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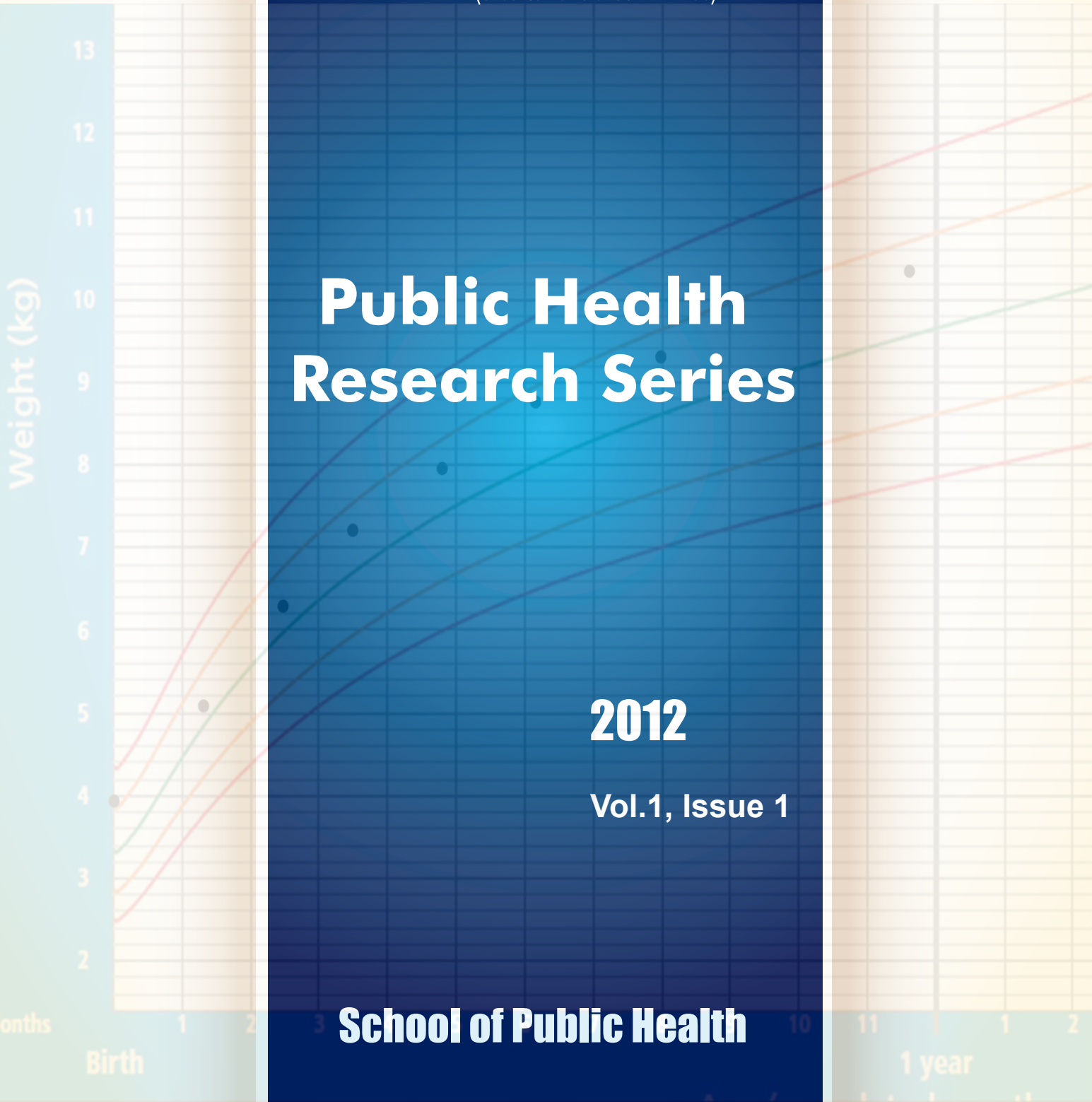
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Public Health Research Series

2012

Vol.1, Issue 1

School of Public Health



Preface

“A scientist writes not because he wants to say something, but because he has something to say”

