle income countries. Between 76% and 85% of people with severe mental disorders receive no treatment for their disorder in low-income and middle-income countries (WHO, 2013). The issue of poor service provisioning is also rooted in very low level of public expenditure on mental health services, which is less than $2 *per capita* in lower and middle income countries, and a major chunk of this expenditure goes for inpatient services (WHO, 2013). Within a country mental health services are skewed either in favor of urban centers or to those areas, which are relatively peaceful.

Mental Healthcare in India: Current Scenario

In concurrence with the global framework of WHO' Mental Health Action Plan 2013-2020, India also showed its commitment and recently on 8th August 2016, the Rajya Sabha (upper house) of Indian Parliament passed the long pending Mental Healthcare Bill of 2013, which following due

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processes, will become an act. The Mental Healthcare Bill, 2016 under section 18 gives its citizens the right to access mental health care, which includes service provisioning or funding by appropriate government authority in a geographically accessible way and without any discrimination. In brief the key provisions related to access of mental healthcare as per the Mental Healthcare Bill (2016) includes:

Text Box 1 Key Provisions of the Mental Healthcare Bill 2016

(1) Every person shall have a right to access mental health care and treatment from mental health services run or funded by the appropriate Government.

(4) Without prejudice to the generality of range of services under sub-section (3), such services shall include—
(a) provision of acute mental health care services such as outpatient and inpatient services;
(b) provision of half-way homes, sheltered accommodation, supported accommodation;
(c) provision for mental health services to support family of person with mental illness or home based rehabilitation;
(d) hospital and community based rehabilitation establishments and services;
(e) provision for child mental health services and old age mental health services.

(10) Without prejudice to the generality of range of services under sub-section (3) of section 18, the appropriate Government shall notify Essential Drug List and all medicines on the Essential Drug List shall be made available free of cost to all persons with mental illness at all times at health establishments run or funded by the appropriate Government starting from Community Health Centers and upwards in the public health system:

(11) The appropriate Government shall take measures to ensure that necessary budgetary provisions in terms of adequacy, priority, progress and equity are made for effective implementation of the provisions of this section.
Source: Subsection 1, 4, 10, and 11 under Section 18 of Mental Healthcare Bill, 2016

The bill, which will replace the existing Mental Health Act, 1987, is only the first step in this direction. According to WHO Mental Health Atlas of 2014, there is severe short fall in terms of mental healthcare service provisioning in India, which includes health infrastructure as well as human resource. India has 0.6 mental health workers per 100,000 population and 2.1 Mental hospital beds per 100,000 population (WHO Mental Health Atlas, 2014). India has one of the lowest levels of public expenditure on health i.e. 0.9% of its GDP in 2003 to 1.4% of its GDP in 2014 (World Bank, 2016) and only a small portion of it goes for mental healthcare provisioning. The National Mental Health Survey of Manpower resources carried out by the Directorate General of Health Services (DGHS), Ministry of Health and Family Welfare (MoHFW), Government of India in 2002 estimated 10,270,165 cases of major illness and 51,251,625 cases of minor illness, which is 5.98% of its total population as per the census of

2001. Currently the first National Mental Health Survey is ongoing and will assess the mental health burden in the country.

The Context: Protracted Conflict in Manipur

Protracted Conflict is a term that is used to emphasize the 'prolonged and often violent struggle by groups for such basic needs as security, recognition and acceptance, fair access to political institutions and economic participation' (Ramsbotham, 2005). The conflicts in Manipur are often described by humanitarian organizations as *'protracted'* and the state has seen disturbances since the last few decades. The nature of conflicts in Manipur are varied and complex as it involves the clashes between the state-led armed forces and the non-state armed groups (IPCS, 2014), involves many actors and it is no more the struggle of one group against the other or one group against the state. The involvement of many actors increases the complexity manifold and also expands the issues at stake according to several researchers (Butalia, 2008). According to Fernandes (1999), in Manipur the 29 tribes are divided into Naga and Chin with a few buffer groups wanting to join one or the other. Oinam (2016) discusses the pattern of ethnic conflict in Manipur and states that there are 29 tribes in the scheduled list with Naga and Kuki being the dominant ones. The Meitei community constitutes

over half the population and controls the development process. The main competition in recent decades between the tribals and the Meitei and between relatively strong tribes like the Naga and Kuki has been for land (Fernandes, 1999). Conflict and violence has become an embedded feature of the society and has several far reaching consequences. Displacement due to conflicts has caused ethnically mixed villages to disappear slowly (Butalia, 2008). Among other casualties, Kumar, Aphun, Singh, & Thangjam (2011) emphasize that livelihood suffers majorly in conflict settings. In Manipur, the tribes that inhabit the hills and the people of the valley shared a cordial relationship in the market economy through exchange or barter. The authors discuss that due to conflict there has been a 'gradual localization' of the market (Kumar, Aphun, Singh, & Thangjam, 2011), which has resulted in poor development. This again impacts the state of mental health "Some researchers postulate that these 'invisible wounds' can leave a people more vulnerable to recurrence of violence" (World Bank, 2003).

According to WHO (2012), war and conflict is an important environmental risk factor for mental health. It creates physical insecurity and safety concerns. The effects of conflict (armed conflict in particular) on people residing in protracted conflict areas are multiple. First, conflict creates a *deep rooted sense of insecurity*. This sense of insecurity has a ripple effect. For example, individuals will internalize it and become increasingly wary of the people that constitute their community and the environment in which they live. Second, there is a rupture in the social fabric of their lives associated with and this result in decline in availability and access to social capital. Third, it will also affect their livelihood. Conflict severely affects the mental health of the entire population. Lastly, the multiple burdens that people face as survivors, mediators, witnesses, armed personnel, affected community members as well as negotiators and peace builders imply that there are severe consequences on their mental health. In a conflict that is ongoing, roles of people keep changing and people are expected to direct new energies on these changing roles. There is a manifestation of several types of mental health burden such as PTSD, depression etc. due to the disturbance in the lives of people. However, there is a more significant non-pathological mental health burden as a response to ongoing stress which is significant (Diamond, Lipsitz and Hoffman, 2013). This ongoing traumatic Stress response often gets left out of the discourse on mental health burden of any population.

The consequences of protracted and continuous traumatic stress vary and women, children and other vulnerable groups are affected differently. Women and children are the most vulnerable group in conflict areas (UNICEF, 2009). The National Commission for Women quotes Dr. P Ngully, a psychiatrist in Nagaland the effects of conflict on mental health are deep and long-lasting because of the meanings attached to the state and their people. To quote him in the report,

> "People would complain of pain and discomfort that could not be diagnosed despite extensive investigations. These persons are filled with anxiety, worry, and unhappiness. There is no joy or verve in their life. They look at the future with a sense of doom. For the Nagas their village was like a nation by itself. When it was reduced to ashes and they were herded into concentration camps, their sense of belonging and security was shaken." (National Commission for Women, 2005, p. 24).

The adolescents are also at extreme risk during a conflict. They are targets for recruitment into the various parties to the conflict and are also victims of sexual abuse (UNICEF, 2013). In a study done in Assam and Manipur, it was observed that children are forced to join armed groups due to different circumstances such as economic condition of the family, breakdown of law and order, fast changing social order, destitution, hopelessness, false notion of power and position, etc (Narzary, n.d.).

Recently men too have become the focus of such attention. Men are no longer seen only as perpetrators of violence but instead have been increasingly seen as victims and witnesses to violence. Roles that have been gained following conflict very often show no trend for reversal and men and masculinity both shape and are shaped by conflict. This shift has severe mental health burdens, no doubt, on men. Victims in one section of a community are often seen

as perpetrators in another section of the community (Sarathy and Kesharvani, 2015).

Mental Health Burden in Manipur

According to the DGHS Survey of MoHFW (2002), Manipur has 23,886 estimated cases of major illness and 119,430 estimated cases of minor illness, which is 6.61% of its total population as per the census of 2001. A study done by Kesharvani and Sarathy (2015) in two districts (Thoubal and Chandel) of Manipur on 666 respondents reveals that exposure and experience of conflict significantly affects the mental health of the respondents. Self reported multi-item measures of affective (feelings, 11 items, Cronbach Alpha-.89), behavioral (behavior, 6 items, Cronbach Alpha-.87), cognitive (thought process, 4 items, Cronbach Alpha-.75), and physiological domains (7 items, Cronbach Alpha-.87) were used to assess the symptoms. The survey suggests high mental health burden. Over a quarter of the respondents (29.6%) reported minimum two or more symptoms across all four domains. A sizeable number (i.e. 41.8%) reported three or more symptoms under the affective domain. Similarly for behavioral domain, 36.05% of the respondents reported three or more symptoms. 40.2 % of the respondents reported two or more than two symptoms under cognitive domain, while 62.2% of respondents reported minimum two or more symptoms on physiological domain. Respondents, who had exposure of assault or have experience of assault, reported more symptoms across the domains as compared to their counterparts who had not been exposed to or experienced assault. Similarly respondents, who had experience of loss, reported more symptoms across the domains as compared to their counterparts (Kesharvani and Sarathy, 2015). Higher self reporting of the symptoms is also due to the fact that these two districts are in constant turmoil due to intra, inter, as well as state vs. people conflict. Reinforcing this is the statement of a leading psychiatrist, Dr. R.K.Lenin in Manipur.

> "Most of the victims or the family members due to the conflict suffer from mild to moderate level of depression, high level of anxiety and some of them suffer from post-traumatic stress disorder also and some of them go up to the level of suicidal ideas. Substance abuse has also increased with the victims who are male and the younger ones. Amongst the females, somatic syndrome disorders earlier known as somatoform disorders are very common and they keep complaining of headaches" (Dr Lenin, RIMS, Imphal personal interview dated 18th Dec 2015, Source: Sarathy and Kesharvani, 2015).

The data looked at gender dimensions and it is observed that female respondents reported more experience of assaults as well as losses as compared to their male counterparts. A fifth (20.89%) of female respondents had experience of the assaults to self or to their family members. On the other hand 13.09% of female respondents had experience of loss in terms of family members and property. Nearly half of the female respondents reported three or more symptoms under the affective domain. Symptoms reporting of female respondents increased for the physiological domain as nearly 65% of female respondents reported three or more symptoms associated with physiological indicators. Analysis of reported symptoms on multiple domains suggests that females significantly reported more symptoms across the domains as compared to their male counterparts and this draws attention to the need to have a more gender sensitive policy in general and a more woman-centric policy in specific. (Kesharvani and Sarathy, 2015).

Health Services: Challenges for Policy Makers and Service Providers

The effects of conflict on the health services include a range of issues. There is increased difficulty of attracting staff to work in peripheral areas, gaining access to services (e.g. due to curfews and strikes) which has also been seen in Manipur. Sometimes these may include non-availability of essential supplies in health sector, 'reduced sense of 'people's personal security and restrict(ion) in their access to food, medicines and medical supplies, clean water, sanitation, shelter and health services'(WHO, 2003). In addition the long term effects of protracted conflict are known to reflect in emigration of skilled personnel. In the context of Nepal, Devkota (2005) argues that conflict severely affects general health service provisioning, destroys existing health infrastructure, traumatizes human resources and affects logistic supplies. Personnel deputed to work in

such areas of conflict receive threats (to their life) from both the sides: i.e. state and non state actors. Non-state actors often compel them to get services and at the same time security forces questioned them on the suspicion of being a sympathizer.

The increase in mental health burden (due to conflict) on the one hand and the inadequacy of existing health services, on the other hand combine to paint a poor picture in most conflict zones (Amin & Khan, 2009). Provisioning of services in the state of Manipur is poor and the mental health burden due to the protracted conflict is understandably high. According to the DGHS Survey of MoHFW (2002), Manipur state had only 10 beds in government sector, six psychiatrists, two psychiatric social workers and only one clinical psychologist in 2002 and this risen in a manner that is not commensurate with the needs of the state (as mental health burden has only increased in the state in the last 15 years). In such a scenario, where mental health burden is very high and further in a state where presence of mental health professionals and infrastructure is very poor, people tend to resort to self-medication, over the counter medication as well as seek help from *quacks* and traditional healers. According to Dr. Lenin,

> "They go to the available local quacks and other faith healers because of two reasons- one is they have faith in them and another is they don't have any other option. Third is that they are cheaper and more accessible to them. So they fall (sic) for these groups of faith healers and local quacks……. they are in a way deprived of all the knowledge, facilities and the infrastructure……. They (faith healers) do rituals…they drive away evil spirits or do exorcism….Sometimes body massage or giving pressure on different parts of the bodies on a daily basis for a few weeks or months and thereby they keep talking and distracting the mind of the patient…….There is another group of people, they can forecast or they can predict by doing something…. what is wrong with them and posing themselves as having the power of some supernatural or godly power. They predict what will happen and after that they will give some herbal medicines that they have prepared themselves." (Dr Lenin, RIMS, Imphal personal interview dated 18th Dec 2015, Source: Sarathy and Kesharvani, 2015).

Conflict creates major challenges for service providers as it increases health and mental health burden, destroys existing health infrastructure, and disrupts vital health care services (WHO, 2002). At the same time it increases morbidity and mortality including those due to suicide. Further the scenario of conflict limits access to existing health care services due to strikes and curfews; halts creation of new health infrastructure and creation of human resources.

The context of Manipur is different due to protracted and continuous conflict and bare minimal social provisioning by the state. The stress and trauma of people in these affected areas have to be seen from the perspective of a population that is exposed to ongoing and continued trauma, which is different from the post conflict population that typically results in post traumatic stress disorder. The notion of ongoing traumatic stress response developed by Diamond, Lipsitz and Hoffman (2013) based on their observations of people in ongoing conflict in Israel throws new challenges to policy makers as well as service providers.

Further, Health infrastructure in the state of Manipur is not adequate to deal with the mental health burden and it has limited the access of people to services. Provisioning of services as well access to health services is severely affected by conflict. Recently during the inner-line permit (ILP) agitation in the months of August to September, 2015, ambulance services were also targeted, which resulted in the death of the patient on his way to the hospital. Newspaper reports of this period document the many miseries of people trying to access healthcare services during the times of violence and conflict. Thokchom (August 7, 2015) narrates the suspension of routine operations by a premier medical institute in the region and documents how the blockade resulted in stopping road traffic, interrupting essential services and prohibited medical personnel from attending to their work. Agitations and conflict in relation to the economic blockade in Manipur in 2011 had also impacted the health service delivery. The impact of this included shortage of oxygen cylinders, medicines and equipments rendering doctors helpless and

increasing distress as people even reported deaths due to these shortages. (The Morung Express, October 15, 2011).

Intra and inter-group conflict has also generated mistrust among the community, which has severely affected the social fabric of the community. Another major challenge in protracted conflict situations, given the severity of mental health burden, is the possibility of drug dependency to manage the mental health problems by people. This is likely to increase as the conflict is an ongoing one. Thus, perceived threat is more real than anticipatory fear and chances for occurrences of untoward incidents are high. There is enough evidence to suggest that substance abuse increases during conflict. Manipur is no exception to this. Most significantly mental health burden of individuals also affects families at large and despite this recognition, it is imperative in the context of conflict to specifically address the mental health of families as well.

The Way Forward

Kapur (2004) argues that community mental healthcare model inspires due to certain reasons such as prevention from 'social breakdown syndrome' (Gruenberg, 1967), high cost of institutionalized care by trained professionals (Swift, 1972; Haworth, 1969), and experiences of various developing countries that training of para- professionals and non-professionals can yield positive result and these lay professionals can provide equally good quality of mental health care in community settings. The Barawani experiment (Chatterjee, Patel, Chatterjee, and Weiss, 2003) showed the effectiveness of a three-tier community based rehabilitation model (i.e. outpatient programme, community mental health worker and local health groups comprised of family and key local people) for management of chronic mental health disorder in rural setting. The authors showed that 'compliance with treatment' rate was much higher (63%) as compared with another group, who used only the out-patient service (46%). Barawani had a relatively peaceful context due to which the social fabric was relatively intact.

This paper builds on the ideas suggested by Chatterjee et al (2003) and proposes a four-tier system of community based mental health care for specific use in settings that have seen ongoing conflict.

In this model the First tier is the family. Family shares the mental health burden, even when an individual is primarily affected. Capacity building of family members as a primary (informal) care giver is crucial. It is important not only for building empathy among family members but more importantly it will help the family in coping. Dr. Vidya Sagar's experiment in Amritsar medical college has emphatically outlined the need for involvement of the family in the care of persons with mental health problems (Kapur, 2004).

The Second tier is community and neighborhood. In such a context, the importance of community and neighborhood as a supportive environment is required. Secondary (formal) care givers can be drawn from the community and village level committees can also be formed. Such care givers can screen and refer cases for specialist care to mental health professionals, while their capacities can be built to screen for disturbances, offer lay counseling, building resilience and for peace building. Being members of the local community and due to a shared cultural idiom, community care givers can communicate effectively with patients and their families. In a review of a project for Action Aid, Guwahati involving community caregivers in Manipur, Sarathy and Kesharvani (2015) observe that The journeys of caregivers were very indicative of being journeys of hope; journeys of personal growth; and journeys that have moved from people who were conflicted to people who are empowered. Further the project seems to have impacted the caregivers through definitive knowledge building particularly with reference to mental health, as also with reference to skills building that included communication skills, relationship skills, coping skills and documentation skills. A third perceived benefit has been value absorption and favorable attitude changes. For care givers who have received high levels of recognition and appreciation from their own families as well as the community, there has been tremendous satisfaction, raise in self esteem and confidence building and their gratitude to the project for this has recurred in all interactions with them. Role of village committees can provide an enabling environment, which can lead to acceptance for the services as well

as can minimize the stigma associated with mental illness Chatterjee et.al (2003) argue that the village samitis can add a positive atmosphere, which can improve the motivation of all involved in providing services. At this tier, the active involvement of civil society organizations such as NGOs, FBOs, and CBOs will help in reducing the mental health burden faced in the community. Capacity building of these stakeholders to facilitate identification and referral of persons with mental health needs as well as for mental health promotion is required.

The Third tier is at the primary health centre (PHC) for follow up and referral services. This structure is important due to its geographical proximity for the community and since patients visit primary health centre for getting relief for physical health problems such as head ache, lower back ache, loss of appetite, sleep disturbances etc, which may also be related to mental health burden arising out of exposure to conflict. Community care givers would be able to easily visit PHCs. The WHO (2007) report outlines the need to integrate mental health service in to primary health care as it has several advantages such as reducing stigma, improving the access of persons with mental illness to health care services and also because such services are more acceptable, more accessible and more affordable. Under the district mental health programme (DMHP) the capacity building of medical officers has been envisaged to provide referral and follow up services and this tier is therefore very important as it can improve access to services.

The Fourth tier is specialized out- patient and in patient units that are integrated with general health services. Filtering at second tier and third tier will help in reducing the work load at this level as well and also in improving the efficiency of the system. Support at the level of primary health centre as well as at the level of the community will help in better compliance for the treatment.

CONCLUSION

The paper has examined the need to refocus policy initiatives to strengthen service delivery in areas which see ongoing mental health challenges as a result of protracted and ongoing conflict. Mental health burden in such scenarios will affect the population in general and specifically vulnerable populations such as children, Women, Older persons, armed personnel as well. Therefore a four-tier community based mental healthcare services model is proposed to address needs at family (first tier), Community and neighborhood (second tier); PHC (third tier) and at the specialized OPD and IPD units (Fourth Tier) .

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REFERENCES

Amin, S., and Khan, A. W. (2009), Life in conflict: Characteristics of Depression in Kashmir. International Journal of Health Sciences, 3 (2), 213-223.

Butalia, U. (2008), Interrogating Peace: The Naga - Kuki Conflict in Manipur. Germany: Evangelischer Entwicklungsdienste.V. (EED).

Chatterjee, S., Patel, V., Chatterjee A., and Weiss, H. A. (2003), Evaluation of a community-based rehabilitation model for chronic schizophrenia in rural India. British Journal of Psychiatry, 182, 57–62.

Devkota, M. D. (2005), An Assessment on Impact of Conflict on Delivery of Health Services. Nepal: Nepal Health Sector Program, Ministry of Health and Population.

DGHS, MoHFW, GovernmenT of India. (2002), National Survey of Mental Health Resources. New Delhi: Govt of India.

Diamond, G. M., Lipsitz, J. D., And Hoffman, Y. (2013), Nonpathological Response to Ongoing Traumatic Stress. Journal of Peace Psychology, 19 (2), 100–111.

Fernandes, W. (1999), The Conflict in The Northeast: A Historical Perspective. Economic and Political Weekly, 34, 3579-3582.

Government of India (2014), National Mental Health Policy of India. New Delhi: Ministry of Health and Family Welfare, Govt. of India.

Government of India (2016), The Mental Healthcare Bill 2016 (Bill No. LIV-C of 2013 as passed in Rajya Sabha on 8th August 2016). New Delhi: Govt. of India

Gruenberg, E. M. (1967), Can the reorganization of psychiatric services prevent some cases of social breakdown? American Journal of Psychiatry, 132, 1135–1140.

Haworth, A. (1969), Training schemes for psychiatric medical assistants in Zambia. In: Mental Health Services in the Developing World. Commonwealth Foundation.

IANS (2011). Stir-hit Manipur cries for medicines; doctors helpless. The Mourung Express, October 15.

IPCS. (2014), Peace Audit Northeast- The Road to Peace in Manipur IPCS Special Report- 156. Delhi: Institute of Peace and Conflict Studies.

Kapur, R.L (2004.), The Story of Community Mental Health in India. In: Mental Health: An Indian Perspective, 1946–2003, edited by Agarwal, S.P., Goel, D.S., Ichhpujani , R. L., Salhan, R. N. and Shrivastava, S. (New Delhi: Director General of Health Services, Ministry of Health and Family Welfare) pp. 92-100.

Kesharvani, P. and Sarathy, K. (2015), Cross Sectional Study on Status of Mental Health and Psychosocial Well-Being in a Protracted Armed Conflict Zone: With Special Reference to Thoubal and Chandel District. Unpublished Report, ActionAid Regional Centre, Guwahati.

Kesharvani, P. and Sarathy, K. (2015). Project Titled: Humanitarian support to people affected by Conflict in Manipur of India- A Review. Unpublished Report, ActionAid Regional Centre, Guwahati.

Kumar, A., Aphun, K., Singh, K. B., & Thangjam, H. (2011), Situating Conflict and Poverty in Manipur. New Delhi: Chronic Poverty Research Centre, Indian Institute of Public Administration.

Narzary, R. K. (n.d.), Impact of Conflict on Children in Assam and Manipur States of India. Kokrajhar, Assam: The Northeast Research & Social Work Networking (NERSWN).

National Commission for Women. (2005), The Impact of Armed Conflict on Women Case Studies From Nagaland and Tripura. New Delhi: National Commission for Women.

Oinam, B (2003), Patterns of Ethnic Conflict in the North-East: A Study on Manipur. Economic and Political Weekly, 38, 2031-2037.

Ramsbotham, O. (2005), The Analysis of Protracted Social Conflict: A Tribute to Edward Azar. Review of International Studies, 109-126.

Swift, C. R. (1972), Mental health programming in a developing country: Any relevance elsewhere? American Journal of Orthopsychiatry, 42, 517.

Thokchom, K. (2015), Strike hits Manipur hospitals - ILP supporters block roads, stop traffic. The Telegraph, Calcutta Edition, August 7

UNICEF (2013), Impact of armed conflict on children. Date of access: 15/07/2016. www.unicef.org/graca/a51-306_en.pdf

WHO (2003), Potential impact of conflict on health in Iraq Briefing Note. Date of access: 02/04/2016. http://www.who.int/features/2003/iraq/briefings/iraq_briefing_note/en/

WHO (2007), Integrating mental health services into primary health care. Date of Access: 04/02/2016. http://www.who.int/mental_health/policy/services/en/index.html.

WHO (2012), Risks to Mental Health: An Overview of Vulnerabilities and Risk Factors- Background Paper by WHO Secretariat for the Development of A Comprehensive Mental Health Action Plan. Geneva: Department of Mental Health and Substance Abuse.

WHO (2013), Mental Health Action Plan 2013- 2020. Geneva: WHO Document Production Services.

WHO (2014), Mental Health Atlas. Geneva: WHO Document Production Services.

World Bank (2003), Social Development Papers: Conflict Prevention and Reconstruction. Date of Access: 02/04/2016. http://siteresources.worldbank.org/INTCPR/Resources/CatalogDec6.06.pdf.

World Bank (2016), Health expenditure, public (% of GDP). Date of Access: 05/08/2016. http://data.worldbank.org/indicator/SH.XPD.PUBL.ZS.

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INFANT AND YOUNG CHILD FEEDING (IYCF): A GAP ANALYSIS BETWEEN POLICY AND PRACTICE

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Abstract

Infant and Young Child Feeding (IYCF) practices are a set of recommendations to achieve appropriate feeding of children below two years of age in order to achieve optimal nutrition outcomes in the population. This study was conducted to identify gaps between feeding practices in the community (across different geographic settings) and what is advocated in the policy.This was a cross-sectional study conducted in Salem district, Tamil Nadu, India. Data on feeding practices was obtained from mothers having children aged 12-23 months. Purposive sampling was done and 332 respondents participated in the study (110 from rural and tribal areas each and 112 from urban slums). A semi-structured interview schedule was used for data collection. Feeding practices were assessed based on the eight core indicators given by UNICEF in the IYCF policy. Prevalence of exclusive breastfeeding was dismally lower in the mothers from the urban slum areas, whereas, complementary feeding practices were compromised in the mothers from the tribal areas. With respect to most feeding practices, the mothers in the rural areas were closest to following as per what is advocated in the policy.These gaps between practices advocated in the policy to those followed in the communityneed to be addressed soon.

Keywords: IYCF policy, feeding practices, nutrition

INTRODUCTION

The World Health Organization (WHO) defines 'Nutrition' as the intake of food considered in relation to the body's dietary needs. Malnutrition occurs in two forms- Undernutrition (deficiency of essential nutrients in the body) and Overnutrition (excess of nutrients in the body). Infants and young children grow rapidly and require relatively more nutrients (2-3 times) per kg body weight than adults (Gopalan *et al*., 1989). A child's nutritional foundation is established in the first 36 months of life, where the first 1000 days are considered the most critical (Victora *et al.*, 2010, De Onis 2011). In poorer populations, growth faltering among infants usually occurs shortly after the transition to complementary feeding, because most poor households do not have access to the types of food that can meet the nutritional needs of children (Scott *et al*., 2008). NFHS-3 data (2005 - 2006) reports that the prevalence of underweight in India increases during the phase from birth to 20-23 months. Infant and Young Child Feeding (IYCF) practices are a set of recommendations to achieve appropriate feeding of new-born, and children under two years of age in order to achieve optimal nutrition outcomes in populations. IYCF actions are implemented as part of the priority child survival and development programmes of UNICEF and WHO, as well as in the plans of many nations (GOI, 2013). *The Lancet* series on Maternal and Child Undernutrition- 2008, talk of 'Changing Infant and Young Child Feeding (IYCF) behavior' as one of the five major recommended strategies to reduce stunting and child deaths. Early initiation of breastfeeding,

exclusive breastfeeding upto 6 months and timely complementary feeding are very poor in India(Patel *et al.*, 2010). Survey analysis of NFHS-2 data (1998 - 99), NFHS-3 data (2005-06) and DLHS-3 data (2007-08) suggest that though there has been a slow and gradual increase in the practice of early initiation of breast feeding, there has been no improvement in the status of exclusive breast feeding and complementary feeding (GOI, 2013).

While there have been several studies conducted to assess the prevalence of feeding practices of mothers, most of them have concentrated on breastfeeding practices alone. Tamil Nadu is one of India's more progressive states, ranking in top 3 on several economic and social indicators. The Government of Tamil Nadu has introduced several progressive policies and programmes for women and children that have together helped in drastically improving the nutritional status of the children. However, The UNICEF reports that within Tamil Nadu, several regional and social disparities exist, in addition to several caste and gender-related poverty issues posing a great problem for children belonging to some regions, especially those from socially excluded communities such as Scheduled Castes and Scheduled Tribes. A report published by the United Nations identified several issues like poor housing conditions, lack of clean water supply and sanitation facilities, over-crowding, etc. which predisposes slum-dwellers to several health problems and extreme nutrition risks(UN-Habitat, 2006). Many women in urban slums are unable to follow appropriate infant feeding practices because they resume work in order to minimize lost wages Dasra reports).There has been a study on the prevalence of exclusive breastfeeding in a rural area of Salem(Radhakrishnan and Balamuruga, 2012), but there is no evidence on the other feeding practices there. Also, while there have been several studies done on the tribals living in the Nilgiris in Tamil Nadu, there have been very limited studies on the developmental status of the other tribal groups(Sudarsan and Xavier, 1996). Several socio-economic development projects have caused enormous uprooting of the tribal people from their natural habitats to surrounding rural areas or to cities, causing severe disintegration of their particular lifestyle, which in itself contributes to hunger and under-nutrition (Institute of Social Sciences, 2003).Salem is a district where there are urban , rural as well as tribal areas. It would be useful to understand the feeding practices of the mothers across different (urban slum/rural/tribal) settings in Salem district, Tamil Nadu. This study was conducted with an objective to identify gaps that exist (if any) in feeding practices at community level to what is advocated at policy level.

METHODS

Operational definitions

The feeding practices of mothers were analysed based on the eight core indicators given by UNICEF(2012) namely- Early initiation of breastfeeding, Exclusive breastfeeding for 6 months, Continued breastfeeding at 1 year, Introduction of solid, semi-solid or soft foods, Minimum dietary diversity (MDD), Minimum meal frequency (MMF), Minimum acceptable diet (MAD), Consumption of iron-rich or iron-fortified foods. Data for this study was collected from respondents in urban slums, rural areas and tribal areas of Salem district, Tamil Nadu, India. Urban areas in this study are defined as areas that come under the purview of Salem city Municipal corporation, tribal areas as those areas in Salem district that have been identified for the Integrated Tribal Development Project (ITDP) and other villages in Salem district (excluding those that are part of the ITDP) are considered as rural areas.

Study Area

Respondents from the urban slums were collected from several Anganwadi centres of the Integrated Child Development Services (ICDS)programme across Salem city. Respondents from the rural area were chosen from villages in *Panaimarathupatti* block, namely *Dasanaickenpatti,Gajalnaickenpatti*, *Kammalapatti*, *Thumbalpatti*, *Nilavarapatti* and *Kondalampatti*. Respondents belonging to the tribal community were chosen from *Manjakuttai*, *Nagalur*, *Semmanatham*, *Thalaisolai*, *Velur*, *Vellaikadai* and *Vazhavanthi* which are all villages in the *Yercaud*

block of Salem district. Fig 1gives a block map of Salem district.

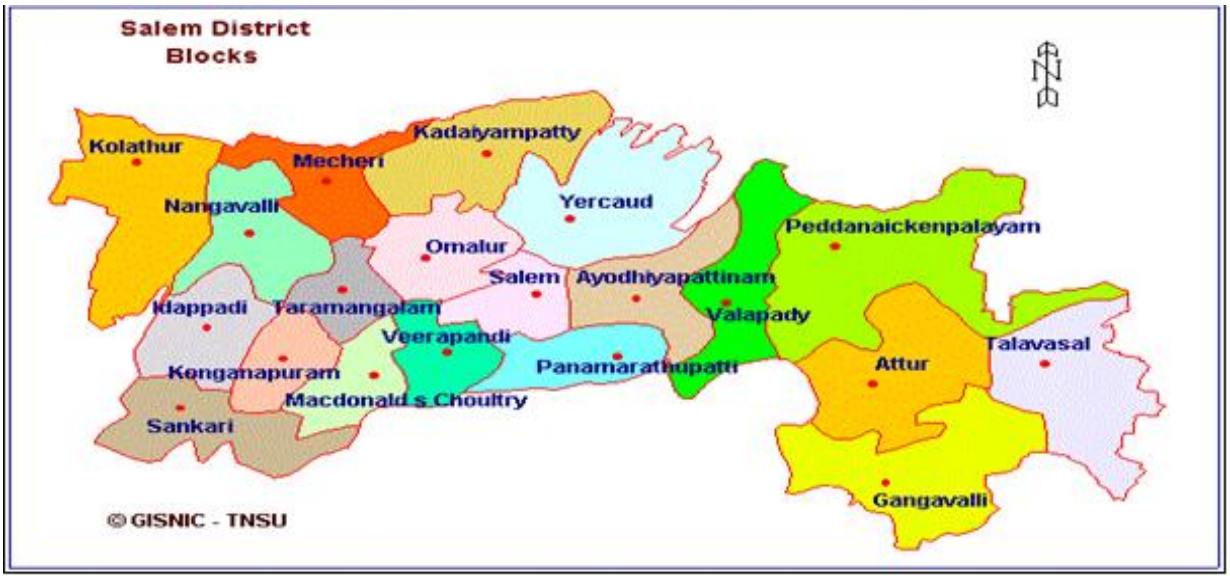

Fig 1: Salem district block map

Research design

Keeping in mind the objectives of the study, a quantitative approach was applied to the methodology. This was an observational cross-sectional study. Data on feeding practices were to be collected from the mothers of children aged 12-23 months of age. This age-group of children twelve months of age onwards was considered because the likelihood of the child having been introduced to all the food groups is more than at six months of age onwards.Purposive sampling method was used throughout the study. A sample size of 330 was arrived at, and an equal number of respondents were chosen from the urban, rural and tribal areas (110 from each respectively). The decided number of respondents from each of these areas were identified with the help of key informants, and mothers were chosen on the basis of inclusion and exclusion criteria. Mothers were chosen for this study if they had a child in the age-group of 12-23 months, and if they were residing in the area where data collection was done (rural/urban/tribal). Respondents who were not residents in the area where data collection was being done and respondents who were unwilling to participate in the study were excluded from the study.

METHODOLOGY

Permission was obtained from the office of the Deputy Director of Health Services, Salem district, and the respective Block Medical Officers (BMOs) of the rural and tribal areas to conduct the study. The process of data collection in this study was then initiated by first identifying the key informants in each of the areas- urban slums, rural and tribal areas respectively. In the urban slum areas, data collection happened at the Anganwadi centres across Salem city. The respondents from the urban slums were identified by the Anganwadi workers (AWWs) there, and the interviews were conducted by the researcher at the Anganwadi centres itself. Data collection in the rural areas happened at the *Panaimarathupatti* Block of Salem district. Contact was first established with the Community Health Nurse (CHN) in charge of the *Panaimarathupatti* block, who helped identify the villages where data collection could be done.

The respondents from each of these villages within this block were then identified with the help of the Sector Health Nurses (SHNs), Village Health Nurses (VHNs), and a few Auxiliary Nurse and Midwives (ANMs). Data collection in the tribal areas happened similarly, by first

establishing contact with an SHN in *Yercaud* block, who helped identify the villages. The respondents in these villages were then identified with the help of the Accredited Social Health Activists (ASHAs) and VHNs there. Once the respondents were identified and chosen by means of the inclusion and exclusion criteria, their consent was taken before proceeding with the interview. A one-on-one interview was conducted with each of the respondents with the help of a semi-structured interview schedule, and data on the socio-demographic profile, medical history of the mothers and feeding practices was obtained. Data collection was done over a duration of three months, from July 2015 to September 2015. All the data was collected after taking an informed consent from all the participants for voluntary participation in this study. The objectives of the study were explained to them and they were encouraged to ask the researcher for any clarifications. They were assured by the researcher that their privacy would be respected and confidentiality would be maintained. Participants were allowed to withdraw from the study at any stage.

Analysis

All the data was recorded in the software Statistical Package for Social Sciences (SPSS) Version 20. To describe about the data, descriptive statistics mainly frequency analysis, percentage analysis, mean an S.D were used.

RESULTS

Sociodemographic profile of the respondents

Data for this study was collected from 332 mothers (110 from rural and tribal areas, and 112 from urban slums). The Table 1 gives the socio-demographic profile of the respondents of the study.

Majority (67.5%) of the women belonged to the age-group of below or equal to 25 years. The mean age of the women who participated in the study was 24.69 ± 3.41 years. Majority of the mothers (51.2%) who participated in the study had completed education up to the primary school level, followed by 24.7 per cent mothers who had secondary school level of education. Fifty one per cent of the women belonged to nuclear families, and a majority (82%) of them had been unemployed in the last twelve months. Almost all of the mothers (99.4%) reported that they had more than three prenatal care visits to a healthcare facility during the course of their pregnancy, and 98.2 per cent of them reported to have had institutional deliveries.

Table 1 Sociodemographic profile of the respondents

		Number	Percentage
Age	≤25 years	224	67.5
	>25 years	108	32.5
Literacy	Illiterate	41	12.3
	Primary	170	51.2
	Secondary	82	24.7
	Graduation and above	39	11.7
Family type	Joint	162	49

	Nuclear	170	51
Employment status	Unemployed	274	82
	Employed	58	18
Prenatal care visits	>3 visits	330	99.4
	< 3 visits	2	0.6
Type of delivery	Institutional	326	98.2
	Home	6	1.8

Feeding practices

Table 2 demonstrates the prevalence of the various feeding practices in the community .

The policy issues guidelines both with respect to breastfeeding and complementary feeding practices. The IYCF policy advocates that breastfeeding needs to be initiated as early as possible, avoiding delay beyond an hour, for all normal newborns (even for those born by Cesarean section). In this study, it was observed that, overall, 68.9 per cent mothers had initiated breastfeeding within an hour of the child's birth. Maximum prevalence of timely initiation of breastfeeding was observed in rural areas (74.5%), whereas only 61.6 per cent of the mothers in urban slums had initiated breastfeeding within an hour of the child's birth. The main reason given for delay in initiation of breastfeeding was Cesarean deliveries. The practice of prelacteal feeding was also fairly prevalent (26.5%), and the most common prelacteal feeds reported to having been given were sugar water and honey. With respect to exclusive breastfeeding, The IYCF guidelines recommend that it needs to be strictly followed from 0-5 months of the child's life, and that no other fluids or food should be given to the child unless medically indicated. In this study, overall prevalence of exclusive breastfeeding from 0-5 months was only 25.3 per cent. The mothers in the rural areas showed maximum prevalence of exclusive breastfeeding (33.6%), least being in the urban slums, 15.2 per cent of the mothers reported following exclusive breastfeeding from 0-5 months. Overall, sixty seven per cent mothers reported to have continued breastfeeding the child even after the child completed one year of age.

Table 2 Feeding practices of mothers

Feeding practices advocated in the IYCF policy	Prevalence of following advocated practices by mothers n (%)			
	Rural areas	Tribal areas	Urban slums	Overall
Timely initiation of breastfeeding within 1 hour of birth	82 (74.5)	77 (70)	69 (61.6)	228 (68.9)
Exclusive breastfeeding from 0-5 months	37 (33.6)	30 (27.3)	17 (15.2)	84 (25.3)
Continued breastfeeding beyond 12 months	60 (54.5)	91 (82.7)	70 (62.5)	221 (67)
Introduction of complementary feeds in the 6th month	38 (34.5)	28 (25.5)	30 (26.8)	96 (28.9)
Minimum Dietary Diversity	103 (93.6)	88 (80)	101 (90.2)	292 (88.2)
Minimum Meal Frequency	18 (16.4)	22 (20)	12 (10.7)	52 (16)
Minimum Acceptable Diet	17 (15.5)	19 (17.3)	11 (9.8)	47 (14.15)
Consumption of iron supplements/iron-fortified food	17 (15.5)	27 (24.5)	13 (11.6)	57 (17.16)

One of the other optimal breastfeeding indicators is continued breastfeeding beyond twelve months of age where it is advocated that even with introduction of optimal complementary feeding, breastfeeding should be continued for at least two years and beyond, depending on the choice of both the mother and child. The IYCF guidelines suggest that even after twelve months of age, the frequency of breastfeeding, including night feeds, should be 4-6 times in twenty four hours. The mothers in the tribal areas showed maximum prevalence of continued breastfeeding beyond twelve months (82.7%).

In order to ensure that a growing infant is able to meet his/her nutritional requirements, the IYCF policy recommends that complementary feeds needs to be introduced to the child at six completed months of age. The guidelines further state that the feeds need to be appropriately thick and of homogenous consistency. In this study, all the 332 children (100%) had been started on complementary feeds, however, only 28.9 per cent of the children had been introduced to complementary feeds at six months of age. Maximum number of children who had been initiated on complementary feeding at six months of age were from rural areas (34.5%), and least in tribal areas (25.5%).

As a measure to improve the quality of complementary feeds, the WHO-UNICEF Global Strategy for Infant and Young Child Feeding (GSIYCF) identified seven food groups based on research that showed the critical importance of each in the complementary feeding diet (UNICEF, 2012). It is recommended that a child aged 6-23 months receives complementary feeds from a minimum of four groups or more. In this study, it was observed that the majority of the children who achieved minimum dietary diversity (MDD) were from rural areas (93.6%), as against in the tribal areas, where only eighty percent of the children achieved it. Overall, 88.2 per cent of the

children have achieved the MDD that is expected of their age.

The policy also issues guidelines with respect to the minimum number of times the child needs to be fed semi-solid/solid food in a day, called the Minimum Meal Frequency (MMF). Itis recommended that children who are continued to be breastfed be given a minimum of 3-4 complementary feeds a day, with 1-2 snacks in between. Children who are not breastfed are expected to be given five complementary feeds a day, with 1-2 snacks in between. In this study, overall, only sixteen percent of the children are being fed at least the minimum number of times required for a child of that age. More children from tribal areas have achieved minimum meal frequency (20%), the least being in children from urban slums (10.7%).

The effectiveness of complementary feeds meeting both the macronutrient and micronutrient requirements of the child depend equally on the quality and the quantity of the complementary feeds. When a child has achieved both the MDD and MMF, it is said that the child has achieved the Minimum Acceptable Diet (MAD) that a child of his/her age is expected to receive. Overall, in this study, it was observed that only 14.15 per cent of the children achieved MAD, maximum being achieved by children in the tribal areas (17.3%), as compared to children from rural areas (15.5%) and urban slums (9.8%). The ICMR Recommended Dietary Allowances of iron for a child who is 12-23 months is 9 mg/day. It is expected that this requirement of iron is met by the diet the child is consuming, or by consumption of suitable iron supplements/ iron-fortified food. In this study, it was observed that the overall prevalence of consumption of iron supplements by children was 17.16 per cent. Consumption was maximum in tribal areas (24.5%), whereas in the urban areas, it was 11.6 per cent. With respect to the iron from the diet, majority (38.9%) of the respondents reported that they fed their children iron-rich foods approximately twice a week.

DISCUSSION

This study was conducted to identify the gaps that exist in the feeding practices followed by mothers in the community to what is advocated in the IYCF policy given by UNICEF. This study brought to light that the feeding practices followed by mothers varied with different geographic settings, and that there are several gaps that exist between what is advocated in the policy to what is followed in the community.

In a study conducted in the urban slums of Chandigarh ,India, it was found that majority (60%) of the respondents initiated breastfeeding only within six hours of birth (Kumar *et al.*, 2006). Swain (1985) found that among the Santal tribe in northern Orissa, immediately after the child's birth, honey or jaggery was given to the child as they believed that these substances could help the child resist hunger. Insufficient milk supply, problems with lactation and importance of solid food for the growing baby were some of the main reasons given for not following exclusive breastfeeding. Even in this study, prelacteal feeding was fairly prevalent for several reasons mainly pertaining to family customs and tradition, problems with establishing lactation and so on. Hector *et al.* (2005) observed that insufficient milk supply was one of the most common reasons given for not continuing to breastfeed. Banapurmath *et al.* (1996), in their study, observed that continued breastfeeding rate of the child at one year of age was 99.7 per cent and 87.2 per cent at two years of age. Even in this study, especially in the tribal areas, continued breastfeeding beyond twelve months of age was common.

A study conducted by Sinhababu *et al.* (2010) in West Bengal showed that 55.8 per cent of mothers initiated complementary feeding during the 6th -8th month. Senarath *et al.* (2012) observed that in Sri Lanka, the proportion of infants aged 6-8 months who consumed eggs (7.5%), fruits and vegetables other than those rich in vitamin A (29.6%) and flesh foods (35.2%) was low, and in the children aged 6-23 months, the MDD was seventy one per cent, which is considerably lower than what was observed in this study. The higher

prevalence of MDD in this study could be because children from twelve months of age onwards were only included in the study, by which time they would developmentally be ready to include foods of a lot more variety and food groups than at six months of age. Both, Patel *et al*. (2012) and Senarath *et al*. (2012) in their analysis found a far greater proportion of children aged 6-23 months having achieved MMF (41.5% and 88% respectively).One possible explanation for this could be that they included children from six months of age onwards where the number of times complementary feeds to be given are lesser than at twelve months of age onwards. In their secondary data analysis of the NFHS-3 data, Patel *et al*. (2012) observed that only 9.2 per cent of the children met the MAD requirement, while in this study it was slightly higher (14.15%).

CONCLUSION

This study brings to light that there are differences in feeding practices across different geographic settings within the same district. While with respect to breastfeeding indicators, mothers from urban slums were least closest to following practices as advocated in the policy, with respect to complementary feeding indicators, especially timely initiation of complementary feeding and achieving dietary diversity, the tribal areas fared low. Overall, the mothers from the rural areas were closest to following feeding practices as per advocated in the policy.

The skills of the healthcare staff need to be upgraded in order to bridge the gap between community and the policy. This could be done by engaging specialized lactation counsellors who can address the lactation issues of the women, and also strengthening the skills of the existing staff which makes them more approachable and resourceful to the women in the community. These gaps that exist between feeding practices advocated in the IYCF policy and what is followed in the community need to be addressed soon in order to improve the nutritional status of the children in the country.

This study has a few limitations. The participants for this study were selected by means of purposive/judgment sampling based on the information given by the key-informants, and so generalizability of the results may be limited. As data collection was done in places like sub-health centres or Anganwadi centres where all these mothers were aggregated together, there may have been misreporting due to perceived lack of privacy or instances where some of the responses given may have been biased by the responses given by others. Further qualitative or exploratory studies can be conducted to obtain deeper insights on feeding practices.

REFERENCES

Banapurmath, C.R., Nagaraj, M.C., Banapurmath, S. and Kesaree, N., 1996. Breastfeeding practices in villages of central Karnataka. Indian pediatrics, 33(6), pp.477-9.

De Onis, M., 2011. Timing of growth faltering: a critical window for healthy growth. Indian pediatrics, 48(11), pp.851-852.

Gopalan, C., Rama Sastri, B.V. and Balasubramanian, S.C., 1989. Recommended dietary allowances for Indians. Nutritive Value of Indian Foods, p.94.

Hector, D. and King, L., 2005. Interventions to encourage and support breastfeeding. New South Wales Public Health Bulletin, 16(4), pp.56-61.

Institute of Social Sciences, 2003. Impact of the Tribal Sub-Plan Implementation in Improving the Socio-Economic Condition of the Tribal People with Special Focus on Reduction of Poverty Level covering the States of Assam and Tamil Nadu. New Delhi.

Kumar, D., Agarwal, N. and Swami, H.M., 2006. Socio-demographic correlates of breast-feeding in urban slums of Chandigarh. Indian journal of medical sciences, 60(11), p.461.

Ministry of Health and Family Welfare. 2013. Guidelines for enhancing optimal Infant and Young Child Feeding Practices. New Delhi: Government of India.

Nourishing our future. Tackling child malnutrition in urban slums. Dasra report.AvailablefromURL:http://www.dasra.org/pdf/NOURISHING_OUR_FUTURE.pdf

Patel, A., Badhoniya, N., Khadse, S., Senarath, U., Agho, K.E., Dibley, M.J. and South Asia Infant Feeding Research Network, 2010. Infant and young

child feeding indicators and determinants of poor feeding practices in India: secondary data analysis of National Family Health Survey 2005–06. Food and nutrition bulletin, 31(2), pp.314-333.

Patel, A., Pusdekar, Y., Badhoniya, N., Borkar, J., Agho, K.E. and Dibley, M.J., 2012. Determinants of inappropriate complementary feeding practices in young children in India: secondary analysis of National Family Health Survey 2005–2006. Maternal & child nutrition, 8(s1), pp.28-44.

Radhakrishnan, S. and Balamuruga, S.S., 2012. Prevalence of exclusive breastfeeding practices among rural women in Tamil Nadu. International Journal of Health & Allied Sciences, 1(2), p.64.

Scott, J., Campbell, D. and Davies, M., 2008. Public Health Nutrition: From principles to practice. Australia: Allen & Unwin.

Senarath, U., Godakandage, S.S., Jayawickrama, H., Siriwardena, I. and Dibley, M.J., 2012. Determinants of inappropriate complementary feeding practices in young children in Sri Lanka: secondary data analysis of demographic and health survey 2006–2007. Maternal & child nutrition, 8(s1), pp.60-77.

Sinhababu, A., Mukhopadhyay, D.K., Panja, T.K., Saren, A.B., Mandal, N.K. and Biswas, A.B., 2010. Infant-and young child-feeding practices in Bankura district, West Bengal, India. Journal of health, population and nutrition, pp.294-299.

Sudarsan, V. and Xavier, R., 1996. Tribal Scenario and developmental Planning in Tamil Nadu'in Mann, RS (ed) 1996 Tribes of India: Ongoing Challenges.

Swain, 1985. Santal tribes: Infant feeding practices. Social Welfare32, no.3,pp.22-23.

UN-Habitat,2006. The Challenge of Slums. Global Report on Human Settlements 2003. London & Sterling, VA: Earthscan Publications Ltd.

UNICEF, 2012. Programming Guide: Infant and Young Child Feeding. UNICEF: New York. Available at:http://www.unicef.org/nutrition/files/Final_IYCF_programming_guide_June_2012.pdf.

Victora, C.G., de Onis, M., Hallal, P.C., Blössner, M. and Shrimpton, R., 2010. Worldwide timing of growth faltering: revisiting implications for interventions. Pediatrics, pp.peds-2009.

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ASSOCIATION BETWEEN FERTILITY DECLINE AND CHILD HEALTH CARE IN INDIA

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Abstract

The regional variation of fertility decline in India has been established in the earlier literature. However, the study on regional variation of fertility, birth spacing, and family size, across the various socioeconomic and demographic groups in the country is very limited. Our knowledge based on the earlier study indicates that no significant study has attempted to assess of linkage between fertility declines with child health care along with socioeconomic countors and geographical region in India. This paper tries to understand the linkage between family sizes, birth spacing with child health care by selected background characteristics at the regional level. In this study the data of third round of the Indian Demographic Health Survey (IDHS) data has been used. Further, full immunization of children age group (12-23 months) and infant death depicts the child health indicators in this paper. Bivariate and Multivariate technique have been applied for result analysis. The result demonstrated that women having family size (0-1) living children among their children age group (12-23 months) only 48.5 percent children were fully immunized as well as infant death was 12.5. However, the same figure for women having more than six children among their children was around 17 percent fully vaccinated, and infant death was 41.The result suggests that the country has faced regional variation and huge differentials in full immunization coverage and infant death across the various socioeconomic groups.

Keywords; fertility decline, family size, child health, India

INTRODUCTION

India's population is the highest in the worlds after China. The country demographic indicators especially birth and death rates are fallen subsequently in last few decades. Early twenty-century crude birth rate of India was around 40-45 per 1000 populations (Davis, 1951). The country was experiencing same crude birth rate (CBR) until 1971 (United Nations, 1982). Bhat M.,(1998) applied rele method on census data and find out that CBR was just above 40, and Total Fertility Rate (TFR) was around six up to 1950s. Fertility fell down in the late 1960s. Some fall in fertility was also evident in the 1970s and at the same time CBR come down below 40 per 1000 and TFR less than 5 (SRS 1970). The TFR come down to 4 at the end of decade 1980s. After 2006, the country has been experienced a drastically decline of CBR that is come down 24 per 1000 and also TFR 2.9 children per women (Population Reference Bureau, 2006).The

recent estimate from Sample Registration System (SRS, 2010) in India shows that TFR declined to 2.5 during 2010. The CBR and TFR in the country were proportionally declining in last few decades, but simultaneously improvements of child heath namely full vaccination and infant mortality rate has been far from satisfactory level.

Child's size at births, vaccination coverage, child morbidity and feeding practices are the integral parts of the India since child health programmes, first and

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second five years plan (1951-56, 1956-61), (NFHS-2005-06). The Child health care is a essentials components of the currently going programme by Government of India especially Mahatma Gandhi National Rural Employment and Guarantee Scheme (MGNREGA, 2005) and Janani Suraksha Yojana (JSY, 2005). Apart from them India's have the highest level of maternal (2010) and child (2009) deaths as well as poor coverage of maternal, newborn, and child health care services (WHO; UNICEF, 2012). The country has one-third of the population below the age of 18, and it is the highest child population in the world. One out of 16 children dies before they attain the age of 1, and one out of 11 die before they are five years old, 35% of the developing world's low-birth-weight babies are born in India, 40% of child malnutrition in the developing countries are in India. This study tries to find out any association between fertility decline indicators, family size and birth spacing with child health (full immunization and infant death) in India. Additionally, the determinants behind are low utilisation of full vaccination and high infant death in the country.

MATERIALS AND METHODS

Data source. This study used the third wave of the Indian Demographic Health Survey Data (IDHS-3), its survey in India known as National Family Health Survey (NFHS). The survey conducted by International Institute for Population Sciences under the guidance of Ministry of Health and Family Welfare (MoHFW), Government of India. It covered 29 states including union territories, 109,041 households, 124,385 women and 74,369 men of age group 15-54 years. The survey adopted multistage sampling design for data collection.

Outcome measurement. This paper tries to find out outcome measurement of child health, first full child immunization and infant mortality. The full child vaccination considers age group (12-23 months) children, who taken three doses DPT, three doses Polio, and received BCG and Measles. Full Child vaccination is one of the most important indicators of maternal health and child health care utilisation according to the guidelines developed by the MoHFW and WHO (MoHFW, 2010; WHO, 2006). Second outcome indicator is infant death, and it defines the probability of children dying before the first birthday.

Predictor variables Socio-economic variables such as family size, preceding birth spacing in months, caste, religions, births order, age at the first births and sex of the child are considered as predictors variables. Additionally, place of the residence, women education, husband educations, an age of the women, mass media exposure, family structure, wealth quintiles and regions of the residence are also representing the covariates. Family size has been categorized into the women have living children, 0-1, 2-3, 4-5 and more than six, similarly preceding birth spacing classified into less than 15 months, 15-17, 18-23, 24-35, 36-59 and above 60 months birth spacing. Social groups are identified based on the women self-reporting their caste as schedule castes (SCs), schedule tribes (STs), other backward class (OBC), and 'others'. The religion of the mother has categorized as Hindu, Muslim, Christians, and 'others'. Births order range from 1 to more than six numbers of children. Age at the first is classified by less than 20, 20-34, 35-49. Male and female represent the sex of the child; similarly, Place of residence is grouped into rural and urban. Women education is categorized by illiterate, primary, middle, secondary and higher secondary education. Similar category exhibited into husband education. Age of the women is grouped into five years interval 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-45. Mass media exposure is computed women had any mass media exposure and no mass media exposure. Family structure grouped into a nuclear and non-nuclear family. Wealth quintiles range from poorest to richest wealth quintiles. Regions of the residence classified based on the IDHS-3 survey. The states such as Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Punjab, Rajasthan, and Uttaranchal are located in the north region. Under the central parts comes states are (Chhattisgarh, Madhya Pradesh and Uttar Pradesh). Similarly in the East's region represent the states are (Bihar, Jharkhand, Orissa and West Bengal). Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and come under the Northeast regions. The states Goa, Gujarat, and Maharashtra are located the western part the country. South regions represent the clubbing of the Andhra Pradesh, Karnataka, Kerala and Tamil Nadu states.

Analytical approach

Logistic regression analysis has been used to examine the impact of selected socioeconomic and demographic factors on child health care indicators namely full immunization and infant death. The binary response variables (y, full child vaccination or not; infant death or not) for each, the individual was related to a set of categorical predictors, X, and a fixed effect by a logit link function which is the following formula.

$$\text{Logit}(\pi i) = \log[\pi i/1-\pi i] = \beta 0+\beta(X)+\varepsilon$$

Where, the probability of an individual who received each indicator of child health is denoted by πi. The parameter β0 estimates the log odds of each child heath indicators for the reference group, and β estimates maximum likelihood. The differentials log odds of each child health care indicators are associated with the predictors X, as compared to reference groups, and ε represents the error term in the model. The results of logistic regression are presented by estimated odd-ratio with 95% Confidence Interval (CI). The whole analysis was performed using STATA version 12.0.

RESULT

I. Family size

Table 1 presents the percentage distribution of the family size with background characteristics across the states of India. Among Schedule Caste (SC) women percent distribution of (0-1) family size was 19.1 percent compare to women had Other Backward Class (OBC) among them 40.3 percent.

Similarly, women had Schedule Tribe (ST) among them (4-5) living children was 12.9 percent than women had OBC among them same family size percent was 43.4. Among Hindu 2-3 children in the family was 82 percent compared to Christian among them 2.1 percent. The Hindu had more family size compare with the rest of the religious group. Urban women had less family size compare to rural women. Illiterate women had more family size compare to educated women. But in the case of the women's husband have illiterate among them (0-1) family size was 19.8 percent compared to same family size was 26.9 percent among higher secondary educated women's husband. Those women had no mass media exposure among them percentage distribution of (0-1) children was 22.9 percent than women had any mass media exposure among them 77.1 percent. Similarly, those women had no mass media exposure among them more than six living children percentage distribution was 58.8 than women had any mass media exposure among them 41.1 percent. Those women belong to nuclear family among them percent distribution of (0-1) family size was 26.7 than women had non-nuclear family among them 73.2 percent. But in the difference between more than six family sizes among the nuclear family was high compared to the non-nuclear. The women had poorest wealth quintile among them percentage distribution of 0-1 family size was 18 percent than women had richest wealth quintile among them same family size and percentage distribution was 22.3 percent. Similarly, women had richest wealth quintile among them more than six living children percentage distribution was 1.7 than women had poorest wealth quintile among them more than six children was 44.9 percent. The number of living children in the family and it percentage distribution observed vary across the state of India. The states namely Uttar Pradesh, Bihar, Maharashtra, West Bengal, Bihar have experience (0-1) family size was 16.2%, 10.8%, 9.2%, 8.5%, 8.3% respectively compare to other states of same family size. Similar differences found in (2-3) living children across the state of India.