– **F. Scott Fitzgerald**

The above quote more or less summarizes the essence of this publication. The School of Public Health, SRM University takes great pride and honor in bringing out the first of its Public Health Research Series, a compilation of research papers by the bright and intelligent students of the school. The Series has come out to provide a platform for sharing of research work by students and faculty in the field of public health. The studies reported in this Series are small pilot projects with scope for scaling up in larger scale to address important public health issues in India. They come from diverse settings spanning the length and breadth of the country, neighboring countries like Nepal and Bhutan, diverse linguistic, cultural and socio economic backgrounds. Some of the projects have generated important hypothesis for further testing, some have done qualitative exploration of interesting concepts and yet others have tried to quantify certain constructs in public health.

This book is organized into a set of 25 full reports and 5 briefs. The full reports give an elaborate description of the study objectives, methods and findings with interpretations and discussions of the authors. The briefs are unstructured concept abstracts. The studies were done by the students of the school of public health as their term project under the guidance of the faculty mentors to whom they were assigned at the time of enrolment into the course.

The students went through protocol development, presentation of the study protocols in the class, discussion and refinement of the protocol, approval of protocol by the Institutional Review Board, data collection, data cleaning and management, analysis and project report presentation. The final project was submitted as part of the course evaluation. After this, the students were given training on development of manuscript for publication and worked on their project reports and converted them to publishable manuscripts. These manuscripts were then reviewed by an external reviewer who further enhanced the technical and structural quality of the papers and classified them as full reports and briefs. Thus this Series is the output of the students’ learning on scientific writing.

Most of these papers have a good quality of presentation, style and use of writing techniques. Nevertheless it is important to acknowledge that the limited time availability, funding resources and manpower restricts some dimensions of scientific rigor of these reports. Moreover the Series mainly intends to reach out to students, researchers and faculty in the field of public health who want to peruse these ideas and build them up or test them in their own settings.

It is the ambition of the Series to progressively improve in the quality, presentation and diversity of its research papers over the years and ultimately become an independent journal of public health research from India.

Wishing the readers an intellectually stimulating and fruitful experience of reading the Series!

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Husbands as Birth Companion During Childbirth- Exploring Perceptions

Kaveri Mayra¹, Anil Kumar IK²

Abstract

Objectives: To explore the perceptions of pregnant woman, husband and service providers about the presence of husband as a birth companion during childbirth. **Data Sources:** Primary qualitative data was collected from two selected private and public hospitals in Kolkata, West Bengal. **Methodology:** An exploratory study design was adopted to elicit information from the selected respondents. In-depth interviews were conducted with 38 pregnant women and 38 husbands, who were beneficiaries of the two selected hospitals. The beneficiaries interviewed not necessarily couples, although some couples have been interviewed. Besides this 24 service providers were interviewed who were working in one of the two selected hospitals. A pretested checklist was used for gathering information. **Findings:** Most respondents perceived that the practice of allowing husband as a birth companion will be an advantage for reasons such as moral support, inner strength and confidence for the woman in labor and lesser fear of labor. They also felt it will ensure respectful behavior from the service providers. Some respondents perceived this practice to reduce domestic violence, and increase usage of spacing and limiting methods of family planning too. Some respondents believed it will compromise the privacy of other women who will be delivering in the same room and would bring stigma to them as it is not allowed from the cultural point of view. Service providers had an opinion that husbands generally became sick and dizzy as they are not used to such situations, thus adding to the burden of the providers. **Conclusion:** Women generally perceived that having their husbands as birth companions would significantly improve the quality of their birthing experience. The providers also seemed to share this view, though some felt that having the husbands might have negative consequences.

Introduction

Birthing is a turning point in the life of every couple. Childbirth is equally joyful to both the parents. In India, barring a few exceptions labor rooms do not allow the husbands to be with the woman during delivery. Not being allowed to be a part of the delivery process remains unjust on the part of the father. Birth companion is a person whom a woman chooses to be with her when she is giving birth to a baby (Oxford – Advance Learners Dictionary). In many countries like Australia, USA and Sweden, husband is allowed during childbirth to provide support during labor and they also undergo prior classes & counseling during Antenatal

Period. But in India it is neither practiced nor researched in depth.