Table 1; Percentage distribution of family size with background characteristics across the states of India, 2005-06

Background Characteristics	Family Size (Number of Living Children)			
	0-1	2-3,	4-5,	6+
Caste				
Schedule Caste (SC)	19.19	21.36	23.41	22.98
Schedule Tribe (ST)	8.98	9.16	12.91	10.94
Other Backward Class (OBC)	40.32	41.25	43.42	42.14
Other	31.51	28.23	20.26	23.95
Religion				
Hindu	82.09	79.88	75.6	61.81
Muslim	12.8	15	21.3	34.7
Christians	2.1	2.19	1.24	1.76
Other	2.98	2.92	1.79	1.71
Place of Residence				
Urban	30.55	27.2	18.11	14.18
Rural	69.45	72.8	81.89	85.82
Women Education				
Illiterate	33.69	43.15	75.33	87.86
Primary	13.91	15.88	10.88	7.25
Middle	16.55	16.32	8.2	2.9
Secondary	17.5	14.18	3.97	1.64
Higher Secondary	18.35	10.47	1.61	0.34
Husband Education				
Illiterate	19.8	24.46	43.9	55.93
Primary	13.62	14.98	15.55	17.49
Middle	16.38	17.02	14.74	10.57
Secondary	23.26	22.41	15.86	10.41
Higher Secondary	26.93	21.14	9.95	5.6
Mass Media Exposure				
No Exposure	22.9	27.81	47.92	58.83
Any Exposure	77.1	72.19	52.08	41.17
Family Structure				
Nuclear	26.77	41.57	59.53	67.84
Non-nuclear	73.23	58.43	40.47	32.16
Wealth Quintiles				
Poorest	18.07	21.46	38.23	44.91
Poorer	20.14	21.01	26.63	28.95
Middle	19.64	20.84	18.58	16.02
Richer	19.83	20.75	11.73	8.34
Richest	22.32	15.93	4.83	1.77
State				
Andhra Pradesh	6.55	7.17	1.76	0.65
Assam	3.31	2.37	2.23	2.35
Bihar	9.37	9.02	15.66	19.68

Goa	0.16	0.1	0.04	0
Gujarat	4.46	5.17	3.93	2.88
Haryana	1.69	2.04	1.42	1.71
Himachal Pradesh	0.49	54	0.22	0.11
Jammu and Kashmir	0.7	0.91	0.81	0.62
Karnataka	5.61	5.6	2.62	1.71
Kerala	2.69	2.09	0.55	0.18
Madhya Pradesh	5.83	6.63	8.12	7.85
Maharashtra	9.57	9.04	4.27	2.38
Manipur	0.21	0.22	0.19	0.17
Meghalaya	0.25	0.25	0.44	0.78
Mizoram	0.09	0.09	0.09	0.07
Nagaland	0.09	0.15	0.24	0.36
Orissa	4.33	3.49	3.2	1.24
Punjab	2.44	2.28	1.15	0.48
Rajasthan	5.46	5.58	8.17	8.39
Sikkim	0.06	0.04	0.03	0.03
Tamil Nadu	4.75	4.44	1.37	0.51
West Bengal	9.67	7.68	4.8	4.28
Uttar Pradesh	14.64	17.85	30.2	36.8
New Delhi	1.1	1.01	0.66	0.43
Arunachal Pradesh	0.11	0.1	0.16	0.19
Tripura	0.48	0.27	0.17	0.11
Uttaranchal	0.68	0.81	0.71	0.52
Jharkhand	3.05	2.95	4.42	4.09
Chhattisgarh	2.16	2.1	2.39	1.4
Total	23.57	53	17.14	6.28

II. Full immunization and infant death

Table 2 shows the result of the IDHS three round of the survey carried out percentage differentials in full immunization among children age 12-23 month and infant death by selected background characteristics. The women who have a small family such as (0-1) living children among their children full immunization was 48.5 percent compare to women who had more than six children among their children full immunization was around 17 percent. The women have preceding birth spacing in month less than 15 months among their children full immunization was 35.8 percent than women had preceding birth spacing more than five years among their children full immunization was 42 percent. Schedule Tribe women and their children have less vaccination coverage compare to entire caste. Similar result found in Muslim women. Rural children have less immunized than urban children. Similar result found in illiterate women. The women have no mass media exposure among their children 25 percent full immunized than women had any mass media exposure among their children was 49 percent full immunized. The women belong to nuclear family among their children 38 percent full immunized than women have non-nuclear family among their children had 44 percent immunized. Those women belong to poorest wealth quintile among their children was 23 percent full immunized compare to women have richest wealth quintiles among their children was around 70 percent full immunized. The performance of the full vaccination coverage of the southern regions was higher than entire regions of the country.

In the context of the infant death the women who had (0-1) living children among them infant death was 12.5 per thousand live births compare to women have more than six children among them infant death was 41 per thousand live births. Similarly the women have preceding birth spacing less than 15 months among them infant death was around 13 per 1000 live birth than women have preceding birth spacing more than five years among them infant death was 3.1 per thousand live birth. SC women have experienced more infant death than entire caste of the women. Similar result found in Hindu women. Rural women have higher infant death than urban women. Similar result found in illiterate women. The women have no mass media exposure among infant death was 62 per thousand live births compare to women have any mass media exposure among them infant death was 47 per thousand live births. Little difference found in infant death among nuclear and non-nuclear family women. The women belong to poorest wealth quintiles among them infant death was 70 per thousand live births compare to women had richest wealth quintiles among them infant death was 28 per thousand live births. Southern regions have found low infant death than entire region of the India.

Table 2; Percentage utilization of full immunization among children age group (12-23 months) and infant mortality in the three years preceding the survey by selected background characteristics, India, 2005-06

Background Characteristics	Full Immunization		Infant Mortality/1000 live birth	
Family Size	%	Number	(IM)	Number
0-1	48.58	1578	12.5	1086
2-3,	44.8	127	31	724
4-5,	26.16	396	36	295
6+	16.91	92	41	127
Preceding birth spacing in months				
<15	35.84	137	12.7	280
15-17	40.19	131	7.0	116
18-23	35.11	381	7.5	396
24-35	34.34	736	5.0	534
36-59	38.35	767	2.9	261
60+	42.48	326	3.1	98
Caste				
Scheduled Caste (SC)	38.19	779	58	517
Schedule Tribe (ST)	29.94	277	56	229
Other Backward Class (OBC)	38.68	1525	50	864
Other	51.91	1405	48	555
Religion				
Hindu	42.43	3320	52	1773
Muslim	34.96	610	50	368
Christians	54.34	120	38	33
Other	54.97	140	51	57
Birth Order				
1	51.7	1644	59	747
2-3,	44.06	1943	40	466
4-5,	28.59	448	41	290
6+	17.64	158	62	730
Age of the first birth				

<20	34.5	2036	57	1476
20-34	51.97	2156	44	756
35-49	27.23	2	18	1
Sex of the Child				
Male	43.31	2322	55	1301
Female	39.86	1872	59	1275
Place of Residence				
Urban	55.36	1440	41	483
Rural	36.93	2754	62	2093
Women Education				
Illiterate	24.88	1216	65	1412
Primary	43.35	600	56	336
Middle	55.28	778	40	241
Secondary	62.54	815	31	163
Higher Secondary	73.04	783	19	81
Husband Education				
Illiterate	25.47	721	64	812
Primary	37.23	521	67	429
Middle	43.14	701	50	341
Secondary	47.11	1037	42	372
Higher Secondary	61.17	1205	33	276
Age of the Women				
15-19,	36.04	342	100	207
20-24,	43.1	1798	63	976
25-29,	44.8	1347	49	767
30-34,	40.74	547	50	394
35-39,	29.97	136	51	161
40-44,	17.17	17	57	52
45-49,	19.06	5	88	20
Mass Media Exposure				
No Exposure	25.02	796	62	865
Any Exposure	49.39	3395	47	1366
Family Structure				
Nuclear	38.12	1522	52	1025
Non-nuclear	44.05	2672	51	1208
Wealth quintiles				
Poorest	23.14	584	70	818
Poorer	31.65	724	69	710
Middle	44.55	878	57	517
Richer	54.26	940	43	346
Richest	69.25	1067	28	185
Regions of residence				
North	44.56	566	47	262
Central	27.1	801	65	816
East	42.73	1090	56	612

North-East	32.01	117	55	90
West	52.51	702	38	208
South	58.25	916	35	244
Total	41.7	4195	57	2576

III. Result of logistic regression analysis of full immunization

Table 3 presents the thirds wave of the IDHS (2005-06) survey using binary logistic model (I, II, III) for full immunization among children age group (12-23 months). The model I, result to find out the women who had more than six children among their children less (OR=.762, CI=1.593 – 2.881) likely full immunized compare to women had small family size (0-1) living children. Similarly, the pattern exhibited in model II for family size determinants while women have preceding birth spacing more than five years among their children more (OR=1.478, CI=1.066 – 2.049) likely fully immunised than women had preceding birth spacing less than 15 months.

Model III, demonstrate that increasing the family size among their children age group (12-23 months) probability of the decreasing full immunization utilisation. But result observed that women who had preceding birth spacing more than five years among their children age group (12-23 months) more (OR=1.472, CI=.953 – 2.274) likely full immunized compare to women had preceding birth spacing less than 15 months. Age of the first birth, caste, religion, place of the residence, women's education, mass media exposure is highly significant determinants of utilisation of full vaccination among children. Women who had richest wealth quintiles among their children age group (12-23 months) four time more (OR=4.855, CI=3.302 – 7.137) likely fully immunized than women had poorest wealth quintiles. Those women have belonged to western and southern regions of the India among their children age group (12 -23 months) more likely fully immunized compared to women had living other parts of the country.

Table 3; Binary Logistic Regression Model showing Odds Ratio and 95% Confidence Interval (CI) for receiving full immunization among children age group (12-23 months) during the last three years preceding the survey, (2005-06), India.

Background Characteristics	**2005-06**					
	Model I		**Model II**		**Model III**	
Family Size	OR	95% (CI)	OR	95% (CI)	OR	95% (CI)
0-1®	1		1		1	
2-3,	2.452***	8.799 - 15.313	1.079ns	.797 – 1.459	.597**	.390 - .912
4-5,	1.823***	4.707 - 8.141	.420***	.300 - .588	.596**	.377 - .941
6+	0.762***	1.593 - 2.881	.194***	.121 - .310	.397***	.221 - .714
Preceding Birth Spacing in months						
>15®			1		1	
15-17			.682*	.456 – 1.021	.621**	.369 – 1.046
18-23			.751*	.547 – 1.031	.689*	.454 – 1.046
24-35			.647***	.481 - .871	.653**	.439 - .971
36-59			.788ns	.585 – 1.061	.880ns	.592 – 1.308
60+			1.478**	1.066 – 2.049	1.472**	.953 – 2.274
Age of the first birth						
>20®					1	
20-34					1.306***	1.091 – 1.562
35-49					.200**	.049 - .817
Caste						
Schedule Caste (SC)®					1	
Schedule Tribe (ST)					.608***	.419 - .882
Other Backward Class (OBC)					1.134ns	.900 – 1.429

Other					1.331**	1.031 – 1.718
Religion						
Hindu®					1	
Muslim					.755**	.593 - .960
Christians					1.349ns	.887 – 2.051
Other					1.530*	.951 – 2.463
Place of Residence						
Urban®					1	
Rural					.447***	.369 - .541
Women Education						
Illiterate®					1	
Primary					1.906***	1.500 – 2.421
Middle					1.924***	1.495 – 2.477
Secondary					2.626***	1.971 – 3.498
Higher Secondary					3.699***	2.550 – 5.366
Mass Media Exposure						
No Exposure®					1	
Any Exposure					1.390***	1.109 – 1.742
Family Structure						
Nuclear®					1	
Non-nuclear					1.008ns	.844 – 1.204
Wealth quintiles						
Poorest®					1	
Poorer					1.504***	1.134 – 1.996
Middle					1.774	1.321 – 2.383
Richer					2.470***	1.801 – 3.387
Richest					4.855***	3.302 – 7.137
Regions of residence						
North®					1	
Central					.729**	.552 - .961
East					1.050ns	.784 – 1.407
North-East					.580***	.399 - .842
West					2.334***	1.712 – 3.183
South					5.025***	3.754 – 6.725

Note: ®: Reference Category. Level of Significance: * p<0.10; **p<0.05; ***P<0.01; ns: not significant

IV. Result of logistic regression analysis of infant death

Table 4 result demonstrates from IHDS-3 (2005-06) survey, the significant determinants of the infant death through using binary logistic model (I, II, III). The model I address the family size is the highly significant determinates of the infant death in India. Women who have (2-3) living children among them three times [Exp (B) = 3.354, CI=2.777-4.052) more likely infant death than women have (0-1) family size. While women had above six children among them infant death, less [Exp (B) = 0877, CI=.709-1.085] likely compare to women have 0-1 living children. Similarly, result found in the model II, the women having (2-3) children are the highly significant covariate of the infant death. Similarly preceding birth spacing is the highly significant determinates of the infant death in India, women who have preceding birth spacing (18-23) months among them two times more [Exp (B) = 2.082, CI=1.551-2.795] likely infant mortality than women had preceding birth spacing less than 15 months.

Model III, the result shows the binary logistic regression after controlling more determinates such as (caste, religion, place of residence, women education, mass media exposure, family structure, wealth quintile and region of the residence) instead of model II of variables. Women having the number of living children (4-5) among them more [Exp (B) = 1.459, CI=1.190 -1788] likely infant death than women had small (0-1) family. Those women belong to Schedule Tribe (ST), among them the probability of less likely

infant death than SC women. The women who had middle educated among them the probability of infant death around two times more [Exp (B) = 1.952, CI =1.328 – 2.867) likely infant death than women had illiterate. Similarly, wealth quintile and regions of the residence are the highly significant determinates of the IMR in India.

Table 4; Binary Logistic Regression Model showing Coefficient (β) and 95% Confidence Interval (CI) for Infant death from three years preceding the survey, by background characteristics, (2005-06), India.

Background Characteristics	2005-06					
	Model I		Model II		Model III	
Family Size	Exp (B)	95% (CI)	Exp (B)	95% (CI)	Exp (B)	95% (CI)
0-1®	1		1		1	
2-3,	3.354***	2.777 - 4.052	12.012***	9.585 – 15.052	16.170***	12.741 – 20.521
4-5,	0.747***	0.616 - .906	1.012ns	.834 – 1.228	1.459***	1.190 – 1.788
6+	0.877***	0.709 - 1.085	.912ns	.737 – 1.129	.985ns	.793 – 1.223
Preceding Birth Spacing in months						
>15®			1		1	
15-17			3.374***	2.609 – 4.364	3.255	2.490 – 4.255
18-23			2.082***	1.551 – 2.795	2.130	1.568 – 2.892
24-35			2.178***	1.715 – 2.765	2.112	1.646 – 2.709
36-59			1.652***	1.314 – 2.077	1.600	1.260 – 2.032
60+			1.015***	.795 – 1.297	.957	.741 – 1.235
Caste						
Schedule Caste (SC)®					1	
Schedule Tribe (ST)					.922ns	.771 – 1.102
Other Backward Class (OBC)					.806*	.643 – 1.010
Other					.882ns	.755 – 1.030
Religion						
Hindu®					1	
Muslim					.860ns	.592 – 1.251
Christians					.729ns	.485 – 1.095
Other					1.140ns	.628 – 2.069
Place of Residence						
Urban®					1	
Rural					1.084ns	.920 – 1.276

Women Education						
Illiterate®					1	
Primary					2.201***	1.514 – 3.199
Middle					1.952***	1.328 – 2.867
Secondary					1.220ns	.824 – 1.807
Higher Secondary					.885ns	.581 – 1.349
Mass Media Exposure						
No Exposure®					1	
Any Exposure					.990ns	.872 – 1.124
Family Structure						
Nuclear®					1	
Non-nuclear					1.203***	1.070 – 1.353
Wealth quintiles						
Poorest®					1	
Poorer					1.630***	1.172 – 2.268
Middle					1.554***	1.128 – 2.142
Richer					1.518***	1.111 – 2.072
Richest					1.580***	1.172 – 2.129
Regions of residence						
North®					1	
Central					1.878***	1.459 – 2.418
East					2.144***	1.728 – 2.660
North-East					1.687***	1.344 – 2.119
West					1.863***	1.265 – 2.745
South					1.462***	1.118 – 1.913

Note: ®: Reference Category. Level of Significance: * p<0.10; **p<0.05; ***P<0.01; ns: not significant

DISCUSSIONS AND CONCLUSION

This study confirmed that highly significant relationship found between fertility decline and child health care. After controlling the selected socio-economic variables in the table 3 and 4, model III, the result shows that negative relationship observed between increasing numbers of living children in the family with child immunization, similar result exhibited in infant death. The predictors variables such as family size, preceding birth spacing in months, age at the first birth, caste, religions, place of residence, women education, mass media exposure, wealth quintiles and regions of the residence are found the significant association with the full child vaccination. Similar covariates as the child immunization except some determinants namely preceding birth spacing in months, religion, place of residence, mass media exposure are associated with infant death in India.

Similar finding consistent with other studies such as Wary and Aguirre (1969) find out that in the family have four or fewer children among them 37.8 percent children malnourished than the family with five or more children among them 44.1 percent children malnourished. Similarly, Maccorqodale,D. W., and Nova, H.R. (1977), suggested that significant statistical relationship found between family size with child health. Existing public health kinds of literature documenting that birth order effect on child health and mortality (C. E. Taylor et al., 1983). Recently study explored both birth order and birth spacing between children affect the health of the sibling, M. R. Rosenzweig., (1986). Similarly, H.Susan (1988) suggested that the effects of birth order on long-run nutritional status for children are considerably greater than those observed in current nutritional status.

Our finding also addressed the caste and religions are the significant association with child health care, similar result show in the earlier study. It is evident in several studies that caste system is a strong association with child health inequality in India. Pradhan J and Arokiassamy P (2010), find out that SC/ST play the 3.4 percent disparity in under2 mortality. Similar result exhibited by Arokiassamy et al. (2012) based on decomposition analysis in urban India for not fully immunized that SC/ST contribute to the 5.33 percent followed by Muslim 4.53 percent and no mass media exposure around 8.6 percent. Our result further suggested the urban children have better child immunization that rural. The similar result demonstrated that the urban children have better health care and less likely to be malnutrition than rural children (Von Braun et al. 1993; Ruel et al. 1998; Menon et al. 2000; Ruel 2000; Sahn and Stifel 2003; Smith et al. 2005; Kumar, et al. 2014).

The further result demonstrates that the women who had higher secondary education among their children age group (12-23 months) around four times more likely full immunization than women had illiterate. Empirical studies suggested that maternal education is more important than parental education for child health care (Martin et al. 1983; Young et al. 1983; Frost et al. 2005). The similar result suggested by Ernst J. Schaefer and James R. Hughes (1976) that maternal education is the best single parameter regard to the level of the birth control, prenatal care and child care in the first year of the life. An economic status of the women highly significantly associated with full child immunization and infant mortality rate in the country. The similar finding addressed the Pradhan J; and Lauridsen (2011) through decomposition analysis that poor economic status contributes highest 38.3 percent inequality in full immunization and 46 percent in under2 mortality. Joe W; Mishra U.S; Navaneetham K (2008), suggested that poorest section of the population more deprived for child health due to anxieties about child nutrition. And these differentials observed across the states of India. On the basis of above result, finding suggested that the selected socioeconomic and regional variables are associated with the child health care in India.

Conflicts of the interest

There is no conflict of the interest in this study.

REFERENCES

Arokiasamy, P., Jain, K., Goli, S. and Pradhan, J., 2013. Health inequalities among urban children in India: A comparative assessment of empowered action group (EAG) and south Indian states. *Journal of biosocial science*,*45*(02), pp.167-185.

Bhat, Mari. *Micro and macro effects of child mortality on fertility: the case of India*. National Academy Press: Washington, DC, 1998.

Davis, K., 1956. The amazing decline of mortality in underdeveloped areas.*The American Economic Review*, *46*(2), pp.305-318.

Frost, M.B., Forste, R. and Haas, D.W., 2005. Maternal education and child nutritional status in Bolivia: finding the links. *Social science & medicine*,*60*(2), pp.395-407.

Horton, S., 1988. Birth order and child nutritional status: Evidence from the Philippines. *Economic Development and Cultural Change*, *36*(2), pp.341-354.

Janani Suraksha Yojana, 2005. Government of India.

Joe, W., Mishra, U.S. and Navaneetham, K., 2008. Health inequality in India: evidence from NFHS 3. *Economic and Political Weekly*, pp.41-47.

Lalou, R. and LeGrand, T.K., 1997. Child mortality in the urban and rural Sahel. *Population an English Selection*, pp.147-168.

MacCORQUODALE, D.W. and de Nova, H.R., 1977. Family size and malnutrition in Santo Domingo. *Public Health Reports*, *92*(5), p.453.

Mahatma Gandhi National Rural Employment Guarantee Act, 2005. Government of India.

Martin, L.G., Trussell, J., Salvail, F.R. and Shah, N.M., 1983. Co-variates of child mortality in the Philippines, Indonesia, and Pakistan: an analysis based on hazard models. *Population Studies*, *37*(3), pp.417-432.

Menon, P., Ruel, M.T. and Morris, S.S., 2000. Socio-economic differentials in child stunting are consistently larger in urban than in rural areas. *Food and Nutrition Bulletin*, *21*(3), pp.282-289.

National Family Health Survey, 2005-06. International Institute for Population Sciences, Mumbai and Ministry of Health and Family Welfare (MoHFW).

Population Reference Bureau, 2007. *World population highlights: key findings from PRB's 2007 world population data sheet*, Population Reference Bureau, (Vol. 62, No. 3).

Pradhan, J. and Arokiasamy, P., 2010. Socio-economic inequalities in child survival in India: a decomposition analysis. *Health Policy*, *98*(2), pp.114-120.

Rosenzweig, M.R., 1986. Birth spacing and sibling inequality: Asymmetric information within the family. *International Economic Review*, pp.55-76.

Ruel, M.T., 2000. Urbanization in Latin America: constraints and opportunities for child feeding and care. *Food and Nutrition Bulletin*, *21*(1), pp.12-24.

Sahn, D.E. and Stifel, D.C., 2003. Urban–rural inequality in living standards in Africa. *Journal of African Economies*, *12*(4), pp.564-597.

Sample registration system, 2010. Government of India.

Schaefer, E.J. and Hughes, J.R., 1976. Socioeconomic factors and maternal and child health care. *Medical care*, pp.535-543.

Smith, L.C., Ruel, M.T. and Ndiaye, A., 2005. Why is child malnutrition lower in urban than in rural areas? Evidence from 36 developing countries. *World Development*, *33*(8), pp.1285-1305.

Taylor, C.E., Sarma, R.S., Parker, R.L. and Reinke, W.A., 1983. *Child and maternal health services in rural India: the Narangwal experiment*. Baltimore: Johns Hopkins University Press.

UNICEF Report, 2012. "The State of the World's Children".

UNFPA, 2002. State of world population. People, poverty and possibilities, *United Nations Population Fund*.

Von Braun, J., 1993. *Urban food insecurity and malnutrition in developing countries: Trends, policies, and research implications*. Intl Food Policy Res Inst.

Wray, J.D. and Aguirre, A., 1969. Protein-calorie malnutrition in Candelaria, Colombia. I. Prevalence: social and demographic causal factors. *Journal of Tropical Pediatrics*, *15*(3), pp.76-98.

Young, F.W., Edmonston, B. and Andes, N., 1983. Community-level determinants of infant and child mortality in Peru. *Social Indicators Research*, *12*(1), pp.65-81.

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MENTAL HEALTH ISSUES OF WOMEN IN PAKISTAN

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Abstract

Gender norms determine the status of Pakistani women that influence their life including health. In Pakistan, the relationship between gender norms and health of women is crucial yet complex. The most shamefully neglected health field in Pakistan, mental illness afflicts 30 per cent of the population; with a large majority of those affected being women. According to the WHO, only 400 psychiatrists and 5 psychiatric hospitals exist within the entire country for a population exceeding 180 million. This roughly translates to an alarming psychiatrist-to-person ratio of 1 to half a million people. Pakistani women face an even greater risk as frequent targets of domestic violence, toxic in-laws, and are constant victims of gender-inequality. With such a volatile environment; I can only foresee that mental disease will be a growing problem. There is a strong link between women's autonomy, rights, and health. This demands a gender sensitive and a, right-based approach towards health. In addition to service delivery interventions, strategies are required to counter factors influencing health status and restricting access to and utilization of services. Improvement in women's health is bound to have positive influences on their children and wider family's health, education and livelihood; and in turn on a society's health and economy. Gender is a social construct that impacts both sexes in a variety of aspects especially developing the attitudes and behavior of a human being. Women are however more vulnerable because of their subordinate status in most of the south Asian societies, women face discrimination because of some deeply rooted gender norms. Pakistan is one of the developing south Asian countries with wide gender inequities. Extensive gender gaps exist in education, nutrition, health care and employment.Survey reports and literature mainly provide information about married women that focuses primarily on reproductive health, particularly knowledge and practices related to family planning. There is a dearth of information available on the mental and psychological problems of women. Unfortunately, many people would not even be willing to socialize with someone who suffers from psychiatric illness in Pakistan. For all of us to fully comprehend stigma and its makeup, it is imperative for us to explore its key terms. The current paper therefore aims to: determine the reasons for reiteration of gender roles; describe the societal processes and mechanisms that reproduce and reinforce them; and identify their repercussions on women's personality, lives and health especially **mental health issues.**

Keywords: Mental Health Stigma, Gender inequality violence, Terrorism

INTRODUCTION

Pakistan

Pakistan, officially the Islamic Republic of Pakistan, is a country in South Asia. It is the sixth-most populous country with a population exceeding 201 million people.

Pakistan is unique among Muslim countries as it is the only country that have been created in the name of Islam. As a result of the Pakistan Movement led by Muhammad Ali Jinnah and the subcontinent's struggle for independence, Pakistan was created in 1947 as an independent nation for Muslims from the

regions in the east and west of the Subcontinent where there was a Muslim majority.

Status & General Health Conditions of Women in Pakistan

In sub continenet, several cultural factors, derived mainly from the subordinate position of women, have been shown to affect the prevalence, clinical picture, health seeking behaviour, course and management of psychopathology in women.

Even when Muslims have positive attitudes toward mental healing, social stigma remains strong. Because of concerns with family social standing, many researchers report that disclosure of mental illness is considered "shameful" . Seventy-five percent of the families surveyed by me and colleagues (2014) reported, experiencing stigma due to a relative with mental illness. Similarly, Muslim women may avoid sharing personal distress and seeking help from counselors due to fear of negative consequences with respect to marital prospects or their current marriages. In a study with 67% women who reported experiencing domestic abuse, WHO (2013) found about 70% reported shame and 62% felt embarrassment seeking formal mental health services.

52% Of Pakistan's population comprised of women. Seventy-five percent of Pakistan's female population is, however, rural, and the average Pakistani woman is beset with the "crippling handicaps of illiteracy, constant motherhood and poor health." And, despite the relative privilege of some, all Pakistani women remain structurally disadvantaged and second-class citizens as a result of legal and societal discrimination premised on social and cultural norms and attitudes.

The literacy rate of the population is ~58 %. Male literacy is ~70.2% while female literacy rate is 46.3%

The status of women in Pakistan is one of systemic gender subordination even though it varies considerably across classes, regions, and the rural/urban divide due to uneven socioeconomic development and the impact of tribal, feudal, and capitalist social formations on women's lives.

Girl child is not enjoying all rights in Pakistan. From the time of conception till her adolescence she remains under threat. It is not that uncommon to find families seeking termination of pregnancy based on ultrasonic confirmation of gender in early pregnancy. Back street termination of pregnancy of female fetus is a major cause of morbidity. The girl child infant mortality rate is higher than male child infant mortality.

The girl child has no equal opportunity in the society. They have limited opportunities for primary and secondary education. They have less access to playgrounds, social functions and other community activities as compared to their male partner.

We were informed by Edhi Centre (social welfare foundation) that the newborn they receive in their center, the ninety percent of them are always female. According to a report in 2015, 8,733 incidences were reported in which women were tortured and humiliated. Exact figure is not known.

The health of the women was never considered as an important issue because woman as a gender has little respect in the community. In the name of culture, tradition and religion they were never given equal status in the society. A system which is based on gender inequality will not adopt policies for the well being of women who are poor, powerless, pregnant (most of the time without their consent) and weak as a class. It is also disturbing to note that religious political parties and traditional political parties with lethal image has little time for women and their issues. Our assemblies and political institutes have a great number of women but most of them are not interested on those issues related to women health and their rights.

In Pakistan, we are losing three women per hour because of pregnancy associated complications. More than 30,000 young women die every year in Pakistan which gives a maternal mortality rate of 340/100,000 pregnancies. A recent study has suggested that there is a small drop in maternal death rate.

375,000 women suffer every year from pregnancy related complications.

VesicovaginalFistula (VVF), Recto-vaginal Fistula (RVF), Depression, Chronic Pelvic Pain, Loss of Uterus, Infertility and Pelvic Inflammatory Diseases are the major complications faced by our women, which make their lives miserable. All these

conditions are preventable and no women should suffer because of these conditions. More than eighty percent women are delivered at home in the presence of unskilled birth attendants. In majority of secondary and tertiary healthcare centers, emergency obstetrical care is not available on twenty-four hour basis. Haemorrhage, hypertension and infection are the three major and direct causes of maternal death in our country. Four delays of pregnancy are the major contributory factor to cause women's death and pregnancy related morbidity . According to a study carried out in 2009 by Human Rights Watch, it is estimated that between 70 and 90 percent of women in Pakistan have suffered some form of abuse. An estimated 5000 women are killed per year from domestic violence, with thousands of others maimed or disabled.

At the family level, birth of a baby boy is rejoiced and celebrated, while a baby girl is mourned and is a source of guilt and

despair in many families. Boys are given priority over girls for better food, care and education. Subservient behaviour is promoted in females. Early marriage (child-brides), WattaSatta (exchange marriages), dowry and Walwar (bride price) are common. Divorcees and widows are isolated and considered 'bad omens', being victims of both male and female rejection especially in villages. Marriage quite often leads to wife-battering, conflict with spouse, conflict with in-laws, dowry deaths, stove burns, suicide/homicide and acid burns to disfigure a woman in revenge. About 70% of abused women have never told anyone about the abuse.

MENTAL HEALTH OF WOMEN

Mental illnesses are rising alarmingly worldwide. The WHO's report on global disease burden depicts leading causes of disability worldwide among which the identified conditions are: depression, alcohol use, bipolar affective disorder, schizophrenia and obsessive-compulsive disorder1.

Women are definitely at a greater risk of developing mental disorders such as depressive, somatoform, anxious or eating disorders, as well as suicidal behaviors. Furthermore, mentally ill women are more stigmatized, have less access to care and suffer from a worse social outcome.

Although mental health care has improved significantly over the last decades, many people still choose

not to seek treatment or quit prematurely. A number of possible factors contribute to these disparities with stigma being perhaps the most significant. Stigma hurts individuals with mental illness and their communities, creating injustices and sometimes devastating consequences. In this paper, we discuss mental illness stigma and its related constructs, describe the current state of understanding mental illness stigma in Pakistan and summarize critical considerations to address stigma in this community.

Mental Illness as a Stigma

Stigma is defined as "the situation of the individual who is disqualified from full social acceptance" (Goffman, 1963, p. 9). In this paper, we distinguish label avoidance from public stigma. Label avoidance refers to instances in which individuals choose to not seek help for mental health problems in order to avoid negative labels (Corrigan, Roe, & Tsang, 2011). In order to avoid psychiatric labels, individuals may choose to not associate themselves with mental health clinic or professionals -- avoiding diagnosis by avoiding mental health care. Public stigma is the prejudice and discrimination that blocks individuals' access to employment, educational opportunities, health care, and housing.

People dodge mental health care to avoid being labeled negatively. "Paagal" or crazy is often used as a common insult, totally disregarding that an impaired or altered mental state can occur to any individual at any time. Focused mental health awareness and advocacy movements must address the

'log kya kahenge'

phenomenon; where social stress and fear of 'losing face' causes families to compromise the well-being of a family member.

Due to a variety of factors, including its rugged, diverse geography and civil unrest, many communities within Pakistan face severe limitations in their access to medical care. These problems are especially prevalent in rural areas, where travel is often a major limiting factor. Squatter communities,

often made up of ethnic minorities and conflict-displaced populations, also face similar challenges in accessing health care. Pakistani women have high levels of social isolation. In comparison to other women, Pakistani women's networks were more likely to consist of a high number of relatives rather than friends. Pakistani women also had limited social interaction with people who were not Pakistani and those who were not part of their family or community. They exhibited low involvement in community organisations and clubs. Pakistani women's networks showed high levels of lack of social support and high negative aspects of networks compared to the women of western countries.

Only one study (Campbell & McLean 2003) differentiated between women born in Pakistan and those born in England and how this might affect the nature of their social networks. They found that Pakistani-born women's networks contained less interaction with people whose ethnicity was not Pakistani.

In Pakistan, people have to be worried about getting two daily meals and coupled with the absence of energetic and nutritious diets, they cannot even take proper rest at nights. And because of bad security situation, they don't have a sense of safety. So in such circumstances, poor people become vulnerable to

develop psychological disorders." Though everybody had to go through the ups and downs of life; people would express their modes in the forms of various reactions to different situations, such as struggle, setbacks and disappointments. Many people would use the word "depression" to explain a host of feelings, but depression was indeed much more than "just sadness".

Crimes Against Women, A big Factor Of Mental Problems:

There is no question that violence against women is an enormous problem in Pakistan that is exacerbated and perpetuated by the government's inadequate response to the problem. In fact, the state's response to domestic violence in Pakistan is so minimal and cases of intrafamily violence are so rarely addressed in any way by the criminal justice system that it was not possible for us to achieve one of our research goals for this report: that is, to track specific domestic violence criminal suits in order to identify larger patterns in the prosecution of domestic violence.

We found that despite the staggering levels of intrafamily violence against women, it is widely perceived by the law enforcement system and society at large as a private family matter, not subject to government intervention let alone criminal sanction. At present there is virtually no prosecution of crimes of assault and battery when perpetrated by male family members against women; even intrafamily murder and attempted murder rarely are prosecuted. Consequently, much of this report deals almost exclusively with identifiable trends in the state response to non-familial sexual assault.

According to the Human Rights Commission of Pakistan at least eight women are raped every twenty-four hours nationwide. Estimates of the number of women who experience domestic violence range from 70 to 95 percent. The government's own Commission of Inquiry for Women reported that it "has been described as the most pervasive violation of human rights" in Pakistan.

The WHO also has many programs in Pakistan, but none of its current operations in Pakistan addresses violence against women and its health consequences. WHO has been working to incorporate gender into its work more generally. It recently initiated a multi-country research project into domestic violence against women with the purpose of increasing awareness of the issue among the health community and improving its capacity to identify, prevent, and respond to such violence The psychological consequences of abuse are more severe than its physical effects. The experience of abuse erodes women's self-esteem and puts them at a greater risk for a number of mental disorders like depression, post-traumatic stress disorder, suicide, alcohol and drug abuse.

Children who witness marital violence face increased risk for emotional and behavioural problems, including anxiety, depression, poor school performance, low self-esteem, nightmares and disobedience. Boys turn to drugs and girls become severely depressed and sometimes totally refuse to get married. Children under 12 years have learning, emotional and behavioural problems almost 6-7 times more compared to children of non-abusive parents.

Terrorism Has Affected the Mental Health of Pakistanis

In the last decade, the nation of Pakistan has struggled with poverty, faltering power supplies, education inequality, and inflation. However, one of the greatest factors contributing to the nation's instability is terrorism. A study by the Institute for Economics and Peace ranked Pakistan as third on its Global Terrorism Index, a ranking of the degree to which nations have been affected by terrorism. As a result of the War on Terror, an estimated 80,000 Pakistani civilians have been killed between 2004 and 2013.

As terrorism has become a growing concern in Pakistan, the mental health of its people has also suffered. From 2001 to 2011, the country witnessed an almost 100% increase in the incidence of mental illnesses, particularly stress-related disorders and depression. Moreover, much research has found a consistent relationship between exposure to terrorism and poor mental health outcomes.

Another study conducted by WHO (2014) found a significant association between terrorism and psychiatric morbidity, even among participants who had no direct exposure to terrorism-related violence.

Unsettled conditions have meant that women in the disturbed area are unable to participate in social functions like marriages or religious festivals, which foster cohesion in their tribal communities, according to psychiatrists.

Doctors at the Sarhad Hospital for Psychiatric Diseases (SHPD), a government facility in Peshawar, confirm that many women from the terrorism affected area are suffering from depression and anxiety due to the deteriorating law and order situation there.

"Last year, we received a total of 49,000 patients which included 9,432 women from the FATA," NaureenWakeel, a psychiatrist at SHPD, said. "The problems that many of these female patients face require strong family and social support along with medical aid," she said.

Lubna Hassan, president of the Society of Obstetricians and Gynaecologists of Pakistan, estimates that 50 percent of pregnant women in the FATA suffer from stress, depression and trauma.

"Last month, we saw 3,455 pregnant women from different areas of the FATA at the SHPD and found that nearly all require psychological support.

Pregnant women should not be mentally stressed if they are to deliver normal babies, .These women, who are used to staying in proper homes, are now sheltered in tents or makeshift accommodation in school buildings because of the ongoing military operations."

"LIVING UNDER THE THREAT OF A POTENTIAL TERRORIST ATTACK IS

POWERFUL ENOUGH TO INTERFERE WITH THE DAILY FUNCTIONING OF THE POPULATION AS A WHOLE"

Recognizing the psychological implications of terrorism in Pakistan is of utmost importance, as the growing problems of mental health in the country have already cost it a great deal. The Pakistan Association for Mental Health (PAMH) has highlighted the impacts of poor mental health on "national productivity, creativity, entrepreneurship and personal development". Severe mental illness has also been associated with health risk factors such as obesity and addiction, to the extent that the World Health Organization has predicted that depression will soon become the second leading cause of death in Pakistan.

A study showed that twice as many women as men sought psychiatric care and that most of these women were between 20s and mid 40s.

Another 5-year survey (2010-2015) at the Psychiatry Department in Bhatti International Teaching Hospital showed that out of 7000 patients receiving psychotherapy, 65% were women, 72% being married. The consultation stimuli were conflict with spouse and in-laws. Interestingly, 50% of these women had no psychiatric diagnosis and were labeled as 'distressed women'. 28% of women suffered from depression or anxiety, 5-7% had personality or adjustment disorders and 17% had other disorders.

The 'distressed women' were aged between 20 to 45. Most of them had a bachelor's degree and had arranged marriage relationships for 4-25 years with 2-3 kids, and the majority worked outside home (running small business, teaching or unpaid charitable community work or involved in voluntary work). Their symptoms were palpitations, headaches, choking feelings, sinking heart, hearing weakness and numb feet. Patient treated in mental hospital health facilities by Diagnosis are as under:

The distribution of diagnosis varies across facilities. Out patient facilities, neurotic disorder and mood disorder are most prevalent. Within community based facilities the above two are most common and in mental hospitals mood disorder are more frequent.

According to National Institute of mental health, following are common types of mental disorders mostly found in women globally;

1. Mood disorder.
    - – Major depressive disorder.
    - – Dysthymic disorder.
    - – Bi-Polar disorder.
    - – Suicide.
2. Schizophrenia.
3. Anxiety disorder.
    - – Panic disorder.
    - – Obsessive-Compulsive Disorder (OCD).
    - – Post-Traumatic Stress Disorder (PTSD).
    - – Generalized Anxiety Disorder (GAD).
    - – Social Phobia.
        a) Agor Phobia.
        b) Specific Phobia.
4. Eating disorder.
5. Attention deficit Hyperactivity disorder (ADHD).
6. Autism.
7. Personality disorder.
    - – Antisocial personality disorder.
    - – Avoidant personality disorder
    - – Border line personality disorder.

The journal of American Medical Association.20013, 289(3):3095-3105, explain various types of depression, and these are also common in Pakistan.

1. Major depressive disorder.
    - Dysthymic disorder.
        a) Psychotic depression.
        b) Seasonal affective disorder (SAD)

2. Premenstrual dysphonic disorder, common among Pakistani women.
3. Post-partum depression. Mostly found in Pakistan and concern with the birth of baby girl.
4. Menopauses. Commonly found in Pakistan.
5. Stress.
6. Post Traumatic Stress Disorder

As an older adult, women have more depression, organic brain syndromes and dementias. As the sever life events that causes a sense of loss, inferiority, humiliation or entrapment can result into depression. Perinatal depression, due to its high prevalence and associations with disability, poor infant development and family disruption, is a major public health problem in developing countries. In non-literate and poor communities where depression is not recognised and where there are no specialists, developing a culturally acceptable, deliverable psychological intervention that community members find useful, presents special challenges but also opportunities. We describe lessons learned from a multi-method formative study to develop and deliver a psychological intervention to depressed mothers and their infants through non-specialist village based health workers.

Postpartum Depression (PDP) is a serious mental health problem for women from across various cultures. It is characterized by a prolonged period of emotional disturbance, occurring at a time of major life change and increased responsibilities in the care of a newborn infant. PPD can have significant consequences for both the new mother and family. Postpartum Depression is easily curable and lots of options are available for women to cope with this condition, yet it remains underdiagnosed and undertreated, especially in low income countries. Women are unwilling to consult a doctor on such issues and prefer to suffer in silence. Maternal Postpartum depression negatively affects a mother's ability to parent which results in poor responsiveness to infant cues and a more negative, hostile and disengaged parenting behavior. In severe conditions it may also lead to suicide. Family should offer support to women suffering from postpartum depression as they are going to an important change in life and need help to cope with the changes. Therefore, given the high rates of depression in the Pakistani women and the associated potential risks to mother and child, screening for depression needs to be an essential component of prenatal care, particularly in socially disadvantaged women. This paper will try to explore to what extent does stigma relating to mental illnesses deters these women from receiving treatment. In the end recommendations to deal with the situation will also be highlighted.

During my research I have found that women with postpartum depression are more likely to internalize emotions, which typically result in, withdrawal, loneliness and depression.

Towards a new horizon

Mental illnesses in Pakistan are routinely mistaken and misunderstood for someone being possessed by evil powers or spirits, ***for exorcism, or aaseb,*** when for instance, a person countering schizophrenia would simply be hallucinating or even under a delusion. They are not possessed by evil spirits, they are merely mentally ill. All they need is a chance to reclaim their lives, long and fraught with hardships as the journey may be.

The medical community and media should also play their part to change social stigma so that sufferers who need help feel comfortable in seeking help and treatment. It is important to create awareness about mental issues and depict them as an 'acceptable' illness. This would encourage the patients to accept their mental ill health, as they accept any other ailment and that there is no shame in suffering from mental ill-health. The condition is curable and the person suffering from it is in no way dangerous. . It can be said that people may not indulge in obvious forms of discriminatory behavior around the stigmatized person but once the cultural stereotype is in place, it can affect labeled persons in important ways. Therefore, the perceptions relating to those suffering from depression need to be changed on the society's level.

Rehabilitation of people with mental disorders is being researched for more effective results, but it goes without saying that mental illness still struggles to find a clear status where it is considered just another illness of any organ of the body that needs to be treated. Rehabilitation remains an uphill task, since mental illness remains a very misunderstood

area of illness even in this day and age. Unless we remove the stigma associated with mental illnesses, those who are ill shall continue to suffer in silence.

Day care services in mental hospitals and clinics comprise a comprehensive rehabilitation programme that is filled with focused relaxation techniques and fun-filled activities. These activities are dovetailed with vocational training to help the mentally ill salvage their life skills and also equip them of a vocation. Psych-rehabilitation activities have helped patients regain a sense of orientation of themselves in a structured manner. "I have always enjoyed the chat session scheduled in the mornings," says a female client with mental illness at clinic, "as they have been extremely therapeutic for me." She finds it comforting as people narrate their experiences, share a prayer or a dua, or even a joke while a clinical psychologist or a social worker leads the discussions.

Yoga, music, painting, chat sessions, discussions based on the talk therapy on light issues, etc are part of the day care rehabilitation services. These are extremely therapeutic for both inpatients and outpatients. Case management and family psycho-education are other evidence based modules of the comprehensive rehabilitation programme. Social workers, occupational therapists and clinical psychologists follow up on home-based clients and counsel the families that may not be able to cope with the patients' mood swings or mania, as in the case of Bipolar Disorder.

Suggestions to Improve Mental Health Conditions of Women

The authors recommend that mental health providers should play a critical role by addressing the cultural as well as psychological conditions that create and maintain threats to women's mental health.

I understand that there is a large section of Pakistanis I'm not reaching with this commentary; the families of schizophrenics who are abandoned at "Gidoo Bander" (Sir Cowasjee Jehangir Institute of Psychiatry in Hyderabad), the communities who frequently go to mazaars and faith-healers to rid their loved ones of Jinns, the quacks who con money out of these vulnerable people, etc.

However, it would be quite an achievement to force even the educated class of Pakistan to give up their preconceived notions about mental illness. If even one of you reads this and realises that it's not your fault and it's OK to seek help; if one of you encourages instead of discouraging a medical student wanting to help psychiatric patients, we will indeed witness change. An evidence-based approach is needed to understand what should be changed, how this change can be made, and how to best measure it. Stigma experts emphasize the need for interventions to be local, culturally specific, and carefully targeted. As our review underscores, these best practices are all the more important in the context of stigma research in Muslim communities. Polices for the protection of mentally ill patient and improve gender position.

The following legislative and financial provision exists to protect the mental health and mental disorder patients and provide support for uses.

- Provision concerning a legal obligation for employers to hire a certain percentage of employees that are disabled.
- Provision concerning protection and discrimination (dismissal lower wages) solely on account of mental disorder.
- Provision concerning priority in state housing and in subsidized housing schemes for people with severe mental disorder.
- Provision concerning protection from discrimination in allocation of housing for people with severe mental disorder.

Mental health policies, plan and legislation do exist in the country but are not implemented. Since psychiatric illness is more in women than men, so we have to bring change in economic and social polices and address the gender inequality, which may be the cause of increases mental illness in female. In health sector, the government is receiving a huge amount of grant, loan and help from donor agencies (UNICEF, UNFPA, WHO, UNDP, USAID, DIFID, ADBP, CIDA, SIDA and many others) to improve the women health care in Pakistan. Unfortunately, the government has failed in proper utilization of this funding because of lack of political will and non-

understanding of existing healthcare system in the country. It is also noticeable that lack of merit in utilization of these funds is responsible for non-utilization and improper spending of this budget. A long term planning is required to bring durable change.

The country also needs good road network in rural and urban areas. Moreover, good ambulance (Flying) services are required to provide access to women in need living in far-flung areas of country.

- • Complete transparency in appointments of Directors and Consultants in government projects related to women's health.
- • Mass education programmes for girl child on priority basis.
- • Inclusion of EmOC in the curriculum of medical colleges, nursing schools and paramedics training centers.

We have more than seventy five thousand villages all over the country without proper road network. People living in mountains, forest areas and small islands have no access to centre with EmOC available.

Majority of our Basic Health Units (BHUs) and Rural Health Centers (RHCs) are not functional. With the exception of very few facilities, EmOC is not available on a twenty-four hour basis in tertiary care centers. .Psychiatric faculty development in teaching hospitals. Post of consultant psychiatrist in tehsils and districts. Implementation of mental health act. Public awareness programmes addressing mental health issues. Structured training of GPs (in collaboration with) Academy of Family Physicians, Pakistan Psychiatric Society, WPA Section on Education, Pakistan Medical and Dental Council.

A structured postgraduate training program for doctors working in postgraduate institutes to produce obstetricians and gynaecologists who can work in the country We appeal to government and every political party in the country to unite in providing healthcare to the poor women of our country. A country has no future with a huge population of uneducated, unhealthy and battered women. The government and civil society should immediately take actions to rectify the present situation on emergency basis. For women, those factors include cultural mores that force them into a situation that, in society's views, require their confinement in a mental institution such as Edhi.

REFERECES

Kakuma, R., Kleintjes, S., Lund, C., Drew, N., Green, A., & Flisher, A. J. (2010). Mental Health Stigma: What is being done to raise awareness and reduce stigma in South Africa. African Journal of Psychiatry,13(2).

Muhammad (2012, October 9). Mental health most neglected field in Pakistan – thenews.com.pk. Retrieved March 30, 2014, from:

http://www.thenews.com.pk/Todays-News-6-136490-Mental-health-most-neglectedfield-in-Pakistan

Naqvi, H. (2007). Tutorial Article: Page 10. Depression, 4(1). Retrieved March 30, 2014, from:

http://www.jpps.com.pk/display_articles.asp?d=172&p=art Abu-Ras, W. (2003). Barriers to services for Arab immigrant battered women in a Detroit suburb. Social Work Research and Evaluation, 3(4), 49–66. Abu-Ras, W., Gheith, A., &Cournos, F. (2008). The imam's role in mental health promotion: A study at 22 mosques in New York City's Muslim Community. Journal of Muslim Mental Health, 3, 155-176. http://dx.doi.org/10.1080/15564900802487576

Al-Adawi, S., Dorvlo, A. S., Al-Ismaily, S. S., & et al. (2002). Perception of attitude towards mental illness in Oman. The International Journal of Social Psychiatry, 48, 305-317. http://dx.doi.org/10.1177/002076402128783334

Araya, R, Rojas, G, Fritsch, R, Gaete, J, Rojas, M, Simon, G, Peters, TJ 2003Treating depression in primary care in low-income women in Santiago, Chile: a randomised controlled trialLancet3619951000PubMedCrossRef

Austin, M-P, Priest, SR 2005Clinical issues in perinatal mental health: new developments in the detection and treatment of perinatal mood and anxiety disordersActaPsychiatr Scand11297104PubMedCrossRef

Beck, AT, Rush, AJ, Shaw, BR 1979Cognitive therapy for depressionWileyNew York

Bolton, P, Bass, J, Neugebauer, R, Verdeli,

H, Clougherty, KF, Wickramaratne, P, Speelman, L, Ndogoni, L, Weissman, M 2003Group interpersonal psychotherapy for depression in rural UgandaJAMA28931173124PubMedCrossRef

Butler, AC, Chapman, JE, Forman, EM, Beck, AT 2006The empirical status of cognitive-behavioral therapy: a review of meta-analysesClinPsychol Rev261731PubMedCrossRefClaeson, M, Waldman,

RJ 2000The evolution of child health programmes in developing countries: from targeting diseases to targeting people Bull World Health Organ7812341245PubMed

Al-Darmaki, F. R. (2003). Attitudes towards seeking professional psychological help: What really counts for United Arab Emirates University students? Social Behavior and Personality, 31, 497-508. http://dx.doi.org/10.2224/sbp.2003.31.5.497

Ali, O. M., Milstein, G., &Marzuk, P. M. (2005). The imam's role in meeting the counseling needs of Muslim communities in the United States. Psychiatric Services, 56, 2-5. http://dx.doi.org/10.1176/appi.ps.56.2.202

Al-Krenawi, A. (2005). Mental health practice in Arab countries. Current Opinion in Psychiatry, 560-564. http://dx.doi.org/10.1097/01.yco.0000179498.46182.8b

Gadit AAM. Mental Health Model: comparison between a developed and a developing country. Journal of Medicine [serial online] 2007;1(1) [cited 2011 Aug 16]. Available from: http://www.scientificjournals.org/journals2007/articles/1047.htm.

David DB, Malik MH. Stress and psychiatric disorder in Urban Rawalpindi, community survey.The British Journal of Psychiatry. 2000;177:557–62. [PubMed]

Gadit AAM. Disaster, mental health and rescuing medical professionals.Journal Ayub Medical College AbbottAbad. 2005;17(4):1–2. [PubMed]

Khalily TM, Fooley S, Hussain I, Bano M. V

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HEALTH RELATED QUALITY OF LIFE AND PERCEIVED QUALITY OF HEALTH CARE AMONG PEOPLE WITH PHYSICAL DISABILITIES IN BANGLADESH

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Abstract

In Bangladesh, an estimated 9.07% population is living with some form of disabilities; physical disability is most common form. Health-related-quality-of-life (HRQOL) of people with physical disabilities (PWPDs) can be affected by socio-demographic factors, environmental factors, and health-care-related factors etc. Among health-care-related factors, perceived-quality-of-care (QOC) is one determinant of HRQOL. The objective of the study was to assess level of HRQOL, perceived QOC in general illnesses, and to investigate association between socio-demography, perceived QOC and HRQOL among PWPDs. A cross-sectional survey was conducted among 282 PWPDs in Savar, Bangladesh. Data was collected using set of standard tools-EuroQol-5D-5L and SERVQUAL. Most of the respondents (83.7%) were males with median age 35 years, married (63.1%) and Muslims (92%). Age, sex, marital status, occupation, and household expenditure were significantly associated with HRQOL in Chi-square test. HRQOL among PWPDs shows decrement with age. Female sex is associated with high anxiety and poor QOL. High household expenditure does not guarantee high HRQOL. Most of the PWPDs visit formal care providers. HRQOL was better with poor perceived QOC. Tangibility and responsiveness of services are significantly associated with pain and self-care dimensions of HRQOL, respectively. Focus on these dimensions of quality of care can improve HRQOL of PWPDs.

Keywords: Health-related quality of life, Disability, Quality of care, EQ-5D

INTRODUCTION

Globally, disabilities are causing a substantial burden on health care system (Murray *et al*, 2013). International Classification of Functioning, Disability and Health (ICF) and Convention on the Rights of People with Disabilities (CRPD) view disability as a negative outcome (such as difficulties in performing daily activities and involvement in society) of interactions between health conditions and individual's physical, social, and attitudinal environment (World Health Organization [WHO], 2001, Officer and Groce, 2009).

Globally, more than one billion people are living with some form of disabilities, which constitute about 15% of world's population (WHO, 2013). Around 110 to 190 million adults have pronounced difficulties in functioning, worldwide (WHO, 2014). In Bangladesh, estimated 9.07% population is suffering from some form of disability (Bangladesh Bureau of Statistics [BBS], 2011). Estimated prevalence of disability is 8.13% and 10% among males and females, respectively, with 9.63% rural and 7.49% urban prevalence (BBS, 2011).

People with disabilities (PWDs) experience more social restrictions compared to people without physical disabilities, and social exclusion leads to lower level of well-being and poor quality of life

(QOL) (Sawatzky *et al*, 2010, Lucas-Carrasco *et al*, 2011).

The quality of life is a broader concept, concerned with the effect of diseases or impairments on persons' ability to fulfil their normal role (Carr *et al*, 2001). Health-related quality of life (HRQOL) is the multidimensional concept based on self-reporting, to assess different dimensions of health (Centre for Disease Control & Prevention [CDC], 2014). This concept has evolved over the period to measure individual's perception of health and its effect on life (Carr *et al*, 2001). Self-perceived HRQOL is a good predictor of quality of life (Chamberlain *et al*, 2013).

HRQOL can be influenced by several factors such as socio-demographic, environmental and health-care-related factors (Lucas-Carrasco *et al*, 2011,Quintas*et al*, 2012), but most of the previous studies focused on socio-demographic factors (e.g. age, gender, education, etc.) which actually do not cause major variations in HRQOL (Howitt *et al*, 2011). Health-care-related factors, such as providers' knowledge, professional flexibility and courtesy and providing information regarding patient's condition etc., are deemed as reflections of quality and adequacy of care (Harrington *et al*, 2009). Health-care-related factors also shape the perception of PWPDs about the quality of care and affect the HRQOL (Turkson, 2009).

Several studies have been conducted in some developing countries to explore HRQOL of different population subgroups such as people with chronic obstructive pulmonary disease (Negi *et al, 2014*), HIV (Peter *etal*, 2014), ocular myasthenia gravis (Galassi *et al*, 2014), children with epilepsy (Monir *et al*, 2013) and elderly with diabetes (Nezu, 2014).A study conducted by Awasthi *et al* (2012) had investigated HRQOL and QOC in Indian context among the adolescent population. A study by Joshi *et al* (2014) assessed the HRQOL of PWDs. One case-control study conducted by Gudlavalleti *et al* (2014) in South India assessed the HRQOL and QOC among PWDs and people without disabilities.

Similarly, in Bangladesh, several studies have been conducted on HRQOL of different patient subgroups such as leprosy patients (Tsutsumi, 2007), elderly (Nilsson *et al*, 2006), and patient with type 2 diabetes (Saleh *et al*, 2014), but very few particularly, on quality of life of PWDs (Hosain *et al*, 2002). To our best knowledge, there is no study examining the association of QOL with perceived quality of health care among PWPDs, which gave us the opportunity to investigate the area further.

This study was designed to examine HRQOL and perceived QOC among PWPDs and will assist in identifying a specific area of health care, which can be improved in order to improve QoL of PWPDs.

General objective

The objective of present study was to examine the association between the perceived quality of formal health care and health-related quality of life among people with physical disabilities in Bangladesh.

Specific objectives

- To assess current level of health-related quality of life among people with physical disabilities in Bangladesh
- To assess the perceived quality of formal health care services received by people with physical disabilities in Bangladesh
- To examine the association between socio-demographic factors, perceived quality of formal health care and health-related quality of life among people with physical disabilities

Operational definitions

Disability: The study focused only on the physical aspect of disability thus 'disability' word in this study is representing 'physical disability'.

Physical disability: In this study 'physical disability' is defined as difficulty in executing activities and involving in life situations, which is the outcome of interactions between individuals' physical impairment (such as paralysed or deformed body parts), and contextual factors (such as physical environment, policies, attitudes and personal characteristics) (WHO, 2001).

HRQOL: 'HRQOL' is considered as a broad multidimensional concept that includes self-reported measures of physical and mental health (CDC, 2014)

and assessed by EuroQol-5D-5L questionnaire. Five dimensions are mobility, self-care, usual activity, pain/ discomfort and anxiety/depression

General illness: 'General illness' is defined as any morbidity, short term or long term which is not related to disabling conditions (e.g. stroke, cerebral palsy, spinal cord injury etc.) and which can affect people without disability in the same manner (e.g. fever, cough and cold, headache, body ache etc.).