Many small and large scale studies have been conducted in different parts of world that have confirmed that birth companionship is a process which carries benefits not only for women, but also for their husband and child. Studies have proven that having husband as a birth companion:

- ✓ Provides comfort and support for the mother.
- ✓ Reduces fear and anxiety, increases concentration on breathing techniques, increase self confidence and decrease

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emotional stress during labor.

- ✓ It helps father to bond with the child.
- ✓ Woman is likely to take lesser analgesics.
- ✓ Husband can ensure that the wife's preferences are followed, and can ensure any important decision can be taken carefully in case an emergency occurs.
- ✓ Enables the wife to cope with labor in more beneficial ways, like breathing instead of screaming.
- ✓ Supported women report slightly shorter labors.
- ✓ More chances of a spontaneous vaginal delivery.

Several western studies have shown that having the husband as the birth companion has significant positive effects such as reduced duration of labor, reduced pain perception, and an overall positive feeling.

A study from Nepal showed that both men and women had positive attitudes towards the husband being the birth companion, but there were significant social inhibitions. (4)

An African study also showed that presence of the spouse as birth companion led to lower Caesarean section rates, shorter labor duration and earlier initiation of breastfeeding. (10)

In this study we make a sincere effort to understand the perception of antenatal women and their husbands about the husband being allowed to be the birth companion.

Objectives

To explore the perception of pregnant women, their husbands and service providers about

the presence of husband as a birth companion during childbirth.

Methods

The primary stakeholders of this study are pregnant women, their husbands and service providers.. A Government hospital and a Private hospital in Kolkata were selected for the interview of service providers and beneficiaries. Both the hospitals are specialized in Gynecology and Obstetrics. Permission was obtained from the Medical Superintendent of the hospitals. Interviews of pregnant women and husbands were conducted in antenatal clinics and homes ensuring full privacy and confidentiality. Following are the inclusion criteria for the respondents:

1. Any married pregnant woman who is a beneficiary of any of the two study hospitals.
2. Any married man, whose wife is pregnant and is a beneficiary of any of the two study hospitals.
3. Doctors, Nurses and Administrators who are working in government or private hospital.

In-depth interviews were conducted with pregnant women, husbands and service providers to collect data qualitatively. Table 1 show the sample covered.

Table 1: Sample Covered

| Sl No. | Target Group | Sample covered | |
|--------|-------------------|----------------|------------------|
| | | Govt. Hospital | Private Hospital |
| 1 | Pregnant women | 36 | 2 |
| 2 | Husband | 36 | 2 |
| 3 | Service providers | | |
| 3.1 | Doctors | 4 | 4 |
| 3.2 | Nurses | 7 | 4 |
| 3.3 | Administrators | 2 | 2 |
| 3.4 | Counselor | 1 | 0 |

Three different tools were prepared for three types of respondents. These tools were pretested at SRM Hospital, Kattankulathur. Sequence of some questions was changed on the basis of interviews conducted. Final data collection for the study was done in June 2011, over a period of 3 weeks in Kolkata.

Findings

Perception on Birth Companion

The concept of birth companion was very new to pregnant women and husbands, although service providers had heard about it. Service providers were interviewed from two hospitals. The Government hospital that was selected did not allow birth companion. The private hospital selected for the study was allowing husbands as birth companion since last 11 years.

Privacy

Pregnant women: One of the women did not want birth companion, she said, *"There will be other women too delivering in the same room; it will be very uncomfortable for them."* At the same time there were other women who wanted birth companion as their privacy is anyway compromised in front of service providers who are all strangers.

Husband's Opinion: Privacy of other women was a very common reason among men who did not want to be birth companion. One of them said, *"I will ask my mother or sister to stay if allowed. Since many women will be delivering there, their privacy is at stake."*

Service providers: The service providers felt that this is a good practice. A nursing personnel from the government hospital said, *"We are having three labor tables side by side. It's difficult to allow the husbands here without any privacy. This can happen at private hospitals where separate cabins are allotted to every client but in our setting it's not possible."*

Fear

Pregnant Women: Women were scared of hospitals and they were scared of things that were not known to them. Some very bitter experiences were discovered in the interview of multi gravid women related to the behavior of service providers. One of the women shares her experience of a previous cesarean section,

"Last time the hospital where we went, the attitude of doctors was completely indifferent. They didn't show any concern. They did not check BP every time I went there. Even if they checked weight they didn't tell me. Here it is all better so we changed the hospital. I think iff my husband is there the doctors will behave properly. Last time I remember after I came to consciousness after my surgery I asked for some water and lifted my head but the doctor pulled me by my hair to make me lie down. I felt very bad and told my husband so we decided not to go there this time."