Formal health care: 'Formal health care' in the study is defined as the care sought from the formal care facilities such as private clinic/hospital, NGO clinic/hospital and government clinic/hospital by medically trained professional for the general illness (Ahsan*et al*, 2012).

Perceived quality of health care: 'Perceived quality of health care' was defined as 'quality of care as per the person who has utilised it' (Turkson, 2009). Perceived QOC was based on service quality gap model developed by Parasuraman *et al*(1988); service quality had been divided into 5 dimensions as per this model:

1. Tangibility: Physical presence and availability of staff and equipment;
2. Reliability: Providing the accurate and reliable care;
3. Responsiveness: Willingness to respond to need of patient;
4. Assurance: Instilling the trust and confidence;
5. Empathy: Extent to which staff is willing to deliver individualised services.

METHODOLOGY

A cross-sectional design was adopted to assess the HRQOL and perceived quality of care among PWPD. This design was necessary considering the objective, limited time and resources for data collection. The study was carried out at Savar, a sub-district of Dhaka Division of Bangladesh, situated 24 km north-west of the Dhaka city (Saha, 2012). Savar was chosen due to the presence of not-for-profit organizations working on disability, such as Centre for Rehabilitation of Paralyzed (CRP), and Centre for Disability in Development (CDD), which are serving not only the PWDs residing at Savar but PWDs of Bangladesh.

CRP is a not-for-profit organization having a 100-bedded rehabilitation facility with more than 40,000 outpatients each year (Centre for Rehabilitation of Paralyzed, 2013). CDD is a not-for-profit organization working for social inclusion of PWDs into mainstream society by providing them training, assistive devices, inclusive education, employment opportunities (Centre for Disability in Development, 2011). These organizations had provided an access to the PWPDs population to reach the maximum number of eligible respondents within a limited time.

Study population and period

All people with physical disabilities, 18 years or above and met the inclusion criteria, available at study sites, at the time of conduction of study, were invited to take part in the study. Respondents were interviewed after considering,inclusion and exclusion criteria.

Inclusion criteria: People with physical disabilities living in the community setting with a disability for at least six months, coherent, and showed interest to participate in the study were included.

Exclusion criteria: Pregnant women with disabilities (Da costa *et al*, 2010) and terminally ill PWPDs (Salaffi *et al*,2009) were excluded from the study because of a probability of reporting the poor HRQOL that might skew the data.

Sample size and sampling procedure

Sample size calculation should base on the proportion of problems in the most relevant dimension of the HRQOL (Roset *et al*, 1999). However, there is lack of credible information on the proportion of problem in the mobility dimension of HRQOL among PWPDs in Bangladesh.

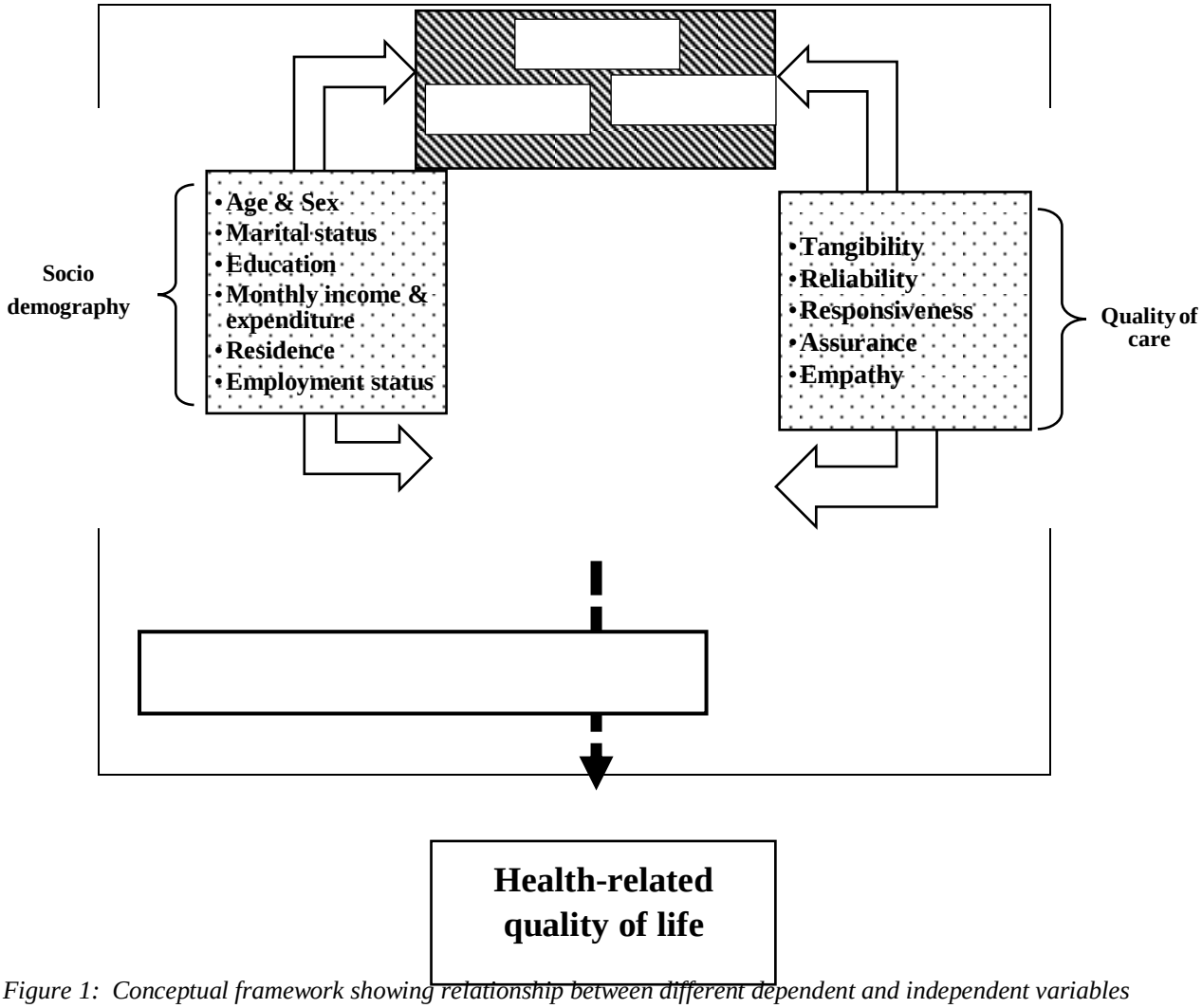

Figure 1: Conceptual framework showing relationship between different dependent and independent variables

Thus, sample size calculation was based on an assumption that 50% of PWPD will have problems in mobility dimension of HRQOL.

Sample size of 385 was calculated using OpenEpi version 3.03, assuming the expected frequency of 50% for the outcome variable with 95% confidence interval and 5% error. Due to time constraint,only sample of 282 (73.24%) of the total estimated sample was achieved.

PWPDs attending the outpatient department or vocational classes, residing within the campus or outside the campus of CRP have been approached, if they had any visible physical impairment.. Similarly at CDD, those who were attending the training sessions have been identified based on their visible physical impairment and recruited for the study based on the criteria.

Survey instrument

Survey instrument was having a section on; 1) socio-demographic information with disability profile; 2) EuroQol-5D-5L; 3) morbidity, treatment history, and perceived quality of care.

1. Socio-demographic information

The age, sex, education, occupation, household size, and expenditure, disability profile related questions were asked in this section.

2. HRQOL-EQ5D questionnaire

EQ-5D is a standardised instrument to measure the health outcome developed by EuroQoL group. EQ-5D-5L questionnaire was chosen to measure the HRQOL due to better sensitivity and no ceiling effect

(Oemar and Janssen, 2013). In this study, Bengali language-Indian version of EQ-5D was used which is widely used in general population (Herdman *et al*,2011).

EQ-5D questionnaire had five dimensions: mobility , self-care , usual activity , pain/ discomfort and anxiety/depression with five different levels for each dimension: 'no problem=1', 'slight problem=2', 'moderate problem=3', 'severe problem=4', and 'extreme problem=5'. EQ-5D-5L can produce 3125 combinations of health outcomes (From '11111' to '55555' corresponding to the EQ-5D index score ranging from 1 [Perfect health] to -0.45 [Worse than death]) (Oemar and Janssen, 2013). The EQ-Visual Analogue Scale (Hereafter VAS) is the inseparable part of EQ-5D questionnaire. It was used to record the self-rated health status on a 20 cm vertical, visual analogue scale, labelled with 'the best health you can imagine' at 100 and 'the worst health you can imagine' at 0 (Herdman *et al*,2011; Van Hout *et al*,2012).

3. Morbidity, treatment history and perceived QOC information

The questions about any illness in past 6 months besides their disability, visit to formal and non-formal health care providers were present in this section. Perceived quality was assessed by using 15-item questionnaire adapted from service quality (SERVQUAL) model (Parasuraman *et al*,1988), consisted five dimensions of service quality: tangibility, reliability, responsiveness, assurance, and empathy (Parasuraman *et al*,1988,Chakravarty, 2011). Likert scale of1-5 point (strongly disagree to strongly agree) was used.

Data collection procedure

Data collection was done with the help of two other researchers of the group and two research assistants by face-to-face interviews. All interviewers were trained in administration of questionnaire. Unique identification code (ID) is given to each data collector. Respondent's ID represents the combination of interviewer's code with serial number of the questionnaire (e.g. S01-001, J01-234 etc.).

About 25-30 interviews were conducted every day, on average 6-7 interviews by each interviewer. Each interview lasted for 20-25 minutes. Filled questionnaires were checked for clarity and completeness by the researcher daily.

Data management

Data entry template was developed in IBM SPSS (Statistical Package for the Social Sciences) version 20.0. (IBM Corporation, 2011). Data cleaning was done by running the descriptive analysis and inconsistent values and impossible combinations were identified and corrected.

Dimensions of EQ-5D were grouped into two categories 1) problems and 2) no problem. Slight, moderate, severe, and extreme problems were grouped together under problems category. EQ-5D index score and VAS were analysed by doing cross tabulation with different independent variables.

Quality of care dimensions: tangibility, reliability, responsiveness, assurance, and empathy were analysed by taking the mean score under each dimension. Five-point Likert scale was used, which ranged from 1 (Strongly disagree) to 5 (Strongly agree).All mean scores of dimensions of quality were divided into two categories: poor and good. Score below 3 was categorized as poor and score from 3.1 to 5 was categorized as good.

The continuous outcome variables were analysed for the outliers by Tuckey's fence test. EQ-5D index and VAS did not have any outliers. Descriptive statistics was calculated for all the variables of interest. Chi-square test of association was performed to check the association between the different independent and dependent variables. Fisher's Exact test was performed if more than 20% of cells had expected cell counts less than 5 (Khan, 2014).

Reliability and validity

Bengali version of EQ-5D-5L is a pre-validated questionnaire to assess HRQOL; for QOC section SERVQUAL model-based questionnaire was used. Pretesting of questionnaire was done in the similar population. Reliability and item analysis was performed for EQ-5D dimensions and 15-item questions on QOC. Cronbach's alpha for EQ-5D was

0.813 for five dimensions. Cronbach's Alpha for QOC 15 item questionnaire was .804 (coefficients above .80 are considered as good for internal consistency) (Gliem and Gliem, 2003). All correlations were significant at the α level of 0.01 for both the scales.

Ethical consideration

Study was conducted for partial fulfilment of MPH in James P Grant school of Public Health and approved by the same institution. Informed written consent was obtained from the study respondents, those who were not able to write or were illiterate; in such cases, verbal consent was also considered. Respondents were provided with a copy of consent form and anonymity was maintained throughout the study.

RESULTS

Demographic characteristics of study respondents

Table 1 shows the socio-demographic characteristics of study respondents by sex. In total, 282 PWPDs completed the interview. Majority of the respondents (83.7%) were males with median age of 35 year (Interquartile range (IQR) = 25-45 years), married (63.1%) and Muslims (92%). About one-third (38.3%) were having education below primary andmore than quarter were unemployed (29.4%). About 45% respondents had household size less than or equal to four members. Median monthly household expenditure was 12,000 BDT. About half of the respondents (48%) were having monthly household expenditure below 10,000 BDT and were residing in urban area (52.8%).

Table 2 shows the disability profile of the respondents. About one third of respondent's lower part of the body (right leg/ left leg/ both legs) was affected. The median duration of disability was 3years (IQR = 1-11 years). Most of the respondents (61%) were suffering from disability for more than 5 years and had acquired (88.7%) the disability during their lifetime. Median age at onset of disability was 26 year. Almost half of the respondents (48.9%) were using wheelchair.

Table 1: Socio-demographic characteristics of study respondents

Variables		**Sex**		**Total (n=282)**
		Male (n=236)	**Female (n=46)**	
		%	%	
Age (Years)	18-29	40.7	34.8	39.7
	30-39	25.8	17.4	24.5
	40-49	14.4	13.0	14.2
	50-59	13.1	19.6	14.2
	60+	5.9	15.2	7.4
Marital status	Never married	41.1	15.2	36.9
	Ever married	58.9	84.8	63.1
Education	No formal	11.9	37.0	16.0
	Primary	39.8	30.4	38.3
	Sec./higher sec.	32.2	23.9	30.9
	Graduate/PG	16.1	8.7	14.9
Occupation	Unemployed	35.6	17.4	32.6
	Employed	47.5	28.3	44.3
	Homemakers	0.0	50.0	8.2
	Student	16.9	4.3	14.9
Monthly Household expenditure (BDT)	< 10000	47.9	43.5	47.2
	10000 to 30000	43.6	50.0	44.7
	> 30000	8.5	6.5	8.2
Household Members	≤ 4	44.4	50.0	45.3
	> 4	55.6	50.0	54.7
Residence	Urban	54.2	45.7	52.8
	Rural	45.8	54.3	47.2

Table 2: Disability profile of the study respondents (n=282)

Variables	Categories	%
Part of body affected by impairment	Lower part of body	42.6
	Upper part of body	1.1
	Left side of body	30.1
	Right side of body	22.0
	Whole body	4.3
Duration of disability	≤ 5 years	61.0
	> 5 years	39.0
Onset of disability	Congenital	11.3
	Acquired	88.7
Mobility aid used	Wheelchair	48.9
	Axillary crutch	17.0
	Elbow crutch	4.6
	Four point stick	1.1
	Wooden stick	5.3
	Wooden sledge	3.5
	Did not need	19.5

Morbidity and treatment history

Before investigating about perceived quality of care, respondents were asked about illness in past sixmonths. Most of the respondents (85.5%) had suffered from some illness in past six months. Fever (56.7%) was the most common illness symptom mentioned by participants followed by pain (27.5%), headache (14.2%), urinary tract infection (12.4%).Female PWPDs had higher prevalence of abdominal pain and NCDs compared to male, rest of diseases were more prevalent among males.

More than 70% PWPDs had visited formal health care providers at clinic /hospital. Around one-third visited private clinic/ hospital and about one fourth reported to visit the NGO clinic/hospital, similar number of respondents reported to visit government clinic/hospital. PWPDs who did not visit any formal care provider, of them, about 50% reported to visit drug sellers for treatment, 23.2% opted the self-treatment.

Health-related quality of life of the study respondents

HRQOL is having five dimensions: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. Figure 4 illustrates that around 85% respondents had problems in mobility dimension, 83% in self-care dimension, 86% in usual activities dimension, 68% in pain/discomfort dimension, and 86 % had problem in anxiety/depression dimension of HRQOL. Table 3 shows frequency of reported problems under different dimensions of HRQOL by selected socio-demographic characteristics.

1) Mobility

About 40% respondents were unable to walk and 22.3% had severe problem in walking (Table 5).Most of the people (85.5%) had some kind of difficulties in mobility. Mobility was significantly associated with age, $\chi 2$ (4, N = 282) = 10.91, p = .02, occupation, $\chi 2$ (3, N = 282) = 18.10, p <.01, part of body affected by impairment, $\chi 2$ (4, N = 282) = 28.04, p <.01, duration of disability, $\chi 2$ (1, N = 282) = 14.53, p <.01, onset of impairment , $\chi 2$ (1, N = 282) = 11.43, p <.01 and mobility aid used, $\chi 2$ (6, N = 282) = 31.04, p <.01 (See table 3 for frequency).

2) Self-care

Around 10% respondents were unable to perform any kind of self-care followed by 24.8% with severe problem (Table 5). Most of the respondents (83%)

had some kind of problems in performing self-care (Table 3). Self-care dimension was significantly associated with occupation, $\chi 2$ (3, N = 282) = 10.22, p <.01, household expenditure, $\chi 2$ (2, N = 282) = 11.05, p <.01, duration of disability, $\chi 2$ (1, N = 282) = 27.95, p <.01, onset, $\chi 2$ (1, N = 282) = 10.71, p <.01, mobility aid, $\chi 2$ (6, N = 282) = 34.44, p <.01 (See table 3 for frequency).

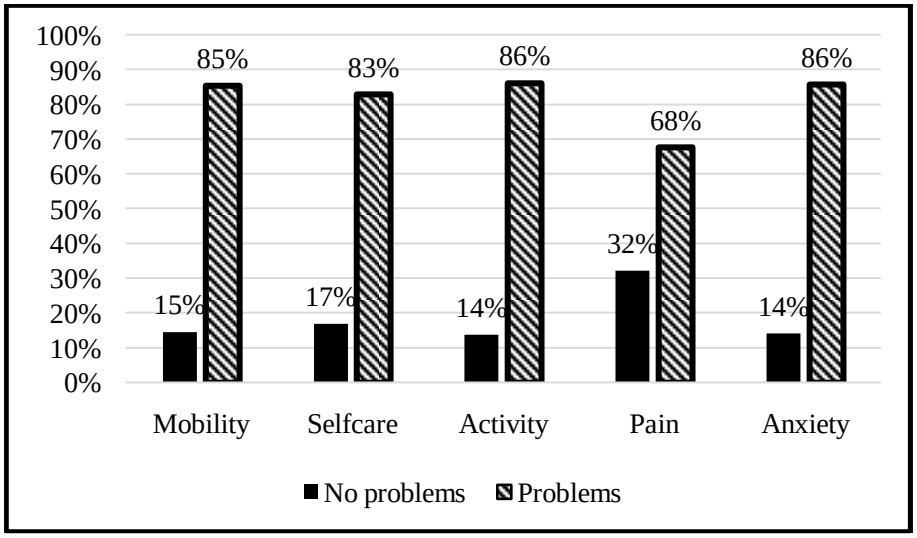

Figure 2: Proportion of problems in different dimensions of HRQOL

3) Usual activities

Around 13% were unable to perform usual activities and 26% had severe problems (Table 5). Most of the respondents (86.2%) had some kind of problems in usual activities. Usual activity dimension of HRQOL was significantly associated with age, $\chi 2$ (4, N = 282) = 13.18, p <.01, marital status, $\chi 2$ (1, N = 282) = 4.03, p <.04, occupation, $\chi 2$ (3, N = 282) = 14.05, p <.01, part of body affected, $\chi 2$ (4, N = 282) = 9.06, p <.04, duration, $\chi 2$ (1, N = 282) = 14.55, p <.01, disability onset, $\chi 2$ (1, N = 282) = 27.11, p <.01, and mobility aid, $\chi 2$ (6, N = 282) = 30.10, p <.01.

4) Pain/Discomfort

Only 4.6% were having extreme pain/discomfort followed by 15.2% had severe pain (Table 5). Around two-third (67.7%) had some level of pain/discomfort (Table 3). Pain/discomfort dimension was associated with age, $\chi 2$ (4, N = 282) = 13.73, p <.01, marital status, $\chi 2$ (1, N = 282) = 10.78, p <.01, occupation, $\chi 2$ (3, N = 282) = 20.01, p <.01, part of body affected, $\chi 2$ (4, N = 282) = 17.54, p <.01, duration of disability, $\chi 2$ (1, N = 282) = 40.94, p <.01, and disability onset, $\chi 2$ (1, N = 282) = 34.72, p <.01.

5) Anxiety/Depression

Around 17% reported extreme anxiety/ depression and 22.3% had severe anxiety (Table 5). Majority of respondents (85.8%) had some anxiety/ depression. Anxiety/ depression was associated with sex, $\chi 2$ (1, N = 282) = 4.36, p = .03, duration, $\chi 2$ (1, N = 282) = 18.81, p <.01, and disability onset, $\chi 2$ (1, N = 282) = 16.12, p <.01

Table 3: Frequency of respondents reporting problems in dimensions of HRQOL by selected socio-demographic characteristics (n=282)

Dimensions of HRQOL		Mobility		Self-care		Usual activity		Pain/ Discomfort		Anxiety/ Depression	
Variables		No problem %	Problem %	No problem %	Problem %	No problem %	Problem %	No problem %	Problem %	No problem %	Problem %
Age (Year)	18-29 years	21.4	78.6	21.4	78.6	20.5	79.5	42.0	58.0	17.9	82.1
	30-39	14.5	85.5	21.7	78.3	14.5	85.5	36.2	63.8	13.0	87.0
	40-49	12.5	87.5	15.0	85.0	7.5	92.5	17.5	82.5	12.5	87.5
	50-59	5.0	95.0	5.0	95.0	7.5	92.5	20.0	80.0	15.0	85.0
	60+	0.0	100.0	4.8	95.2	0.0	100.0	19.0	81.0	0.0	100.0
Sex	Male	14.8	85.2	18.2	81.8	14.4	85.6	33.9	66.1	16.1	83.9
	Female	13.0	87.0	10.9	89.1	10.9	89.1	23.9	76.1	4.3	95.7
Marital status	Never married	17.3	82.7	20.2	79.8	19.2	80.8	44.2	55.8	17.3	82.7
	Ever married	12.9	87.1	15.2	84.8	10.7	89.3	25.3	74.7	12.4	87.6
Occupation	Unemployed	5.4	94.6	12.0	88.0	5.4	94.6	19.6	80.4	9.8	90.2
	Employed	17.6	82.4	18.4	81.6	17.6	82.4	36.8	63.2	16.	83.2
	Homemakers	4.3	95.7	4.3	95.7	4.3	95.7	17.4	82.6	4.3	95.7
	Student	31.0	69.0	31.0	69.0	26.2	73.8	54.8	45.2	21.4	78.6
Household expenditure (BDT)	< 10000	13.5	86.5	24.1	75.9	15.8	84.2	27.8	72.2	15.0	85.0
	10000 to 30000	15.9	84.1	12.7	87.3	11.9	88.1	36.5	63.5	12.7	87.3
	> 30000	13.0	87.0	0.0	100.0	13.0	87.0	34.8	65.2	17.4	82.6
Household Members	≤ 4	18.3	81.7	21.4	78.6	16.7	83.3	34.9	65.1	15.9	84.1
	> 4	11.2	88.8	13.2	86.8	11.8	88.2	28.9	71.1	13.2	86.8
Part of body affected	Lower part	3.3	96.7	11.7	88.3	7.5	92.5	20.8	79.2	15.0	85.0
	Upper part	0.0	100.0	0.0	100.0	0.0	100.0	100.0	0.0	33.3	66.7
	Left side	28.2	71.8	20.0	80.0	16.5	83.5	42.4	57.6	16.5	83.5
	Right side	19.4	80.6	24.2	75.8	22.6	77.4	37.1	62.9	9.7	90.3
	Whole body	8.3	91.7	16.7	83.3	16.7	83.3	33.3	66.7	8.3	91.7
Duration	≤ 5 years	8.1	91.9	7.6	92.4	7.6	92.4	18.0	82.0	7.0	93.0
	> 5 years	24.5	75.5	31.8	68.2	23.6	76.4	54.5	45.5	25.5	74.5
Onset	Congenital	34.4	65.6	37.5	62.5	43.8	56.2	78.1	21.9	37.5	62.5

	Acquired	12.0	88.0	14.4	85.6	10.0	90.0	26.4	73.6	11.2	88.8
Mobility aid	Wheelchair	5.1	94.9	8.0	92.0	5.8	94.2	23.9	76.1	11.6	88.4
	Axillary crutch	16.7	83.3	16.7	83.3	16.7	83.3	37.5	62.5	14.6	85.4
	elbow crutch	7.7	92.3	0.0	100.0	7.7	92.3	30.8	69.2	7.7	92.3
	4- point stick	0.0	100.0	66.7	33.3	66.7	33.3	66.7	33.3	66.7	33.3
	Wooden stick	20.0	80.0	20.0	80.0	13.3	86.7	26.7	73.3	6.7	93.3
	Not needed	36.4	63.6	40.0	60.0	32.7	67.3	47.3	52.7	20.0	80.0
	Other	20.0	80.0	20.0	80.0	0.0	100.0	40.0	60.0	20.0	80.0

Table 4: Frequency of reported problem by dimensions of HRQOL and QOC among PWPDs who utilised formal health care (n=173)

Variables		Mobility		Self-care		Activity		Pain		Anxiety	
		No problems	Problems	No problems	Problems	No problems	Problems	No problems	Problems	No problems	Problems
		%	%	%	%	%	%	%	%	%	%
Tangibility	Poor	21.4	78.6	14.3	85.7	14.3	85.7	38.1	61.9	9.5	90.5
	Good	10.7	89.3	10.7	89.3	10.7	89.3	22.1	77.9	11.5	88.5
χ^2(p value)		3.183(.074)		.403(.349)[a]		.403(.349)[a]		4.208 (.040)*		.121 (.490)	
Reliability	Poor	10.0	90.0	16.0	84.0	16.0	84.0	24.0	76.0	16.0	84.0
	Good	14.6	85.4	19.8	90.2	9.8	90.2	26.8	73.2	8.9	91.1
χ^2(p value)		.662(.416)		1.356(.244)		1.356(.244)		.148(.701)		1.811(.178)	
Responsiveness	Poor	11.7	88.3	17.0	83.0	13.8	86.2	25.5	74.5	10.6	89.4
	Good	15.2	84.8	5.1	94.9	8.9	91.1	26.6	73.4	11.4	88.6
χ^2(p value)		.453(.501)		6.003(.014)*		1.037(.309)		.025(.875)		.025(.874)	
Assurance	Poor	0.0	100.0	8.3	91.7	0.0	100.0	25.0	75.0	25.0	75.0
	Good	14.3	85.7	11.8	88.2	12.4	87.6	26.1	73.9	9.9	90.1
χ^2(p value)		1.977(.170)[a]		.131(.584)[a]		1.686(.217)[a]		.007 (.619)[a]		2.591 (.130)[a]	
Empathy	Poor	16.7	83.3	16.7	83.3	16.7	83.3	25.0	75.0	10.0	90.0
	Good	11.5	88.5	8.8	91.2	8.8	91.2	26.5	73.5	11.5	88.5
χ^2(p value)		.906(.341)		2.342(.126)		2.342(.126)		.049 (.825)		.091 (.763)	

Degree of freedom for all the sub tables is 1. *. The Chi-square statistic is significant at the .05 level. a. More than 20% of cells in this sub table have expected cell counts less than 5 so; Fishers Exact test is performed for the sub table.

Table 5: Frequency of respondents in each level of different dimensions of HRQoL (n=282)

Dimension	Levels	Count	N %
Mobility	I have no problems in walking about	41	14.5%
	I have slight problems in walking about	23	8.2%
	I have moderate problems in walking about	44	15.6%
	I have severe problems in walking about	63	22.3%
	I am unable to walk about	111	39.4%
Self-Care	I have no problems washing or dressing myself	48	17.0%
	I have slight problems washing or dressing myself	77	27.3%
	I have moderate problems washing or dressing myself	57	20.2%
	I have severe problems washing or dressing myself	70	24.8%
	I am unable to wash or dress myself	30	10.6%
Usual Activities	I have no problems doing my usual activities	39	13.8%
	I have slight problems doing my usual activities	67	23.8%
	I have moderate problems doing my usual activities	64	22.7%
	I have severe problems doing my usual activities	75	26.6%
	I am unable to do my usual activities	37	13.1%
Pain/Discomfort	I have no pain or discomfort	91	32.3%
	I have slight pain or discomfort	66	23.4%
	I have moderate pain or discomfort	69	24.5%
	I have severe pain or discomfort	43	15.2%
	I have extreme pain or discomfort	13	4.6%
Anxiety/Depression	I am not anxious or depressed	40	14.2%
	I am slightly anxious or depressed	64	22.7%
	I am moderately anxious or depressed	68	24.1%
	I am severely anxious or depressed	63	22.3%
	I am extremely anxious or depressed	47	16.7%

Table 6: EQ-5D index and VAS by socio-demographic factors and disability profile (n=282)

Variables		EQ-5D index			Visual Analogue		
		Median	Percentile 25	Percentile 75	Median	Percentile 25	Percentile 75
Age	18-29 years	.32	-.08	.55	60	50	80
	30-39	.28	-.01	.50	60	40	70
	40-49	.16	-.13	.43	60	40	75
	50-59	.09	-.06	.35	50	33	70
	60+	-.12	-.29	.26	30	30	50
Sex	Male	.29	-.07	.52	60	45	77
	Female	.05	-.16	.29	43	30	65
Religion	Islam	.25	-.08	.49	60	40	77
	Hindu	.05	-.14	.44	43	35	50
Marital status	Never married	.32	-.04	.55	60	50	80
	Ever married	.18	-.13	.43	50	40	70
Education	No formal	.08	-.11	.32	50	35	70
	Primary	.19	-.11	.50	50	40	70
	Secondary	.29	-.03	.45	60	50	80
	Graduate/PG	.31	-.08	.55	60	45	80
Occupation	Unemployed	.02	-.17	.32	50	40	70
	Employed	.30	-.03	.52	60	40	75
	Homemaker	.05	-.14	.19	35	30	50
	Student	.52	.33	.60	68	55	80
Household expenditure	< 10,000	.25	-.09	.50	50	45	75
	10,000-30,000	.27	-.06	.50	60	40	75
	> 30,000	-.08	-.24	.44	50	30	75
Household member	≤ 4	.29	-.08	.51	60	50	80
	> 4	.19	-.12	.44	50	40	70
Part of body affected	Lower part	-.03	-.14	.28	50	40	80
	Upper part	.35	-.07	.53	50	20	60
	Left side	.39	.19	.60	60	40	75
	Right side	.42	.15	.56	60	50	75
	Whole body	-.22	-.31	.24	40	20	50
Duration of disability	≤5 years	.12	-.16	.33	50	40	70
	> 5 years	.43	.05	.63	70	50	80
Onset of disability	Congenital	.60	.34	.71	70	50	80
	Acquired	.19	-.10	.43	50	40	70
Mobility aid	Wheelchair	-.05	-.16	.27	50	40	70
	Axillary crutch	.32	.19	.55	63	48	78
	Elbow crutch	.25	-.01	.33	50	30	60
	Four-point stick	.52	.32	.73	50	15	50
	Wooden stick	.34	-.08	.56	50	40	70
	Wooden sledge	.44	.29	.53	55	50	60
	Not needed	.50	.31	.65	70	50	80

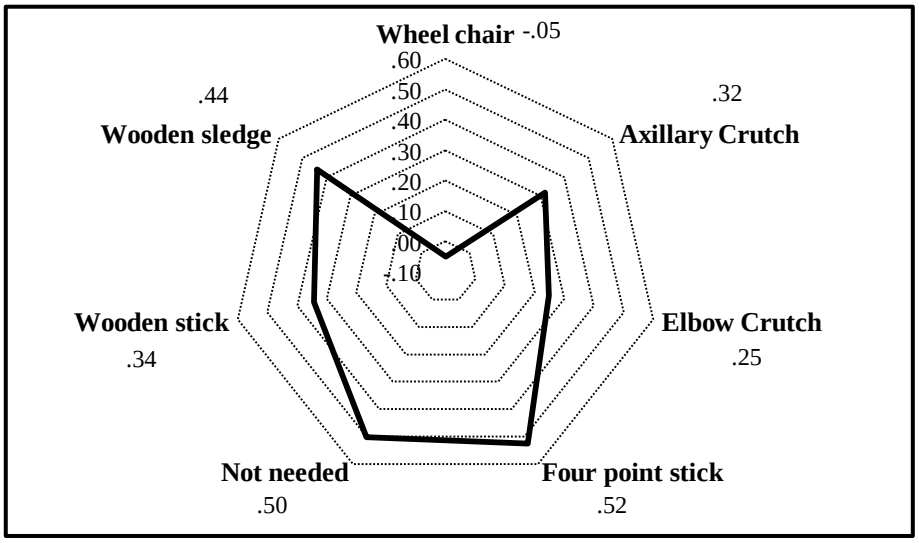

Figure 3: Median EQ-5D index with the kind of mobility aid used by PWPDs (n=282)

EQ-5D index (HRQOL) and Visual analogue scale rating (VAS)

Median EQ-5D index for study respondent was .24 (IQR = -.09 to .48) and median VAS was reported at 60 (IQR = 40 to 75). EQ-5D index was highest (0.32, 60) in respondents aged between 18- 29 years and was poorest (-.11, 30) among respondents in 60+ age category. EQ-5D index (.28 Vs .05) and VAS (60 Vs 43)was better in males . Muslims had better EQ-5D index than Hindus (.24 Vs .05) (60 Vs 43). EQ-5D index of unmarried PWPDs was better than ever married (.33 Vs .17) (60 Vs 50) than married (Table 6). EQ-5D index has shown improvement with increase in education i.e. EQ-5D index of people with no formal education (.08, 50) was lowest compared to people with education up to college or above (.31, 60) there was an increasing trend in VAS with increase in education after primary school (Table 6).

EQ-5D index was lowest (.02) in unemployed PWPDs and was highest among students (.52). PWPDswith household expenditure 10,000 to 30,000 BDT had better EQ-5D index and VAS (.36, 70) compared to expenditure group > 30,000 (-.08). People residing in urban area had better median EQ-5D index and VAS (.32, 60) compared to people living in rural area (.12, 50). PWD with family size above four, had poor EQ-5D index and VAS (.19, 50). Figure 5 shows that EQ-5D index was better in PWDs who were not using any assisting device (.50) compared to PWDs using wheelchair (-.05), similar is the case with VAS.

Perceived quality of health care

Perception of QOC was assessed among respondents (n = 173) who visited any formal health care provider during last 6 months. For the respondents with more than one visit during last 6 months, the last visit experience was investigated.. Under tangibility, 75.7% respondents rated health care facility as good. Most of the respondents (71.1%) rated their treatment facility as reliable. Only less than half (45.7%) respondents rated health care facility good in responsiveness. Most of the respondents (93.1%) rated health facility as good in case of assurance. Around two-third of the respondents (65.3%) rated health care facility good in empathy dimension of QOC.

Figure 6 illustrates about participants those who rate assurance dimension of QOC as poor their HRQOL was worse than the death (-0.01).

1) Tangibility: PWPDs those who rated tangibility as poor, among them, 78.6% had some problem in mobility dimension of HRQOL, 85.7% had problems in self-care and usual activities, 61.9% had pain/discomfort and 90.5% had some level of anxiety/depression. Almost significant association was found between tangibility and pain/discomfort dimension of HRQOL, $\chi 2$ (1, N = 173) = 4.20, p <.07 (Table 4).

2) Reliability: PWPDs those who rated reliability as poor, of them 90% had some problem in mobility, 84% had some problem in self-care and usual activities, 76% had problem in pain/discomfort dimension, and 84% were having some anxiety/depression. There was no significant association between reliability dimension of QOC and any dimension of HRQOL (Table 4).

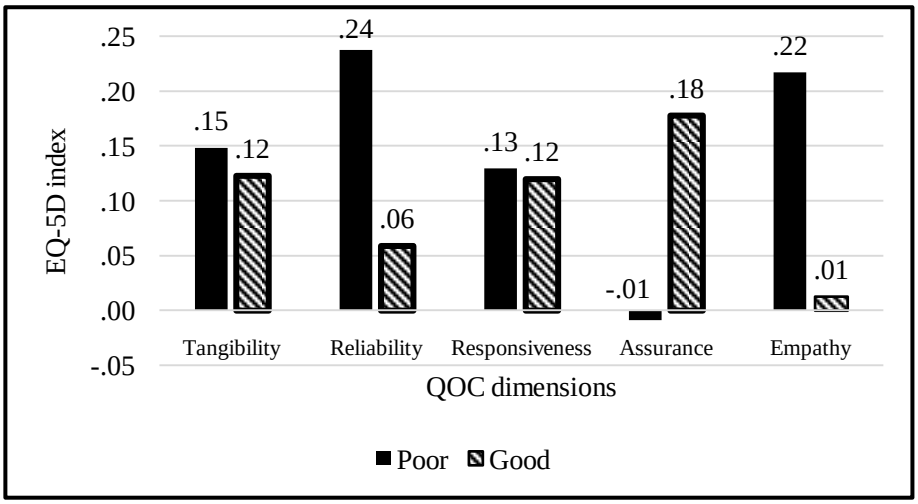

Figure 4: Median EQ-5D index by QOC dimensions and rating among PWPDs (n=173)

3) Responsiveness: PWPDs who rated responsiveness as poor, of them 88.3% had some problem in mobility dimension of HRQOL, 83% had problem in self-care, 86.2% had problem in usual activities, 74.5% had pain/ discomfort, and 89.4% had some level of anxiety/depression. Responsiveness was significantly associated with self-care, $\chi 2$ (1, N = 173) = 6.00, p <.05.

4) Assurance: PWPDs those who rated assurance as poor, of them 100% had some problem in mobility and usual activities, 91.7% had problem in self-care, 75% had pain/ discomfort and anxiety/depression dimension. There was no significant association between assurance dimension of QOC and the dimension of HRQOL, but negative trend was observed in EQ-5D, previously.

5) Empathy: PWPDs those who rated empathy as poor, among them 83.3% had some problem in mobility, self-care and usual activities, 75% had pain/ discomfort, and 90% had problem in anxiety/depression dimension of HRQOL (Table 4). There was no significant association between empathy dimension of QOC and any dimension of HRQOL

DISCUSSION

The study provides a snapshot of socio-demography, disability profile, HRQOL, and perceived QOC of formal health care services.

1) Socio-demographic characteristics and HRQOL

HRQOL was found to be deteriorating with the age in our study. These findings are comparable with the previous study conducted in Sweden, which also demonstrated decrease in QOL with increase in age.Age was found to affect the mobility, usual activities, and the pain/discomfort dimensions of HRQOL. Similarly, a study conducted in the United Kingdom among HIV population found that with the increase in age, prevalence of reported problems

increases in all the dimensions of HRQOL except anxiety/depression (McGowan *et al,* 2014).

In present study, women had poor HRQOL compared to men which was relevant with the finding from several studies, where women reported less HRQOL compared to men (McDonnell *et al,* 2000,Salaffi *et al,* 2005, Peng *et al,* 2013, Sparring *et al,* 2013). One possible reason of this finding may be the social construct causing gender discrimination and leading to poor health status (Sellers*et al,* 2013).

In our study, people those who never married had better HRQOL than the married PWPDs. A study by Hosain *et al* (2002) in Bangladesh found that disability shatters the marriage of PWDs and deteriorates the HRQOL, particularly among women, which may explain the poor HRQOL among married (Lubinga *et al,* 2013).

More than half of the respondents in present study had either education below primary or no formal education. A study conducted in Bangladesh found that a large number of PWDs are not able to access education (Khan and Anisuzzaman, 2011; Peters, 2013). It might be due to absence of inclusive education leading to higher dropouts of disabled children from school (Choudhuri*et al,* 2005).

We found that PWPDs with more family members had poor HRQOL; poor HRQOL of PWPDs with big size family, might be due to the neglect of PWPDs because of other family priorities.

In present study, we found that high household expenditure does not guarantee a high HRQOL for PWPDs, after a certain limit it does not matter. However, a study conducted by Horner-Johnson (2013) found the association of financial hardship and poor HRQOL among PWD population, which is also reaffirmed by several studies which found that higher socio-economic status increases the access to quality health care services and leads to better QOL (Jagger *et al,* 2007).

We found that urban area residence had an association with better HRQOL. Presence of disabled friendly apartments, public transports, options of outdoor walking facility etc., might be the reason for better HRQOL of residents of urban area (Schootman *et al,* 2010).

2) HRQOL and disability

Part of body affected by impairment and onset of impairment were significantly associated with all dimensions of HRQOL except anxiety/depression.

Injury was the most common cause of impairment among the PWPDs in this study and mostly lower part of body was affected. It can be compared with the study done by Eldin *et al* (2011) which demonstrated that disability involving lower part of body is most common because people with serious thorax or abdominal injury may not survive to develop disability. Similar finding were reiterated by Sudaryo *et al (*2012).

Duration of impairment was associated with all the dimensions of HRQOL in present study; longer the duration higher the HRQOL. Possibly, increase in duration of disability enhances the persons' capacity to adapt, thus they report high HRQOL (Charlifue *et al,* 1999, Livneh, 2001, Finch and Robinson, 2003, Bishop, 2005, Bostrom and Ahlstrom, 2005, Jamoom *et al,* 2008).

In this study, kind of mobility aid used was found to affect the mobility, self-care, and usual activity dimension of HRQOL and respondents using wheelchairs had a significantly lower HRQOL compared to PWPDs who can walk without any mobility aid. It might be possible that respondents using ambulatory aids reported a lower HRQOL because of more effort and energy loss associated with using crutches or hand propelled wheelchairs (Jain *et al,* 2007).

3) HRQOL and perceived quality of health care

Majority of the respondents had faced some sickness in past 6 months and visited the formal health care facility. Several studies has stated that need to visit hospital, is more among PWDs compared to people without disability (Officer and Groce, 2009,Miller *et al,* 2013, Gudlavalleti *et al,* 2014).

In our study, fever, pain, headache, and UTI were the common problems mentioned by PWPDs. Household Income and Expenditure Survey-2010 found the similar pattern of illnesses in last 30 days (BBS, 2011). Study in India by Gudlavalleti *et al* (2014) found higher prevalence of chronic diseases among

PWDs. In a study conducted among PWD in rural Bangladesh, health problems particularly hemiplegia, resting tremor, urinary incontinence, and depression were mentioned as common illness (Cherry*et al*, 2012).

In present study PWPDs who visited formal care providers, one-third visited private clinics/ hospitals and a quarter visited the NGO clinic/ hospital. Private care facilities had a higher perceived quality compared to government hospital/ clinic. As per the systematic literature review conducted by Basu *et al*,(2012), people perceive high quality in private facilities due to timeliness and hospitality, however, private hospitals often violate standards of medical practise and have poor health outcomes.

In present study, people who rated QOC as good had the lower HRQOL. It may be due to the fact that 50% of the respondents inour study visited private/NGO facility,where they may have encounteredpoor treatment, which is related to their poor HRQOL.

Pain dimension of HRQOL and tangibility dimension of QOC were significantly associated. Tangibility represents availability of equipment, visual appeal, cleanliness, comfortable waiting area, and well-groomed providers. A case control study in South India among PWD population concluded that availability of equipment and disabled friendly infrastructure affects the access and utilization of health care services and ultimately affects the HRQOL of PWDs (Wig *et al,* 2006, Gudlavalleti *et al*, 2014).

Self-care and responsiveness of QOC was significantly associated with HRQOL. PWPDs have to face more difficulties because of poor responsiveness of hospital staff compared to people without disabilities (Gudlavalleti *et al*,2014). Similarly, a study in India conducted by Awasthi *et al* (2012) among adolescents also revealed that medical treatment, staff attitude, and participation are significantly associated with the HRQOL.

In contrary to our expectations, other dimensions of QOC (Reliability, empathy and assurance) were not associated with any dimensions of HRQOL, which invites a rigorous study with bigger sample size using prevalence of problems in HRQOL of this study.

LIMITATIONS

Study was conducted among PWPDs associated with the not-for profit organizations, it may be possible that people associated with these organization were different from the people who were not associated with any organization. However, study organizations were involved in disability-related treatment which was not evaluated in this study. Thus, chances of selection bias are least possible.

EQ-5D-5L is more sensitive than the previous 3L system and free of ceiling effect, it is still inferior to SF-36 questionnaire (Turner*et al,*2013). However, considering shorter length of EQ-5D-5L questionnaire, less time required to administer the questionnaire, and availability of validated questionnaire in local language; EQ-5D-5L was opted.

CONCLUSION AND RECOMMENDATIONS

The finding of this study provide an important insight into the HRQOL, disability profile, prevalence of general illnesses and perceived quality of formal health care among PWPDs. It also helped in identifying the critical areas of quality of care, which are important for developing disabled friendly health care facilities. The HRQOL among PWPDs shows decrement with the age. Female sex is associated with high level of anxiety and lower HRQOL. High household expenditure does not guarantee the high HRQOL.

Study also inferred that focus on tangibility (physical infrastructure, presence and availability of staff) and responsiveness (willingness to respond to the need of patient) part of quality of health care has potential to affect the HRQOL of PWPDs.

The tangibility dimension is visual component of quality of services, which need a substantial amount of resources to make health services disabled friendly and it requires a global effort to improve conditions in developing countries such as Bangladesh. Promoting high tangibility will make services disabled friendly and will reduce their difficulties in physically accessing quality health care services.

Responsiveness is rather the interpersonal component of quality of care, which requires motivation, and

cooperation of staffinvolved in delivering the health care services. Study recommends development of cognisant services, which respond appropriately to the expectations of PWPDs.

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REFERENCES

Ahsan, S.M., Hamid, S.A. and Barua, S., 2012, Utilisation of formal health care and out-of-pocket payments in rural Bangladesh (No. 13).

Awasthi, S., Agnihotri, K., Thakur, S., Singh, U. And Chandra, H., 2012, Quality of care as a determinant of health-related quality of life in ill-hospitalized adolescents at a tertiary care hospital in North India. International Journal for Quality in Health Care, 24(6), pp.587-594.

Basu, S., Andrews, J., Kishore, S., Panjabi, R. And Stuckler, D., 2012, Comparative performance of private and public healthcare systems in low-and middle-income countries: a systematic review. PLoS med, 9(6), p.e1001244.

Bishop, M., 2005, Quality of life and psychosocial adaptation to chronic illness and disability preliminary analysis of a conceptual and theoretical synthesis. Rehabilitation Counseling Bulletin, 48(4), pp.219-231.

Boström, K. And Ahlström, G., 2005, Quality of life in patients with muscular dystrophy and their next of kin. International Journal of Rehabilitation Research, 28(2), pp.103-109.

Carr, A.J., Gibson, B. And Robinson, P.G., 2001, Is quality of life determined by expectations or experience?.British medical journal, 322(7296), p.1240.

Centre For Disease Control & Prevention, 2014, Health-related quality of life: Concept. Date of access: 05/12/2014. http://www.cdc.gov/hrqol/concept.htm

Centre For Disability In Development, 2011, CDD brochure. Date of access: 25/12/2014. http://www.cdd.org.bd/

Centre For Rehabilitation Paralysed, 2013, Annual report 2012-13: Ability not disability. Savar, Dhaka: CRP printing press. Date of access: 25/12/2014. http://www.crp-bangladesh.org/

Chakravarty, A., 2011, Evaluation of service quality of hospital outpatient department services. Medical Journal Armed Forces India, 67(3), pp.221-224.

Chamberlain, A.M., McNallan, S.M., Dunlay, S.M., Spertus, J.A., Redfield, M.M., Moser, D.K., Kane, R.L., Weston, S.A. and Roger, V.L., 2013, Physical health status measures predict all-cause mortality in patients with heart failure. Circulation: Heart Failure, 6(4), pp.669-675.

Charlifue, S.W., Weitzenkamp, D.A. And Whiteneck, G.G., 1999, Longitudinal outcomes in spinal cord injury: aging, secondary conditions, and well-being. Archives of physical medicine and rehabilitation, 80(11), pp.1429-1434.

Cherry, N., Chowdhury, M., Haque, R., Mcdonald, C. And Chowdhury, Z., 2012, Disability among elderly rural villagers: report of a survey from Gonoshasthaya Kendra, Bangladesh. BMC public health, 12(1), p.1.

Choudhuri, M.A., Alam, J., Hasan, R. And Rashida, S.A., 2005, Situational Analysis and Assessment of Education for Children with Disabilities in Bangladesh, South Asia, East Asia and South Africa.

Da Costa, D., Dritsa, M., Verreault, N., Balaa, C., Kudzman, J. And Khalifé, S., 2010, Sleep problems and depressed mood negatively impact health-related quality of life during pregnancy. Archives of women's mental health, 13(3), pp.249-257.

Eldin, W.S., Hirshon, J.M., Smith, G.S., Kamal, A.A.M., Abou-El-Fetouh, A. And El-Setouhy, M., 2012, Health-related quality of life after serious occupational injury in Egyptian workers: a cross-sectional study. BMJ open, 2(6), p.e000413.

Oemar, M. And Janssen, B., 2013, EQ-5D-5L User guide basic information on how to use the EQ-5D-5L instrument. Rotterdam, The Netherlands: EuroQol Group, 28.

Finch, J. And Robinson, M., 2003, Aging and late-onset disability: Addressing workplace accommodation. Journal of Rehabilitation, 69(2), p.38.

Galassi, G., Ariatti, A., Stefani, M., Miceli, P., Tondelli, M., Benuzzi, F. And Nichelli, P., 2014, Prognostic Factors and Health-Related Quality of Life (HRQol) in Ocular Myasthenia Gravis (OMG)(P2. 084). Neurology, 82(10 Supplement), pp.P2-084.

Gliem, R.R. And Gliem, J.A., 2003,Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales. Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education.

Gudlavalleti, M.V.S., John, N., Allagh, K., Sagar, J., Kamalakannan, S. And Ramachandra, S.S., 2014, Access to health care and employment status of people with disabilities in South India, the SIDE (South India Disability Evidence) study. BMC public health, 14(1), p.1.

Harrington, A.L., Hirsch, M.A., Hammond, F.M., Norton, H.J. And Bockenek, W.L., 2009, Assessment of primary care services and perceived barriers to care in persons with disabilities. American Journal of Physical Medicine & Rehabilitation, 88(10), pp.852-863.

Hazell, M., Frank, T. And Frank, P., 2003, Health related quality of life in individuals with asthma related symptoms. Respiratory medicine, 97(11), pp.1211-1218.

Herdman, M., Gudex, C., Lloyd, A., Janssen, M.F., Kind, P., Parkin, D., Bonsel, G. And Badia, X., 2011, Development and preliminary testing of the new five-level version of EQ-5D (EQ-5D-5L). Quality of life research, 20(10), pp.1727-1736.

Horner-Johnson, W., Dobbertin, K., Lee, J.C. And Andresen, E.M., 2013, Disparities in chronic conditions and health status by type of disability. Disability and health journal, 6(4), pp.280-286.

Bangladesh Bureau Of Statistics, 2011, household income and expenditure survey, HIES- 2010, Preliminary report on household income and expenditure survey: statistics division, Ministry of Planning, The Government of the People's Republic of Bangladesh.

Hosain, G.M., Atkinson, D. And Underwood, P., 2002, Impact of disability on quality of life of rural disabled people in Bangladesh. Journal of Health, Population and Nutrition, pp.297-305.

Howitt, S.C., Jones, M.P., Jusabani, A., Gray, W.K., Aris, E., Mugusi, F., Swai, M. And Walker, R.W., 2011, A cross-sectional study of quality of life in incident stroke survivors in rural northern Tanzania. Journal of neurology, 258(8), pp.1422-1430.

IBM Corp., 2011, IBM SPSS statistics for Windows, version 20.0. New York: IBM Corp.

Jagger, C., Matthews, R., Melzer, D., Matthews, F., Brayne, C. And Cfas, M., 2007, Educational differences in the dynamics of disability incidence, recovery and mortality: Findings from the MRC Cognitive Function and Ageing Study (MRC CFAS). International Journal of Epidemiology, 36(2), pp.358-365.

Jain, N.B., Sullivan, M., Kazis, L.E., Tun, C.G. And Garshick, E., 2007, Factors associated with health-related quality of life in chronic spinal cord injury. American journal of physical medicine & rehabilitation/Association of Academic Physiatrists, 86(5), p.387.

Jamoom, E.W., Horner-Johnson, W., Suzuki, R., Andresen, E.M. And Campbell, V.A., 2008, Age at disability onset and self-reported health status. BMC Public Health, 8(1), p.1.

Joshi, N., Khanna, R. And Shah, R., 2014,The Association Between Depression, Health-Related Quality Of Life (Hrqol), And Disability Status Among Adults With Arthritis. Value in Health, 17(3), p.A52.

Jiang, Y. And Hesser, J.E., 2009. Using item response theory to analyse the relationship between health-related quality of life and health risk factors. Prev Chronic Dis, 6(1), p.A30.

Khan, A. H. M. N., &Anisuzzaman, M., 2011,The status of un-served children in education: Children with disability in Bangladesh- A situational analysis. Dhaka: Campaign for Popular Education. Retrieved from www.campebd.org/

Khan, H. R., 2014, Biostatistics 1: Testing categorical data [Power point slides]. Date of access: 15/08/2014. http://123.49.46.176//course/index.php?categoryid=4

Livneh, H., 2001, Psychosocial Adaptation to Chronic Illness and Disability A Conceptual Framework. Rehabilitation Counseling Bulletin, 44(3), pp.151-160.

Lubinga, S.J., Levine, G.A., Jenny, A.M., Ngonzi, J., Mukasa-Kivunike, P., Stergachis, A. And Babigumira, J.B., 2013, Health-related quality of life and social support among women treated for abortion complications in western Uganda. Health and quality of life outcomes, 11(1), p.1.

Lucas-Carrasco, R., Pascual-Sedano, B., Galán, I., Kulisevsky, J., Sastre-Garriga, J. And Gomez-Benito, J., 2010, Using the WHOQOL-DIS to measure quality of life in persons with physical disabilities caused by neurodegenerative disorders. Neurodegenerative Diseases, 8(4), pp.178-186.

Mcdonnell, K.A., Gielen, A.C., Wu, A.W., O'campo, P. And Faden, R., 2000,Measuring health related quality of life among women living with HIV. Quality of life research, 9(8), pp.931-940.

Mcgowan, J., Sherr, L., Rodger, A., Fisher, M., Miners, A., Johnson, M., Elford, J., Collins, S., Hart, G., Phillips, A. And Speakman, A., 2014, Effects of age on symptom burden, mental health and quality of life amongst people with HIV in the UK. Journal of the International AIDS Society, 17(4).

Miller, N.A., Kirk, A., Alston, B. And Glos, L., 2013, Effects of gender, disability, and age in the receipt of preventive services. The Gerontologist, p.gnt012.

Monir, Z.M., El-Alameey, I.R. And Eltahlawy, E., 2013, Health related quality of life of children with epilepsy in Egypt. Journal of The Arab Society for Medical Research, 8(2), p.53.

Murray, C.J., Vos, T., Lozano, R., Naghavi, M., Flaxman, A.D., Michaud, C., Ezzati, M., Shibuya, K., Salomon, J.A., Abdalla, S. And Aboyans, V., 2013, Disability-adjusted life years (DALYs) for 291 diseases and injuries in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. The lancet, 380(9859), pp.2197-2223.

Negi, H., Sarkar, M., Raval, A.D., Pandey, K. And Das, P., 2014, Health-related quality of life in patients with chronic obstructive pulmonary disease in North India. Journal of postgraduate medicine, 60(1), p.7.

Nezu, S., Okamoto, N., Morikawa, M., Saeki, K., Obayashi, K., Tomioka, K., Komatsu, M., Iwamoto, J. And Kurumatani, N., 2014, Health-related quality of life (HRQOL) decreases independently of chronic conditions and geriatric syndromes in older adults with diabetes: the Fujiwara-kyo Study. Journal of Epidemiology, 24(4), p.259.

Nilsson, J., Rana, A.M. And Kabir, Z.N., 2006, Social capital and quality of life in old age results from a cross-sectional study in rural Bangladesh. Journal of Aging and Health, 18(3), pp.419-434.

Officer, A. And Groce, N.E., 2009, Key concepts in disability. The Lancet, 374(9704), pp.1795-1796.

Parasuraman, A., Zeithaml, V.A. And Berry, L.L., 1985,A conceptual model of service quality and its implications for future research. the Journal of Marketing, pp.41-50.

Peng, Y.S., Huang, J.W., Hung, K.Y., Lin, B.S., Lin, C.Y., Yang, C.S., Chen, T.W., Hsia, C.C., Chen, D.L., Hsu, W.D. And Chang, C.F., 2013, Women on hemodialysis have lower self-reported health-related quality of life scores but better survival than men. J Nephrol, 26(2), pp.366-74.

Peter, E., Kamath, R., Andrews, T. And Hegde, B.M., 2014, Psychosocial determinants of health-related quality of life of people living with HIV/AIDS on antiretroviral therapy at Udupi District, Southern India. International journal of preventive medicine, 5(2), p.203.

Peters, S.J., 2013,Education and disability in cross-cultural perspective. Routledge.

Quintas, R., Alvarez, A.S., Koutsogeorgou, E., Cerniauskaite, M., Meucci, P., Sattin, D., Leonardi, M. And Raggi, A., 2012, The relationship between health-related quality-of-life and disability in patients with controlled epilepsy: a cross-sectional observational study. American Journal of Physical Medicine & Rehabilitation, 91(13), pp.S31-S38.

Roset, M., Badia, X. And Mayo, N.E., 1999, Sample size calculations in studies using the EuroQol 5D. Quality of life research, 8(6), pp.539-549.

Saha, A., 2012, "SavarUpazila". In Banglapedia: National Encyclopedia of Bangladesh (2nd ed.). edited by S. Islam & A. A. Jamal, (Bangaldesh, Dhaka: Asiatic Society of Bangladesh).

Salaffi, F., De Angelis, R., Stancati, A., Grassi, W. And Pain, M., 2005, Health-related quality of life in multiple musculoskeletal conditions: a cross-sectional population based epidemiological study. II. The MAPPING study. Clinical and experimental rheumatology, 23(6), p.829.

Salaffi, F., Carotti, M., Gasparini, S., Intorcia, M. And Grassi, W., 2009, The health-related quality of life in rheumatoid arthritis, ankylosing spondylitis, and psoriatic arthritis: a comparison with a selected sample of healthy people. Health and quality of life outcomes, 7(1), p.1.

Saleh, F., Mumu, S.J., Ara, F., Hafez, M.A. And Ali, L., 2014, Non-adherence to self-care practices & medication and health related quality of life among patients with type 2 diabetes: a cross-sectional study. BMC public health, 14(1), p.1.