Husband: Husbands demonstrated understanding towards the pain and suffering during childbirth. A statement made by one of them, *"If that helps my wife in any way I'll stay."* clearly shows the understanding. One of them said, *"There won't be chances of switching the baby if I am there."* On the other hand one of them said; *"I am scared to see blood and can't stand its smell."*

Service Providers: A nursing personnel said, *"Suppose the husband is waiting outside and hears his wife screaming, he will not know what happened inside the labor room and might think we are beating her. But if he is inside he will see everything in front of him and that she screamed out of pain."* A similar statement was made by another staff nurse, *"Many a times it had happened that the mother is confused during delivery and cannot identify the gender of the baby and reports incorrectly later, the husband"*

shall be helpful in such situations. If husband is allowed inside then the service providers get a chance to be transparent."

There were women who found it normal for the husband to accompany his wife to diagnostic centre and for antenatal checkups, but there was another woman who said, *"Why shall he? Shall he move with me everywhere I go like my tail? Husband should have better things to do."* She further added that she does not want her husband to be a birth companion, *"There is no need for him to be there in that position. Let him go where-ever he wants to go. I don't need him. My mother is there to be with me."*

There were women who got every possible help from their husband and some received only financial assistance. Most of the women interviewed reported that their husband were supportive. Women commonly reported that they received help in household chores in the form of carrying water to bathroom, cooking, making bed in the morning and drying clothes. Some rare responses included washing clothes, utensils and sweeping the floor. Among women who did not receive any help from their husband, there were some who were staying in a joint family and received help from mother in law or sister in law. One of the women looked shocked when the question was asked, she said, *"He helps me financially and that is enough."*

Husband: Husbands also said that they wanted to provide mental strength and confidence to the woman to bear pain and stay strong. They showed understanding by saying, *"Wife will get more courage and strength to bear the pain."*

Among the husbands who reported that they help their wife during pregnancy, some very common responses were cooking, bringing water, cutting vegetables and lifting anything heavy. Some rare responses like sweeping, washing clothes were also given. One of the

husbands's who does not believe in helping his wife much during pregnancy said, *"I tell her to do things on her own. But if anything is left undone I will come home and try to do it. But I encourage her to do as much as possible."*

Service Providers: Another service provider said that she had prior interest in this concept and had studied a lot about it. She said, *"Husband will be able to feel what a wife undergoes to deliver a baby. Secondly it helps to reduce the intensity of pain. Then this will work in an active way in spacing as the husband will see it is this painful and he might consider spacing or limiting methods of family planning. Then the joy of childbirth will be shared by both the parents. In any problem he will be able to identify and act as a support person. In case an emergency arises he will be helpful in taking important decision."* They also mentioned that it helps by reducing the intensity of pain.

They believed that it works a big way by increasing the understanding between the couple. These women might get more support from their husband in future. One of the respondents said, *"Husband will see how much pain a woman undergoes he might consider spacing or limiting methods of family planning. He might not go to other women in future and be loyal to his wife."* A nursing personnel from the government hospital said, *"The woman in labor will get mental support and will feel more encouraged to go through the pain and the joy of childbirth will be shared by both the parents."* They also perceived that the couple will be more satisfied with the delivery if birth companion is allowed. A doctor said, *"Husband will be able to convince his wife in difficult situations and also in case of emergency arises he will be able to take necessary decisions understanding the situation."* He enthusiastically added, *"Mother will be more relaxed and in a better condition and will have more steady recovery. The baby*

will be able to see both parents from the beginning.”

A doctor from the government hospital agreed with the practice of husband as the birth companion. He says, *“There might be lesser domestic violence after the husband witness the pain of their wife themselves.”*

Culture

Pregnant women: *“After delivery people in the society will pass comments that he stayed with me in that situation. I don’t want to hear that.”* added by a very young respondent, 17 years old, who came for ante-natal check up at the government hospital.

Husband: Not wanting or wanting to be a birth companion came from different reasons like the societal and cultural norms, family pressure and their bitter experiences in the past. A respondent said, *“My family will mind. Our cultural values and principles do not allow that. I don’t think men should stay in that position.”*

Learning opportunity

Pregnant women: One of the pregnant women said, *“It will be a great experience for the father.”* They believed that husbands have always been outside the room in this situation and they do not understand how much pain a woman bears during delivery. They have a very rosy picture painted in front of their eyes as they see a screaming woman going inside and a service provider bringing the baby to show.

Husband: Some of the husbands also said that they are never allowed inside the labor room. They are curious to know what happens inside and that they will learn a lot given an opportunity to be a birth companion.

Service providers: Some service providers did mention that it will be a great learning

opportunity for husbands and it is important for them to this part of their lives.

Management

Service Providers: One of the doctors to says, *“It’s difficult to practice this keeping in mind the present strength of manpower and the population of our country.”*

Sister in-charge of labor room said, *“We will be able to manage labor properly as there will be better patient cooperation.”* A doctor from the government hospital added, *“The misconception about the mismanagement will go away from the minds of patients and their family members.”*

When asked about encouraging husbands to accompany during antenatal visits service providers reported that they encouraged family members to come. One of them said, *“In our hospital we have special parenting classes for the parent to be.”* Another respondent from government hospital said, *“It’s important that the husbands accompany their wife as sometimes it affects more when they hear it coming straight from the horse’s mouth. Mothers are dying in our country owing to anemia. People might feed them better when they hear it from us.”*

As the private hospital selected was already allowing Birth companion, the responses of service providers came from their experience. The advantaged and disadvantages that they listed came directly from their experience and practice. While telling the disadvantages one of them said, *“When dealing with preterm baby and other complicated cases it’s always better to keep the husband outside. It avoids them from getting anxious. I dislike the habit of video recording the delivery which husbands often do. What is so good about recording your wife when she is screaming with pain? We don’t usually allow it but they insist.”*

Discussion

The perception of pregnant women was largely based on the love and support they received from their husband. When a woman found their husband supportive during pregnancy they expected them to be a birth companion and vice versa.

Some very striking findings have come out which were not seen in the review of literature. Service providers connected this practice to reduction of domestic violence. Also at places where it was already practiced, maintaining privacy of the clients was surely not an issue but in the government hospital taken in the study, it is definitely a big gap. Health education involving the family member is important to make sure they are taken care of, some respondents also said there are issues with the behavior of service providers which acted as a motivating factor for the pregnant women and their husbands to want to have birth companion. Hopefully the presence of the birth companion would deter the ill treatment. Even the service providers on the same issues wanted to allow birth companion in order for the whole process to be transparent.

The service providers generally accepted that allowing husband as a birth companion was a good practice. Almost all the service providers interviewed from the government hospital agreed it's difficult to take place due to managerial issues like challenging doctor patient and nurse patient ratio.

Managerial lacunae's like lack of material, manpower and time were important findings. . On one hand the good practice of allowing husbands as birth companions was happening in some hospitals, but this was not practiced in most other hospitals due to poor communication and sharing of good practices.

It was good to find that the private hospital was

already allowing the birth companion for so long. It was also found that this hospital conducts special parenting classes for the parents to be. Husbands are encouraged to accompany to the antenatal visits but in the government hospital he is not allowed inside the doctor's chamber during advice and examination due to privacy issues. This was not an issue at the private hospital; in fact they also allowed husbands during USG.

Birth companion is also being seen as an opportunity to reinforce and encourage contraception, which again is an important finding. It may influence couples to consider the spacing and limiting methods of family planning. They even connected it to maternal mortality as there are chances of reduction in anemia with increase involvement of husbands in maternal care and thus reduction in maternal mortality.

There is a need to study the perceptions of women quantitatively also and understand what proportion of women want their husbands as birth companions and what proportion don't. The attitudes of providers should also be documented in future studies quantitatively. With the increasing focus on improving maternal health and improving the maternal health delivery services, this topic gains importance.