Sawatzky, R., Ratner, P.A., Johnson, J.L., Kopec, J.A. And Zumbo, B.D., 2010, Self-reported physical and mental health status and quality of life in adolescents: a latent variable mediation model. Health and quality of life outcomes, 8(1), p.1.

Schootman, M., Andresen, E.M., Wolinsky, F.D., Miller, J.P., Yan, Y. And Miller, D.K., 2010, Neighborhood conditions, diabetes, and risk of lower-body functional limitations among middle-aged African Americans: a cohort study. BMC public health, 10(1), p.1.

Sellers, S., Cherepanav, D., Hanmer, J., Fryback, D.G. And Palta, M., 2013, Interpersonal discrimination and health-related quality of life among black and white men and women in the United States. Quality of Life Research, 22(6), pp.1307-1312.

Sparring, V., Nyström, L., Wahlström, R., Jonsson, P.M., Östman, J. And Burström, K., 2013, Diabetes duration and health-related quality of life in individuals with onset of diabetes in the age group 15—34 years–a Swedish population-based study using EQ-5D. BMC public health, 13(1), p.1.

Sudaryo, M.K., Endarti, A.T., Rivany, R., Phalkey, R., Marx, M. And Guha-Sapir, D., 2012, Injury, disability and quality of life after the 2009 earthquake in Padang, Indonesia: a prospective cohort study of adult survivors. Global health action, 5.

Tsutsumi, A., Izutsu, T., Islam, A.M., Maksuda, A.N., Kato, H. And Wakai, S., 2007,The quality of life, mental health, and perceived stigma of leprosy patients in Bangladesh. Social science & medicine, 64(12), pp.2443-2453.

Turkson, P.K., 2009, Perceived quality of healthcare delivery in a rural district of Ghana. Ghana medical journal, 43(2).

Turner, N., Campbell, J., Peters, T.J., Wiles, N. And Hollinghurst, S., 2013, A comparison of four different approaches to measuring health utility in depressed patients. Health and quality of life outcomes, 11(1), p.1.

Verma S., 2015, Health related quality of life and perceived quality of health care among people with physical disabilities in Bangladesh. MPH Thesis. James P. Grant School of Public Health, Dhaka, Bangladesh

Van Hout, B., Janssen, M.F., Feng, Y.S., Kohlmann, T., Busschbach, J., Golicki, D., Lloyd, A., Scalone, L., Kind, P. And Pickard, A.S., 2012, Interim scoring for the EQ-5D-5L: mapping the EQ-5D-5L to EQ-5D-3L value sets. Value in Health, 15(5), pp.708-715.

Wig, N., Lekshmi, R., Pal, H., Ahuja, V., Mittal, C.M. And Agarwal, S.K., 2006,The impact of HIV/AIDS on the quality of life: A cross sectional study in north India. Indian journal of medical sciences, 60(1), p.3.

World Health Organisation, 2001, International classification of functioning, disability and health (ICF). Geneva: World Health Organisation (WHO). Date of access: 15/12/2014. http://www.who.int/classifications/icf/en

World Health Organisation, 2013, Disability and health. Date of access: 15/12/2014. http://www.who.int/mediacentre/factsheets/fs352/en

World Health Organisation, 2014, Health topics: Disabilities. Date of access: 15/12/2014.from http://www.who.int/topics/disabilities/en

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HEALTH RELATED QUALITY OF LIFE AND PERCEIVED QUALITY OF HEALTH CARE AMONG PEOPLE WITH PHYSICAL DISABILITIES IN BANGLADESH

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Abstract

In Bangladesh, an estimated 9.07% population is living with some form of disabilities; physical disability is most common form. Health-related-quality-of-life (HRQOL) of people with physical disabilities (PWPDs) can be affected by socio-demographic factors, environmental factors, and health-care-related factors etc. Among health-care-related factors, perceived-quality-of-care (QOC) is one determinant of HRQOL. The objective of the study was to assess level of HRQOL, perceived QOC in general illnesses, and to investigate association between socio-demography, perceived QOC and HRQOL among PWPDs. A cross-sectional survey was conducted among 282 PWPDs in Savar, Bangladesh. Data was collected using set of standard tools-EuroQol-5D-5L and SERVQUAL. Most of the respondents (83.7%) were males with median age 35 years, married (63.1%) and Muslims (92%). Age, sex, marital status, occupation, and household expenditure were significantly associated with HRQOL in Chi-square test. HRQOL among PWPDs shows decrement with age. Female sex is associated with high anxiety and poor QOL. High household expenditure does not guarantee high HRQOL. Most of the PWPDs visit formal care providers. HRQOL was better with poor perceived QOC. Tangibility and responsiveness of services are significantly associated with pain and self-care dimensions of HRQOL, respectively. Focus on these dimensions of quality of care can improve HRQOL of PWPDs.

Keywords: Health-related quality of life, Disability, Quality of care, EQ-5D

INTRODUCTION

Globally, disabilities are causing a substantial burden on health care system (Murray *et al*, 2013). International Classification of Functioning, Disability and Health (ICF) and Convention on the Rights of People with Disabilities (CRPD) view disability as a negative outcome (such as difficulties in performing daily activities and involvement in society) of interactions between health conditions and individual's physical, social, and attitudinal environment (World Health Organization [WHO], 2001, Officer and Groce, 2009).

Globally, more than one billion people are living with some form of disabilities, which constitute about 15% of world's population (WHO, 2013). Around 110 to 190 million adults have pronounced difficulties in functioning, worldwide (WHO, 2014). In Bangladesh, estimated 9.07% population is suffering from some form of disability (Bangladesh Bureau of Statistics [BBS], 2011). Estimated prevalence of disability is 8.13% and 10% among males and females, respectively, with 9.63% rural and 7.49% urban prevalence (BBS, 2011).

People with disabilities (PWDs) experience more social restrictions compared to people without physical disabilities, and social exclusion leads to lower level of well-being and poor quality of life

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KNOWLEDGE REGARDING NEONATAL JAUNDICE MANAGEMENT AMONG MOTHERS: A DESCRIPTIVE STUDY DONE IN A TERTIARY LEVEL HOSPITAL OF DHAKA CITY

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Abstract

Purpose: Jaundice is the most common clinical condition in the newborn that requires medical attention. This study was carried out in order to assess the knowledge on neonatal jaundice management among the mothers in a selected tertiary level hospital of Dhaka city.

Methodology: It was a descriptive type of cross-sectional study.150 samples were selected by non randomized purposive sampling technique with the administration of a pretested, modified and semi-structured questionnaire by face to face interview.

Major Results: Study found that majority of the respondents (76.7%) was in the age group 17-27 years with mean age 23.78±5.397 years. Majority of the respondents (83.3%) had heard about neonatal jaundice previously and 16.7% did not hear about it. Regarding Knowledge on preventive measures of NNJ (neonatal jaundice) 90.6% respondents had knowledge on "Putting jaundiced baby under direct sun light", 62.7% said "Herbal remedies", 48% indicated "Consult with doctor" and 12% had knowledge on "phototherapy". Another major finding from the study was that 7.3% respondents had excellent level of knowledge regarding NNJ, whereas 40.0%, 34.0% and 18.7% had satisfactory, good and poor level of knowledge respectively. The Chi-square test model showed a significant association between previous knowledge of the respondents on NNJ with level of knowledge among the respondents (p= 0.027) and age of the respondents (p=0.012). **Implication:** Awareness should be created among the expecting mothers about neonatal jaundice and encourage them to take preventive measures to avert neonatal mortality and morbidity.

Keywords: NNJ **(**Neonatal Jaundice**),** Knowledge, Mother

INTRODUCTION

Neonatal jaundice (NNJ) is still a leading cause of preventable brain damage, physical and mental handicap, and early death among infants in many communities. Greater awareness is needed among all health care workers.[1] Neonatal morbidity and mortality remain very high in the developing countries of sub-Saharan Africa, Asia and Latin

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America[2], and one of the important contributors to this is neonatal jaundice.[3,4]

Jaundice due to unconjugated hyperbilirubinemia is also the most common clinical problem in the neonatal period in many parts of the world.[5] NNJ causes brain damage (kernicterus) when severe,[6] leading to neurological handicap and early death of affected infants.

Jaundice is a common, often temporary and relatively harmless development in newborn babies, but sometimes it can be a sign of a more serious problem.[7] The neonatal period is the first 28 days of life, when the neonate is at maximum risk.[8] Neonatal morbidity and mortality is still high in African, Asian, Latin American, and, developing countries of which one of the most important contributing factors is jaundice. It presents in 60% of term neonates and 80% of preterm.[9] The maximum risk of hyperbilirubinemia is Kernicterus because of accumulation of unconjugated bilirubin in serum. According to a study, Kernicterus causes at least 10% of mortality and 70% of morbidity. However, correct use of phototherapy and blood exchange to control serum bilirubin level, can prevent complications.[10]

Neonatal jaundice (NNJ) is a major public health problem worldwide and is present among 50-60% of full term and 80% of preterm newborns, neonatal jaundice accounted for 13.5% of all admissions, placing it third on the list of causes requiring admissions for neonates.[11,12] Neonatal jaundice is recognized as a major problem in other Asian countries as well.[13] However, large-scale prospective studies documenting incidence of jaundice have not been reported from any part of the world.[14]

MATERIALS AND METHODS

This was a descriptive type of cross sectioned study.

All mothers who attended in a tertiary level hospital in Dhaka city, Bangladesh were the target population and the sample population was all the mothers' who were present at the time of data collection in the selected hospital in Dhaka city, Bangladesh. The study was carried out at Dhaka Medical College Hospital, Dhaka from October 2015 to January 2016 with a sample size of 150 and non randomized purposive sampling method was applied.

Data was collected by pretested and modified, self-administered semi-structured questionnaire by face to face interview. All the post natal mothers who gave consent was included in the study and those who refused to give consent and was found to be mentally handicapped were excluded from the study.

All questionnaires were checked for its completeness and correctness. Coding and classification were done. The analysis was carried out with the help of SPSS (Statistical package for social science) Windows software program version 19. Descriptive statistics was used for the interpretation of the findings. Cross tabulation and association was determined by use of chi-square test. Filled questionnaires were checked daily for completeness and consistency of the responses to eliminate possible errors.

Ethical consideration

- Permission from Ethical Review Committee of Northern University of Bangladesh and from study place.
- Written Informed consent obtained prior to the interview.
- Confidentiality of the respondents was maintained.
- Respondents' had rights to refuse and withdraw from the study at any time.

LIMITATIONS OF THE STUDY

The followings were the limitation of the study:

- Time was very limited.
- Limitation of the fund.
- Small study area could not represent the whole.

RESULTS

The following Variables of table no 1 describes Socio demographic characteristics of the study population. They are as following: age, religion, education, marital status, occupation, income, types of family & number of family member of the respondents etc. Majority of the respondents (76.7%) were in the age group 17-27 years and 23.3% was in 28-40 years of age group with mean age 23.78±5.397 years. Most of the respondents (93.3%) were Muslim, and 64% of the respondents completed primary level of education. Majority of the respondents (92.7%) were house wife and 44% of the respondents' monthly family income was BDT 5001-10000.

Majority of the respondents correctly answered the knowledge related questions like, Is Jaundice in newborn is yellowish discoloration of skin (92%). Another knowledge related questions which were correctly answered by the respondents, Is Jaundice is a common problem of newborns (74%), Is it abnormal if jaundice lasting for more than 2 weeks (76.7%). Majority of the respondents replied correctly when they had been asked that, Is NNJ is a cause of improper breastfeeding (80%), Is premature delivery is a risk factor of NNJ (72%), Does jaundice lasts for 2 weeks in case of preterm babies (63.3%), Is any infection of newborns can be a risk factor for NNJ (60%), Foods taken by mothers can cause jaundice in infants (46%), Severe jaundice may cause death in neonates (75.3%), Is blood testing by medical personnel needed to detect jaundice in infants (84.7%). (table 2

Table no 1: Distribution of the respondents by socio-demographic variables

Socio-demographic Variables		Frequency	Percentage
Age	17-27	115	76.7
	28-40	35	23.3
	Total	150	100.0
Mean age= 23.78±5.397			
Religion	Islam	140	93.3
	Hinduism	8	5.3
	Christianity	2	1.3
	Total	150	100
Education	Illiterate	10	6.7
	Primary	95	63.3
	Secondary	29	19.3
	Higher secondary	11	7.3
	Graduation and above	5	3.3
	Total	150	100.0
Occupation	House wife	139	92.7
	Govt. service	11	7.3

	Total	150	100.0
Monthly family income	BDT< 5000	39	26.0
	5001-10000	66	44.0
	10001-15000	7	4.7
	15001-20000	28	18.7
	BDT > 25000	10	6.7
	Total	150	100.0

Table no 2: Distribution of respondents by knowledge on NNJ (n=150)

Knowledge on NNJ	Answers	Percentage (%)
Is Jaundice in newborn is yellowish discoloration of skin	True*	92
	Don't know	8
Is Jaundice is a common problem of newborns	True	74
	False	0.7
	Don't know	25.3
Is it abnormal if jaundice lasting for more than 2 weeks	True	76.7
	Don't know	23.3
Is NNJ is a cause of improper breastfeeding	True	80
	Don't know	20
Is premature delivery is a risk factor of NNJ	True	72
	Don't know	28
A treatment of NNJ is phototherapy	True	45.3
	Don't know	54.7
Does jaundice lasts for 2 weeks in case of preterm babies	True	63.3

	False	2.7
	Don't know	34
Is any infection of newborns can be a risk factor for NNJ	True	60
	False	1.3
	Don't know	38.7
Foods taken by mothers can cause jaundice in infants	True	46.0
	False	26.7
	Don't know	27.3
Maternal drugs such as sulphonamides or anti-malarial can cause pathological jaundice in new borne	True	17.3
	False	28
	Don't know	54.7
Severe jaundice may cause death in neonates	True	75.3
	False	2
	Don't know	22.7
Is blood testing by medical personnel needed to detect jaundice in infants	True	84.7
	Don't know	15.3

Table no 2 reveals that majority of the respondents answered the true answer regarding knowledge related question on NNJ.

Table no 3: Distribution of respondents by knowledge on preventive measures of NNJ (n=150)

Knowledge on preventive measures of NNJ	Frequency (n)	Percent (%)
Putting jaundiced baby under direct sun light	135	90.6%
Herbal remedies	94	62.7%
Phototherapy	18	12%
Consult with doctor	72	48%

* Multiple responses

Regarding Knowledge on preventive measures of NNJ, it was found from table no 3 that among the respondents 90.6% had knowledge on "Putting jaundiced baby under direct sun light", 62.7% said "Herbal remedies", 48% indicated "Consult with doctor" and 12% had knowledge on "phototherapy".

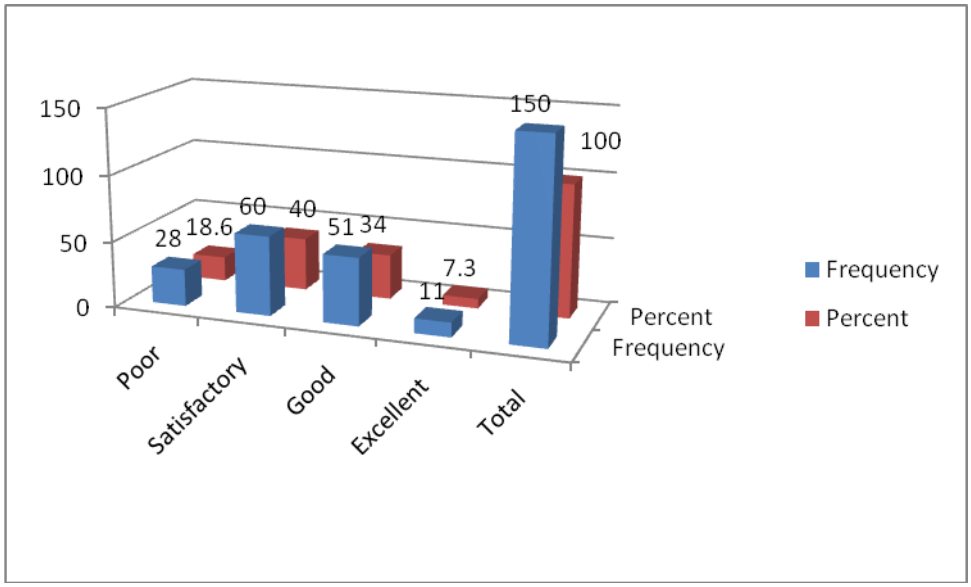

Figure no 1: Distribution of the respondents by levels of knowledge

Among the respondents 40% had satisfactory knowledge, 34% had good knowledge, 18.6% had poor knowledge and only 7.3% had excellent knowledge regarding neonatal jaundice.

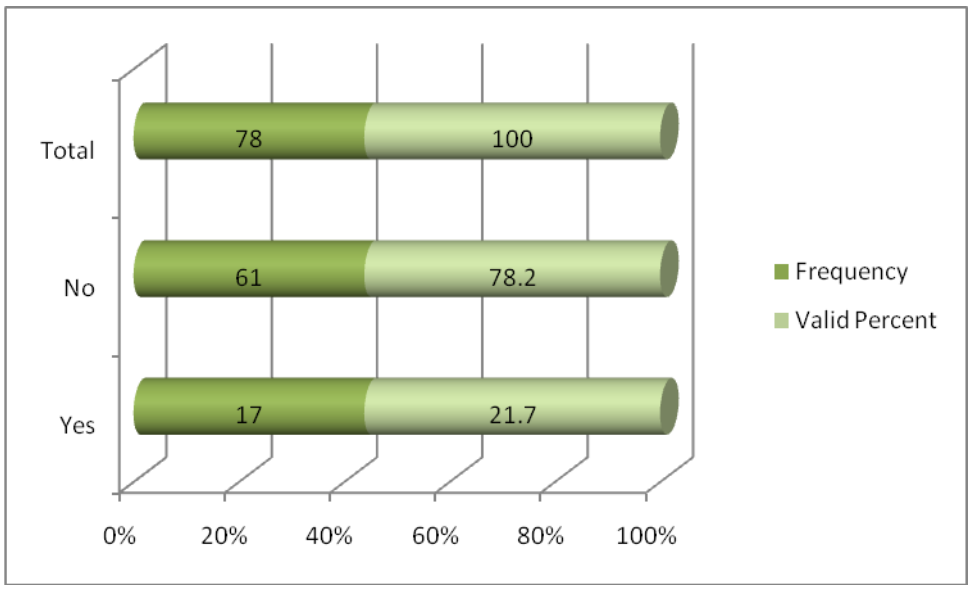

Figure no 2: Distribution of the respondents by history of jaundice in previous issues of pregnancy (n=78)

Another important finding was that among those who were reported as multipara 78.2% of the respondents' neonate was not affected by jaundice whereas 21.7% replied positively to this.

Table no 4: Distribution of the respondents by association between age and knowledge on management of NNJ

Age in years	Knowledge on management of NNJ				
	Sun lighting the baby	Herbal remedies	Phototherapy	Consult with doctor	Total
17-27	104	72	15	61	252
28-40	31	22	03	11	67
Total	135	94	18	72	319
p-value	0.748	0.979	0.476	0.025	

It is found from table no 4 that 17-27 years old respondents had good level of knowledge regarding management of NNJ rather than 28-40 years of respondents. Association was found only in between age of the respondents and knowledge on management of NNJ, which was consultation with doctors. (p=0.025)

Table no 5: Distribution of the respondents by association between previous knowledge on NNJ and level of knowledge

Previous knowledge on NNJ	Level of knowledge				Total	p-value
	Poor	Satisfactory	Good	Excellent		
Yes	18	53	44	10	125	0.027
No	10	7	7	1	25	
Total	28	60	51	11	150	

Among the respondents who had previous knowledge on NNJ scored higher while they were asked about knowledge related question.

DISCUSSION

A cross sectional study was conducted to assess the knowledge on neonatal jaundice management among the 150 post-natal mothers attending a selected tertiary level hospital in Dhaka city, Bangladesh from September 2015 to December 2015. Data was analyzed by using statistical packages for social science (SPSS) software version 19.0. A semi structured questionnaire, consisting 31 questions divided into two parts was used to collect the information. Section-A contained the question about the socio-demographic characteristics of the respondents, Section-B contained question about knowledge of the respondents regarding neonatal jaundice management. The data presented in the form of table and graph. Chi-square is used to calculate the association between demographic variable and knowledge of the respondents.

Observing socio demographic characteristics of the respondents, it was found that majority of the respondents (76.7%) was in the age group 17-27 years and 23.3% was in 28-40 years of age group with mean age 23.78±5.397 years. A similar finding was revealed in a study conducted in Malaysia by Boo et al where the mean age was 26.8± 6.5 years.[15]

Study also showed that most of the respondents (93.3%) was Muslim followed by Hindu (5.3%) and only 1.3% were Christian. More than half (64%) of the respondents completed their primary education followed by secondary level of education (19%) and higher secondary level and graduation 7% and 3% respectively. It is revealed that only 7% were illiterate. Among all 44% of the respondents monthly family income was BDT 5001-10000, followed by 26%, 18.7%, 6.7% and 4.7% respondents had a monthly family income BDT <5000, BDT 15001-20000, BDT >25000 and BDT 10001-15000 respectively. Occupation wise majority of the respondents (92.7%) was house wife and 7.3% was Govt. service holder. A quite different finding was noticed in a study conducted in Nigeria by Ogunlesi TA and Abdul AR where most of the mothers had tertiary level of knowledge. This educational variation among mothers has been observed as

Bangladeshi women are still neglected and scope of their education is still very poor.

Majority of the respondents (86.0%) reported that their previous baby was not affected with jaundice but 14.0% replied positively. The finding is exactly similar with the study conducted by Egube in Nigeria. The study showed that 14.1% of respondents had previous experience with NNJ.[17]

Majority of the respondents correctly answered the knowledge related questions like, Is Jaundice in newborn is yellowish discoloration of skin (92%). A quite dissimilar finding was observed in a study conducted by Egube BA at Nigeria that only 51.5% of the respondents gave a correct definition of NNJ.[17] This difference is likely due to difference in socio-demographic criteria of two countries. Another knowledge related questions which were correctly answered by the respondents, Is Jaundice is a common problem of newborns (74%), Is it abnormal if jaundice lasting for more than 2 weeks (76.7%), in relation to this quite similar finding was found in a study done by Boo NY, et al in Malaysia where it was seen that 71.7% knew that jaundice lasting more than 2 weeks was abnormal.[15]

Majority of the respondents replied correctly when they had been asked that, Is NNJ is a cause of improper breastfeeding (80%), Is premature delivery is a risk factor of NNJ (72%), Does jaundice lasts for 2 weeks in case of preterm babies (63.3%), Is any infection of newborns can be a risk factor for NNJ (60%), Foods taken by mothers can cause jaundice in infants (46%), Severe jaundice may cause death in neonates (75.3%), Is blood testing by medical personnel needed to detect jaundice in infants (84.7%). Almost consistent finding has been found in a study conducted by Boo NY et al[15] regarding severe jaundice may cause death in neonates', where it has been seen that 71.7% of the mothers knew that severe jaundice could cause death in newborn.

Current study also found that only 45.3% of the respondents knew about phototherapy as treatment of NNJ. Almost similar finding was observed in a study conducted by Ogunfowora OB et al in Nigeria[18], where it was found that 54.5 % had adequate knowledge on effective treatment namely phototherapy and exchange blood transfusion.

Regarding Knowledge on preventive measures of NNJ it was found that among the respondents 90.6% had knowledge on "Putting jaundiced baby under direct sun light", 62.7% said "Herbal remedies", 48% indicated "Consult with doctor" and 12% had knowledge on "phototherapy".

These findings completely vary from the study done in Nigeria by Boo NY[15] possibly due to difference in knowledge pattern of the respondents of two different countries.

Another major finding was that 7.3% respondents had excellent level of knowledge regarding NNJ, whereas satisfactory level of knowledge by 40.0%, good by 34.0% and poor level of knowledge by 18.7%. These findings are consistent with a study findings conducted by Ogunlesi TA et al in Nigeria, in which it was reported that out of 98 mothers, 57.1% had good knowledge on newborn jaundice.[16]

Strong association was found between age of the respondents and previous knowledge of the respondents about NNJ (p= 0.012). There was also an association between previous knowledge of the respondents on NNJ and level of knowledge among the respondents (p= 0.027).

It was also seen from the study that those who were more younger (17-27 yrs) in age are more knowledgeable than those of who were older (28-40 yrs), A significant association was also found between age and "consultation with doctor" (p=0.025).

CONCLUSION

It can be concluded that mothers of Bangladesh are yet to be aware regarding NNJ as only 7.3% of the respondents were found to have excellent knowledge regarding NNJ. Neonatal care has always been neglected in our country as yet Bangladeshi people are not properly educated. More over cultural values and customs make rural women out of focus regarding ANC and neonatal care. As women can not ask for their Reproductive right, mortality and morbidity are still high among rural mothers. It is the policy makers who can take necessary measures to make the rural mothers aware and save thousands of neonates and mothers.

RECOMMENDATION

As per the findings of the study, following recommendations are suggested:

Awareness program should be conducted among the mothers attending gynecological in-patient and out-patient department.

Further study also can be conducted to have greater view regarding the knowledge on neonatal jaundice care among mothers with larger sample size covering the whole Bangladesh.

REFERENCES

Olusoga B, Ogunfowora, Olusoji J Daniel. Neonatal jaundice and its management: knowledge, attitude and practice of community health workers in Nigeria. BMC Public Health 2006; 6:19

Zupan J. Perinatal mortality in developing countries. New Eng/ J Med 2005; 352:2047-2048. Available from: URL:

http://www.nejm.org/doi/full/10.1056/NEJMp058032

Owa JA, Oshinaike AI. Neonatal morbidity and mortality in Nigeria. Indian J Pediatr 1998; 65:441-449

Parkash J, Das N. Pattern of admissions to neonatal unit. J Coll Physians Surg Pak 2005; 15:341-344.

Escobar GJ, Greene JG, Hulac P, Kincannon E, Bischoff K, et al. Re-hospitalization after birth hospitalization: patterns among infants of all gestations. Arch Dis Child 2005; 90:125-131.

Hansen TW: Treatment of neonatal jaundice. Tidsskr Nor Laegeforen 2005; 125:594-598. Available from: URL:

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1409785/

Ali SM. Knowledge and Practices of Nurses Working in Neonatal Intensive Care Units toward Neonatal jaundice Kirkuk and Erbil Cities. Zanco J. Med. Sci., (special issue 2): 2010.

Andreoli T, Carfenter C. Cecil Essentials of Medicine. 5th ed. Philadelphia: W.B. Saunders, 2001, pp 371-2.

Behrman R, Kliegman R, Jenson H, eds. Nelson Text book of Pediatrics. 17th ed. Philadelphia: Saunders, 2004:523-599.

IP S, Chang M, Kulig J, O'Brian R, Sege S, Glicken et al. An evidence-based review of important issues concerning neonatal hyperbilirubinemia. Pediatrics 2004: 114.

AA Roberts, AFR Alabede, FA Olatona. Neonatal Jaundice: A Survey of Perinatal Correlates among Mothers of Infants Attending Immunization Clinic in Surulere Local Government Area. Journal Home. 2014; 66:1-2.

Parkash J & Das N (2005) Pattern of admission to neonatal unit. Journal of the College of physicians and surgeons- Pakistan 15:341-344.

Ho NK (1992) Neonatal jaundice in Asia. Baillieres Clinical Haematology 5:131-142. Available from: URL:

http://onlinelibrary.wiley.com/doi/10.1111/j.1365-3156.2010.02496.x/full

Anonymous (2004) Management of hyperbilirubinemia in the newborn infant 35 or more weeks of gestation. Pediatrics 114:297–316.

Boo NY, Gan CY, Gian YW, Lim KSL, Lim MW, Kumar HK. Malaysian Mothers' Knowledge and practices on care of Neonatal Jaundice. Med J Malaysia. August 2011; 66 (3).

Ogunlesi TA, Abdul AR. Maternal knowledge and care-seeking behaviors for newborn jaundice in Sagamu, Southwest Nigeria.Niger J ClinPract. 2015 Jan-Feb; 18(1):33-40.

Egube BA, Ofili AN, Isara AR, Onakewhor JU. Neonatal jaundice and its management: Knowledge, attitude, and practice among expectant mothers attending antenatal clinic at University of Benin Teaching Hospital, Benin City, Nigeria. Nigerian Journal of Clinical Practice. Apr-Jun 2013; 16(2).