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A study on Assessment of psychosocial wellbeing status among the orphans in the city of Chennai

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Abstract

Background:Orphans are the most vulnerable group of children. Globally their number is estimated to be as high as 210 million. In India, it is likely that this number is about 31 million. Though the basic needs of some of these children are fulfilled, their most important felt need which is psychosocial support is often left unaddressed. **Objective:**This study is done to compare the psychosocial wellbeing status among orphan boys and girls living in institutions in Chennai. **Methodology:** This cross sectional study of about 120 orphan children aged between 12 to 17 years assessed their psychosocial wellbeing using standardized scales. Linear models were used to compare orphan boys and girls followed by factor analysis to group the variables. Qualitative techniques were used to capture the emotional consequences. **Findings:** Psychosocial well being status was found to be comparable between orphan boys and girls. It was evident that the emotional consequences faced by both boys and girls were equally high and the social consequences were more evident in orphan girls. **Conclusion:** There is a need for gender specific interventions for improving the psychosocial wellbeing and emotional health of orphan children living in institutions.

Key words; orphans, psychosocial wellbeing, emotional, social consequences

Introduction

Orphans or socially challenged children are the most vulnerable group in the society. Orphan has been defined as a child who has lost one or both parents. The terminology of a 'single orphan' refers to the loss of one parent and a 'double orphan' refers to the loss of both parents (UNICEF).

It has been estimated that around 210,000,000 children have lost at least one parent worldwide. (1) According to UNICEF, there are about 31 million orphans in India (2009 estimate).

A study shows that the orphan children who had higher scores for internalizing problems suffered various consequences which included suicidal thoughts, mitigation practices etc.(2)

The basic human rights of the orphan children are violated or severely threatened. Though the basic needs such as food, security, etc has been fulfilled for many who reside in the institutions, the most important felt need which is the psychosocial support is still lacking.

A study which was done in London found that orphan children who are placed in institutions suffer from various negative emotional consequences when compared to the orphan children who are adopted or returned to their birth families.(3)

A meta-analysis of 42 studies which was conducted in 19 countries found that there is a significant difference in the IQ levels between institutional based orphan children and those who are in family settings and that these

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outcomes and consequences are either directly or indirectly attributed to the psychosocial wellbeing of those children.(4)

The term psychosocial wellbeing has come to be preferred to narrower concepts such as mental health by humanitarian agencies to the extent that it “points explicitly to social and cultural (as well as psychological) influences on well being process of engagement of the external community with the affected community as well as of the affected community with prevailing events and conditions”. (5)

Since the term psychosocial wellbeing is found to be a broader concept four important domains have been used in this study for the assessment of psychosocial wellbeing. These include 1.satisfaction of life 2.personal growth initiative 3.subjective happiness 4. Self esteem

Generally, the trauma and grief that orphan children experience from the death of their parents may manifest internally which leads to various emotional consequences including depression, anxiety, loneliness etc. it was shown in a study that 73.3% of orphaned children has been suffering from various emotional disturbances in Africa.(6)

It is well known that psychosocial wellbeing and emotional health is very poor among orphans in institutional settings. This study was done to compare the psychosocial wellbeing and emotional and social health of orphan boys and girls living in institutional settings.

Methodology

A cross sectional analytical study was done in which two groups namely, orphan boys and orphan girls were compared. Multistage sampling methodology was employed to identify a sample of 120 institutional based orphans. Initially, comprehensive listing of

institutions in and around the city of Chennai was done. Each institution was defined as a cluster and six clusters were selected by simple random sampling. Subsequently from the list of all children in the age group of 12 to 17 residing at these institutions, 20 children per institution were selected by simple random sampling after stratification for gender.

The survey instrument used is the questionnaire included personal details, followed by the standardized scales used for each individual domains of this study which includes satisfaction of life scale which is a 7 point Likert scale containing 6 items, personal growth initiative scale contains 11 items, subjective happiness scale containing 12 items and self esteem scale which is a 3 point Likert scale.

Details on emotional and social consequences faced by these children were collected by in-depth interview done with the children with consent of the respective authorities of the institution and the assent of the children.