Ogunfowora OB, Daniel OJ. Neonatal jaundice and its management: knowledge, attitude and practice of community health workers in Nigeria. BMC Public Health. 2006 Jan 27; 6:19

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MUSLIM OPINION LEADERS AS HEALTH COMMUNICATORS TO INCREASE UPTAKE OF MATERNAL AND CHILD HEALTH SERVICES IN MUSLIM MAJORITY GEOGRAPHIES OF NORTHERN NIGERIA: THE CASE OF THE SLaB PROJECT

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Abstract

This paper documents lessons learned from an innovative project implemented under the Saving Lives at Birth (SLaB) global partnership where Muslim Opinion Leaders (MOLs) are master trainers in pre and in- service training programs in Northern Nigeria. MOLs are certified through a master training program in Egypt to build the capacity of health providers to identify and correct religious misperceptions held by patients, to reduce barriers to MNCH services. An operational research methodology was utilized over the project's timeline 2014-2016, to compare changes in belief systems and counseling practices of health providers in intervention and control health facilities in Muslim majority, Katsina state. The operational research design is also used to compare beliefs and knowledge of pre-service health workers in one intervention and one control health training institute. Time series data found a clear correlation between in-service trainings by MOLs in intervention facilities; increases in clients counseled; and increased uptake of MNCH services. Conversely, control facilities were associated with no-change in counseling; and reduced uptake of MNCH. A similar pattern was found for students at intervention in-service training institutions compared to control training schools. This paper falls within a renew focus on engaging faith leaders and organizations in health communication and service delivery. This is championed by the World Bank, WHO and the Lancet.

Keywords: faith and public health; Islam and public health; Nigeria; SLaB; and Muslim Opinion Leaders

BACKGROUND AND JUSTIFICATION

In 2014, the indigenous Nigerian NGO, the development Research and Projects Centre (dRPC) was awarded a follow-on grant by the Saving Lives at Birth (SLaB) consortium to implement an innovative project which aimed to build the capacity of a core group of Muslim Opinion Leaders to train health providers/administrators on the correct Islamic precepts on:- 1) family planning/child spacing; 2) being attended by male health workers; 3) facility based antenatal care and delivery; 4) allowing neonates and children to accept polio and routine immunization; and 5) on age of marriage. This intervention aimed to correct misperceptions and was informed by the by the basic assumption that the health seek behavior of women and men of reproductive age in Muslim

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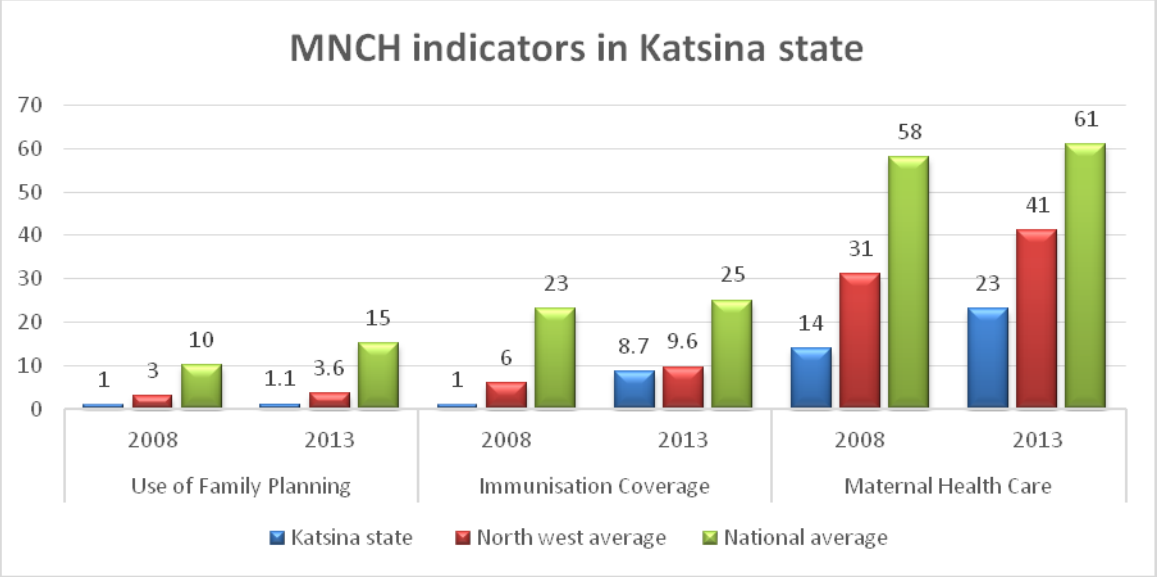
majority communities in Northern Nigeria is largely informed by incorrect information and perceptions about what is permitted or not permitted within Islam. While the DHS does track low uptake of MNCH services in Nigeria, it fails provide data points to explain low uptake in terms of religious based misconceptions.

At the field implementation level of MNCH interventions, however, two decades of failed polio and routine immunization interventions in Northern Nigeria as well as poor uptake of family planning services, low hospital delivery rates and persistently high rates of child marriage in this zone suggests that data collection must come to terms with a reality with which all health programmers are well acquainted. In this reality religious beliefs determine health seeking behavior and religious opinion leaders and faith communities exercise higher influence over health care decisions of men and women of reproductive age than health providers. Moreover, in Muslim majority communities in Northern Nigeria a second reality also compounding MNCH project performance is dearth of human resources in the health sector; poor representation of female health providers in particular and most importantly the fact that health providers often share the skepticism and mirror the poor acceptance profile of MNCH services as do the community members.

Against this background the SLaB project - Faith leadership to correct health providers religious misconceptions on MNCH services in Northern Nigeria - was designed as an innovative intervention to correct religious misperceptions on MNCH of health providers and to expand their capacity to communicate and counsel. The underpinning theory of change of this project held that - progressive Muslim Opinion Leaders with adequate health knowledge were the most strategic and effective health communicators to correct misconceptions amongst health providers on the Islamic position of accessing MNCH services. The underlying hypothesis of the project was that the effective Muslim Opinion Leaders (MOLs) are at health communication through training and mentoring for health providers (pre-service and in-service) providers the greater the correct knowledge on Islam and MNCH, the higher the capacity to communicate effectively and the greater the uptake of MNCH services in intervention facilities.

The Faith leadership in health communication project therefore sought to test this hypothesis in the project site of Katsina state in Northwestern Nigeria. Katsina, which is a Muslim majority state is characterized by MNCH indices below the regional and national average in Nigeria. Chart one below captures this reality.

Chart 1: MNCH Indicators - Katsina state, regional and national averages



Source: NDHS 2008 & 2013

METHODOLOGY

This paper employs an operational research design to compare the extent to which the underlying theory of change and faith and development hypothesis are validated. The operational research methodology aims to compare the number of patients counseled and quality of counseling provided by trained staff of intervention facilities to health providers not trained in control facilities. Similarly, the operational research design compares the knowledge, beliefs and practices of pre-service providers in intervention training institution with similar pre-service health worker training institution for which was held as a control site with no intervention. Ultimately, the operational research design was framed to compare uptake of services in intervention facilities to uptake of services in control facilities. The 14 Muslim Opinion Leaders (MOLs) of the project who were trained and certified as health communicators, stepped down the training and mentoring to 141 in-service health providers in 5 intervention facilities. In addition, the MOLs also trained 21 health instructors and 159 pre-service health providers at health training institute of Islam and MNCH services and communication strategy.

Table 1. Health Facility Response Rate (N=60)

Type of Facility	Name of Facility	Total number of staff	Numbers trained by MOL	Indepth interviews	Response rate
Control	Comprehensive Health Centre (CHC) Kofar Kaura	25	0	13	100.0
	Comprehensive Health Centre (CHC) Danja	30	0	13	100.0
Total		55	0	26	
dRPC–SLaB Intervention	Maternal & Child Health Centre (MCHC) Fago	19	19	5	100.0
	Maternal & Child Health Centre (MCHC) Shinkafi	25	25	7	100.0
	Comprehensive Health Centre (CHC) Daura	39	39	5	100.0
	Primary Health Centre (PHC) Dayi	22	22	10	100.0
	Comprehensive Health Centre (CHC) Funtua	50	36	7	60.0
Total		155	141	34	

*(Doctor, In-Charge, Nurse/Midwife, CHEW and JCHEW) – note some trained health providers were transferred out of the Intervention facilities

Conceptual and programmatic positions in favor of engaging faith leaders and faith communities in Public Health

Conceptual and programmatic arguments in favor of engaging faith leaders and communities in Public Health can be traced to the important work of the HIV/AIDS control and impact mitigation community in the 1990s. However, since 2004, UNICEF has led an important movement to energize the position for involving religious leaders and communities in vaccination programs in particular. UNICEF makes this case most convincingly with the observation that "There are many communities without schools, health facilities, or sanitation but there is hardly any community without a place of worship.[i]" UNICEF launched a guide titled - *Building Trust in Immunization: Partnering with religious leaders and groups*[ii], to elaborate the most effective strategies for developing and maintaining strong relationships between religious groups and leaders with health care providers.

In the intellectual domain, the leading medical journal, the Lancet has dedicated a series of important fora on faith based health care, arguing that health outcomes can be improved if faith based organizations (FBOs) are involved[iii]. According to the Lancet, little information is available regarding faith based health care of faiths other than Christianity[iv]. There is also a lack of data and analysis regarding the role of faith based health care compared to other health care providers when it comes to specific health issues. For example, there is a lot of information regarding faith based health care and HIV than there is in faith based health care and its impact on family planning, immunizations, child and maternal health etc[v]. The Lancet series on - *Understanding the roles of faith-based health-care providers in Africa: review of the evidence with a focus on magnitude, reach, cost, and satisfaction,* gives an extensive report on the limitations of the data available regarding the services of faith based health care providers.

Authors in the series note that faith based providers enjoyed higher satisfaction rates than other public service providers[vi]. Studies have shown that these higher satisfaction rates are not driven by religion per se, but by 'secondary effects in religion'. Arguing for greater partnership between faith-based organisations and health care providers for the attainment of the SDGs, the third paper in the

series recommends five areas in which these two groups can collaborate to achieve greater goals[vii]. The author remarks that faith based groups have capacities that align with the purpose of the development goals and, 'these capacities include geographical coverage, influence, infrastructure, scale, and sustainability. Faith-based groups contribute to community health (holistically defined to include social, environmental, physical, and spiritual wellbeing) in diverse ways, but especially through health-care provision and through their effect on health-related attitudes and behaviours.[viii]' The lancet series offers great insight into the relationships between faith and health care, as summarized in an article by The Borgen Project titled: *Global health increasingly influenced by religion*[ix] and an article by the Huffington Post titled: *A lancet breakthrough; publishing about faiths and health*[x].

On the African continent, the School of Public Health and Family Medicine at the University of Cape Town, in partnership with the World Health Organization co-ordinated the International Religious Health Assets Program (IRHAP) launched in 2012 as an extension of the African Religious Health Assets Program (ARHAP) of 2002. The program works with religious leaders, policy makers and health providers to encourage collaboration between the groups and 'expand knowledge about religious health assets.[xi]' In a publication which argued for the greater involvement of faith based organisations and leaders in the treatment of TB in Nigeria, IRHAP addresses the importance of collaboration between faith and other health organisations[xii]. According to the paper, religious institutions have the relevant health infrastructure, the ability to shape the health behaviours prevalent in communities and have some authority in influencing policy[xiii]. The paper also highlights that the health choices/behaviors of women are often controlled by men, and religious leaders are mostly male, therefore targeting them is important in reaching out to what constitutes as half of the population[xiv]. Similarly, the World Health Organizations' *Building from common foundations,* sought to identify stakeholders in primary healthcare in order to strengthen relationships with civil society organizations including faith based organizations[xv]. 'As the WHO study noted FBOs cover approximately 40 percent of the healthcare and services in Africa, however, it was observed that they tended to operate outside government planning and regulation.

Examples of the impact of religious leaders in public health can be found in the polio vaccination eradication programs of Nigeria[xvi] and Pakistan [xvii]. In the cases of Nigeria, India and Pakistan, the involvement of religious leaders in public health efforts significantly improved community engagement with the vaccinations, reduced suspicions, and provided guarantee through a reading of sacred sources that justified the use of vaccinations.

Muslim Opinion Leaders as health communicators for in-service health providers in 5 health facilities

The MOLs trained 141 in-service health providers including, Midwives; Nurses; Community Health Extension Workers; Junior Community Health Extension Workers; and Health Administrators through a structured training program supported by facility based mentoring on a quarterly basis during the second year of the three year SLaB supported intervention.

Photo Copyright dRPC: Muslim Opinion Leader of the SLaB project training health providers in Katsina state on the Islamic position on MNCH

Interestingly, a random sample of health providers in both the intervention and control facilities identified Islamic misconception as a major factor inhibiting uptake of MNCH services. For intervention facilities the figure stood at 25% while in control facilities the figure stood at 33.3% . Figure 1 below captures this data.

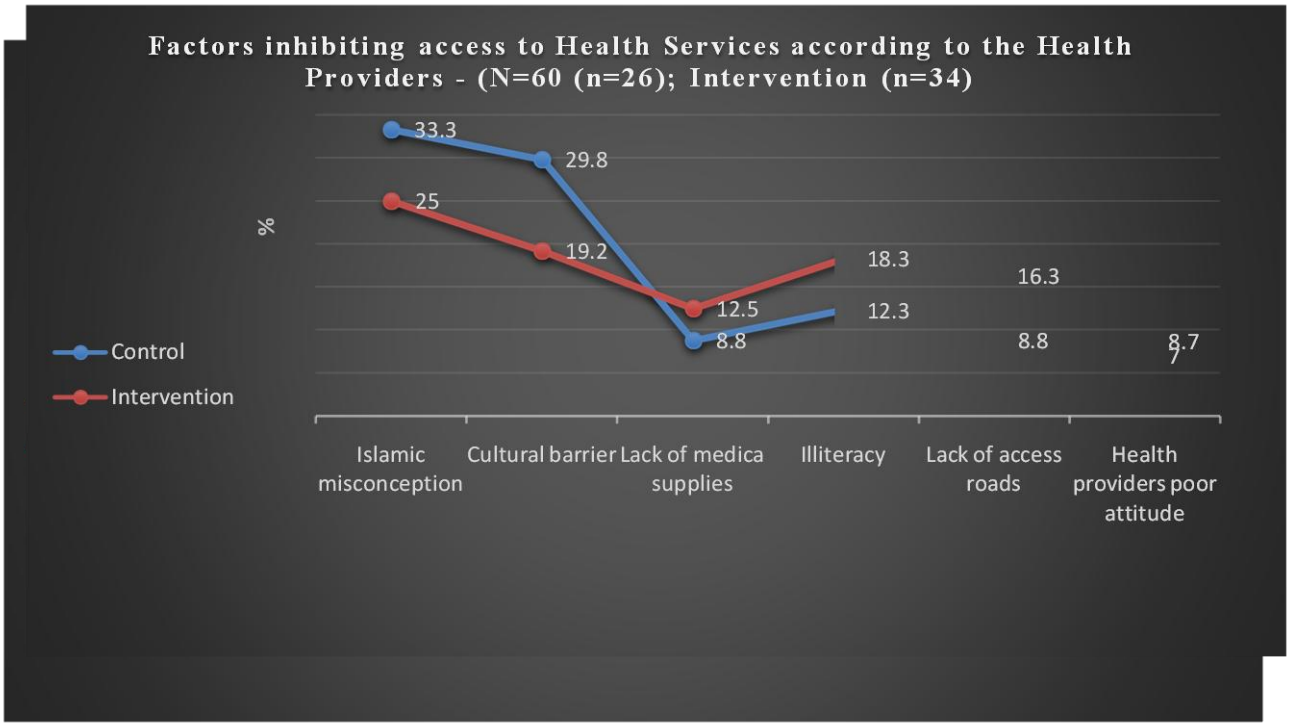


Figure 1: Factors inhibiting access to MNCH services in Facilities in Katsina state

Similar views on the significant role of Islamic misconceptions of MNCH notwithstanding between intervention and control facilities, important differences were identified in the incidence and quality of counseling on Antenatal Care (ANC), Family Planning (FP) and Routine Immunization (RI), by clients in the intervention and control facilities over the life of the project. The project's monitoring and evaluation system found that over a fifteen month period following the first training by MOLs at intervention facilities a total of 101,323 clients (71,880 in health facility and 29,443 out health facility) received counseling on the Islamic position on MNCH. In contrast, in the control facilities a total of 51,022 clients (37,860 in health facility and 13,162 outside health facility) received counseling on ANC, FP and RI and other health related RMNCH services over the same period of time. Figure 2 below shows the areas in which counseling was provided.

This figure shows the number of clients who accessed different counseling services in Intervention and Control facilities. In both Intervention and Control facilities, routine immunization (including polio) recorded highest hospital visit followed by aggregate of other MNCH services related to pregnancy/child development. Family planning then hospital delivery were the least. However, in all the MNCH service categories, Intervention facilities recorded more visits than Control facilities. So also, in both Intervention and Control facilities, the most preferred and Family Planning method accessed was Intra-uterine devices followed by injection then pills.

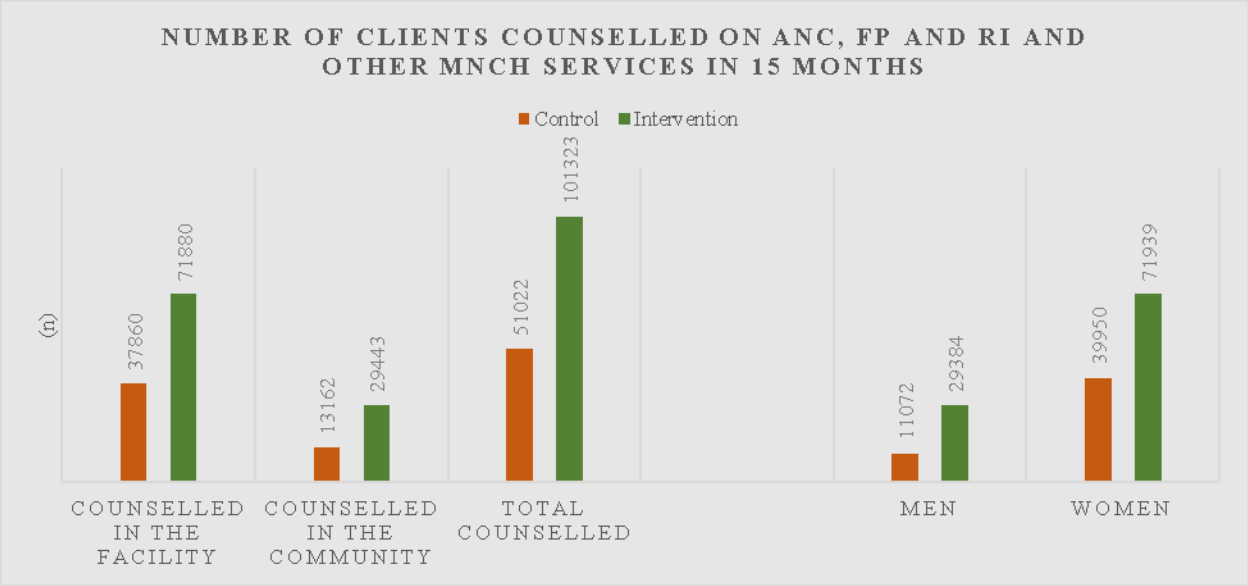


Figure 2: Clients accessing counseling services by type of service over 15 months in control and intervention sites

Figure 2 tells the story of numbers reached; regarding the issue of quality of services, feedback from clients in Figure 3 suggest that relevant and persuasive information was provided by trained providers in intervention facilities compared to health providers in control sites. More health providers in the Intervention facilities provide information on suitability of accessing MNCH service in Islam than health providers in the Control facilities. Barely 1 out of 26 (3.8%) health provider in the Control facilities inform their clients on Islam and MNCH before they ask while 18 out of 34 (52.9%) inform their clients on Islam and MNCH services before being asked. This is also paramount to the objective of this project.

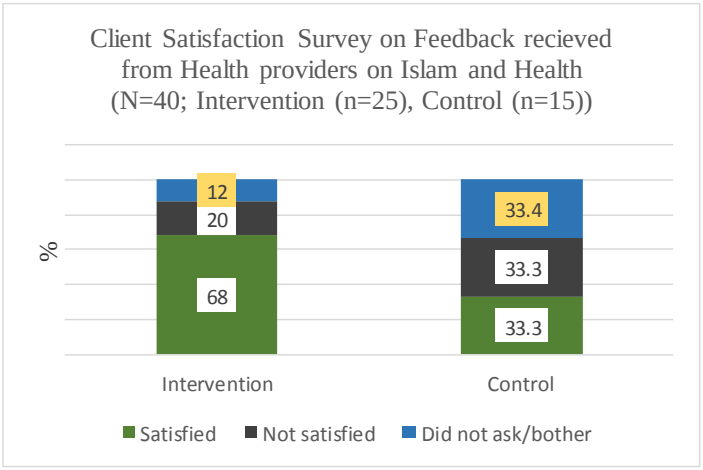


Figure 3: Satisfaction of Clients accessing MNCH services from trained health providers in Intervention facilities and providers in Control facilities

A total of 40 clients (25 from Intervention facilities and 15 from Control facilities) were randomly selected to access their opinion on feedback they have received from health providers. Seventeen out of the 25 clients (68%) accessing health services from Intervention facilities were satisfied with feedback they received, 5 out of 25 (20%) were not satisfied, and 3 out of 25 (12%) did not ask or bother to know about Islam and health. On the other hand, 5 out of 15 (33.3%) of clients accessing health services in Control facilities were satisfied with the feedback they received on Islam and MNCH services, 5 out of 15 (33.3%) were not satisfied, and 5 out 15 (33.4%) did not ask or bother to know about Islam and health.

Uptake of MNCH services in control and intervention facilities

Using a most similar systems research design, two most similar facilities (intervention and control) were singled out for close comparison and monitoring over a period of fifteen months following the training by the MOLs at intervention facilities. The purpose of the monitoring exercise was to determine total number of patients accessing services over this period of time. Facility records constituted the means of verification for this exercise. Figure 4 below, shows that in almost each area of services, intervention facilities saw double the number of patients than control facilities. However, in the case of family planning and hospital delivery both intervention and control facilities had clients. This points to the fact that there is still substantial work to be done in culturally sensitive service areas.

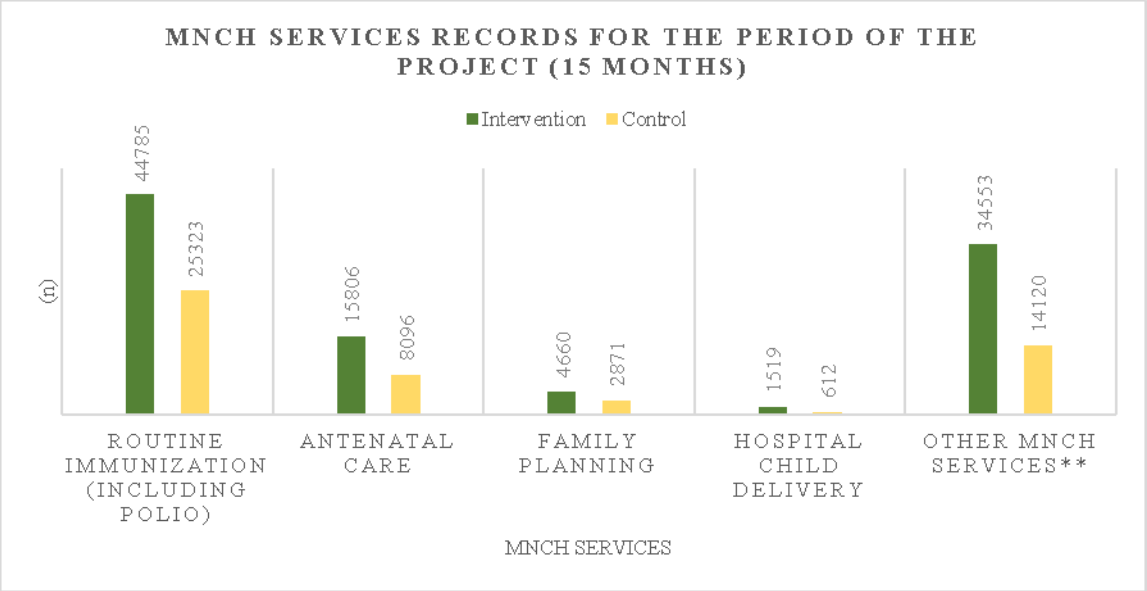


Figure 4: MNCH services provided by Intervention and Control Facilities in 15 month period after training

** Including all other pregnancy/child development related counseling

Change in knowledge, belief systems of pre-service health providers

The second domain for assessing performance in the SLaB project relates to the training done by the Muslim Opinion Leaders for health providers in training. Comparative data from two most similar Intervention and Control training health institutions points to the fact that pre-service providers in intervention facilities had more liberal beliefs concerning male providers treating female patients (question 9); the Islamic position on immunization (question 7); age of marriage (question 12); and many other critical areas concerning Islam and health. Table 2 below presents the findings.

Table 2: Knowledge and beliefs of pre-service health providers in intervention and control facilities in Katsina state

S/No	Questions	Intervention (N=160)				Control (N=49)			
		MCSHT Funtua (Post-test)				SHT Daura			
		Not specified/ Undecided/disagree		Agree/Strongly agree		Not Specified / Undecided/disagree		Agree/Strongly Agree	
		n	(%)	n	(%)	n	(%)	n	(%)
Q1	Islam is a complete Way of Life	-	-	160	(100.0)	-	-	49	(100)
Q2	Islam is friendly to Women	17	(10.6)	143	(89.4)	5	(10.0)	44	(90.0)
Q3	Islam is concerned with the health of women and girls	12	(7.5)	148	(92.5)	4	(8.0)	45	(92.0)
Q4	Women and Children have rights in Islam	5	(3.0)	155	(97.0)	4	(8.0)	45	(92.0)
Q5	Married women can be provided with family planning services in hospitals without the permission of the husband	121	(75.6)	39	(24.4)	44	(90.0)	5	(10.0)
Q6	Children have right to quality health within Islam	20	(12.5)	140	(87.5)	9	(18.4)	40	(81.6)
Q7	Islam permits Immunizations	5	(3.0)	155	(97.0)	24	(49.0)	25	(51.0)
Q8	Islam permits for women to deliver in health facilities	10	(6.0)	150	(100.0)	6	(22.0)	39	(78.0)
Q9	Where there are no female HCWs, male HCWs can attend to women	7	(4.4)	153	(95.6)	19	(38.8)	30	(61.2)
Q10	Islam permits girls married women to use modern methods of family planning	29	(18.0)	131	(82.0)	30	(61.0)	19	(39.0)
Q11	A girl should complete primary school before getting married	36	(22.5)	124	(77.5)	26	(53.0)	23	(47.0)
Q12	A girl should complete secondary school before getting married	60	(37.5)	100	(62.5)	30	(61.0)	19	(39.0)
Q13	When HCWs have knowledge of about Islamic perspective on health they are better able to do their job	5	(3.0)	155	(97.0)	5	(10.0)	44	(90.0)

CONCLUSIONS

The Faith leadership to correct health providers religious misconceptions on MNCH services in Northern Nigeria project funded by the Saving Lives at Birth consortium of impact investors and implemented by the development Research and Projects Centre has generated important evidence to support the association between faith and development. The project demonstrates the linkage between initiatives of faith actors in health; change in knowledge and belief systems of health providers; and improved uptake of MNCH services. The paper shows that the catalyst of 14 Muslim Opinion Leaders supported by 50 apprentices training and mentoring pre-service and in-service health providers can trigger a process of change leading to improved uptake of services. Moreover, the fact that access to these MNCH services were restricted by an epistemology

based on misperceptions and incorrect assumptions about what is permitted and not permitted within Islam highlights the significance of this intervention. The SLaB project raises issues beyond behavioral change; it addresses issues of skills building in the domain of health communication and changes of practice in conservative communities where change agents are also reflective of traditional communities.

REFERENCES

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i UNICEF Taps Religious Leaders in Vaccination Push: http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(04)16294-6.pdf

ii Building Trust in Immunization: Partnering with Religious Leaders and Groups: http://www.unicef.org/ceecis/building_trust_immunization.pdf

iii http://www.thelancet.com/series/faith-based-health-care

iv Understanding the Roles of Faith-based Health Care Providers in Africa: Review of the Evidence with a Focus on Magnitude, Reach, Cost, and Satisfaction:

http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(15)60251-3.pdf p.1765

v Ibid. p.1766

vi Ibid. p.1771

vii Strengthening of Partnerships between the Public Sector and Faith Based Groups:

http://www.thelancet.com/pdfs/journals/lancet/PIIS0140-6736(15)60250-1.pdf

viii Ibid. 1786

ix Global Health Increasingly Influenced by Religion:

http://borgenproject.org/global-health-increasingly-influenced-religion/

x A Lancet Breakthrough; publishing about Faith and Health:

http://www.huffingtonpost.com/katherine-marshall/a-lancet-breakthrough-pub_b_7777494.html

xi https://berkleycenter.georgetown.edu/organizations/international-religious-health-assets-programme

xii Faith and Tuberculosis: Experience and Opportunity in Nigeria:

https://s3.amazonaws.com/berkley-center/160521BCWFDDFaithTuberculosisExperienceOpportunityNigeriaPolicyBrief.pdf

xiii Ibid. p. 2

xiv Ibid. p. 3

xv Building From Common Foundations: The World Health Organisation and Faith-Based Organisation In Primary Healthcare:

https://extranet.who.int/iris/restricted/bitstream/10665/43884/1/9789241596626_eng.pdf

xvi The Role of Religious Leaders in Polio Eradication:

http://www.tijani.org/news/polio-eradication/

xvii The Role of Religious Leaders in Promoting Acceptance of Vaccination within a Minority Group: a Qualitative Study:

http://bmcpublichealth.biomedcentral.com/articles/10.1186/1471-2458-13-511