Results and analysis

The total sample was 120 orphan children, out of which 18 participants did not fulfill the criteria for participation and thus not included. The background characteristics of the respondents are given in Table 1.

Table 1 (background characteristics of the respondents)

| | Characteristics | Percentage |
|---------------------------------|------------------|------------|
| 1. Age | 12-14 years | 61.8% |
| | 15-17 years | 38.2% |
| 2. Educa-tion | Middle school | 32.4% |
| | High school | 55.9% |
| 3. status | Higher secondary | 11.8% |
| 4. Dura-tion of stay | < 3 years | 55.9% |
| | 4-6 years | 35.3% |
| | >7 years | 8.8% |
| 5. Grade at-tained in the class | Grade A | 49% |
| | Grade B | 36.3% |
| | Grade C | 14.7% |

About 62% of the children were in the 12 to 14 years age group and 56% were residing in the institution for less than 3 years. Fifty percent of the children had attained grade A in their class, which was the highest grade.

Table 2 shows the comparison of boys and girls with respect to the four domains of psychosocial wellbeing. The scores of the study variables indicate that boys and girls are comparable in all the domains with no statistically significant difference.

Table 2 Comparison of boys and girls in the psychosocial wellbeing scale

| Domains of psychosocial wellbeing | Mean score among boys(SD) | Mean score among girls(SD) | P values |
|-----------------------------------|---------------------------|----------------------------|----------|
| Satisfaction of life | 27.87(3.830) | 27.55(4.653) | 0.247 |
| Personal growth initiative | 47.44(8.161) | 44.43(7.624) | 0.577 |
| Subjective happiness | 39.62(3.488) | 40.55(4.076) | 0.335 |
| Self esteem | | | |

Factor analysis was done separately for the boys and girls to find out whether, there is any dependent structure existing among the psychosocial variables used in this study. Principal factor analysis with varimax was performed. In the case of boys, four variables formed into three factors namely, Factor 1, personal growth initiative, followed by Factor 2 which is a contrast factor, contrasting between subjective happiness and self esteem, and finally, Factor 3 satisfaction of life.

In case of girls, subjective happiness and satisfaction of life were highly loaded in the 1st factor, indicating both were correlated with each other following, self esteem and personal

growth initiative as factor 2 and 3 respectively.

Table 3 Factor analysis of variables of the psychosocial wellbeing scale in orphan boys and girls

| Gender | Domains | Relation |
|--------|--|-----------------------|
| Boys | Factor 1 – personal growth initiative | |
| | Factor 2 – subjective happiness and self esteem | (Contrasting factor) |
| | Factor 3 – satisfaction of life | Negatively correlated |
| Girls | Factor 1 – satisfaction of life and subjective happiness | |
| | Factor 2 – self esteem | Positively correlated |
| | Factor 3 – personal growth initiative | |

The next component of the study was the qualitative part. It was found that around half of the (48.07%) boys were facing emotional consequences in the form of loneliness and more than half (56 %) of the girls were facing the consequences in the form of depression/ crying. In coping mechanism, (44%) of boys reported that playing with friends was their coping mechanism and (44%) girls felt that talking/sharing with friends will make them better. Around (73%) of boys said that they don't have problems while facing others as compared to (36%) of the girls. Nearly 24% of the girls said that they hate others in general and about (80%) of both boys and girls said that they don't have problems in peer interaction.

Discussion

Psychosocial wellbeing was found to be comparable between orphan boys and girls in all the respective domains. It was found that subjective happiness and the level of satisfaction of life are found to be similar for both orphan

boys and girls, which is supported by a previous study, which have reported no sex differences in life improvement and satisfaction of life.(7) Likewise, personal growth initiative and self esteem are also comparable for both of them.

The results of this study was found to be consistent with the previous study showing increased psychosocial distress among orphans, which has also shown that girls have high psychosocial distress when compared to boys, but this study have failed to show the difference since there is no significant variations among the gender.(8) The failure to demonstrate the gender difference in psychosocial wellbeing could be because of various reason. One possible reason could be because boys are better cared for in the Indian society and the girls have greater emotional resilience and better coping mechanisms, which counterbalance each other's effect. It is also evidence from the factor analysis of the variables used for assessing the psychosocial wellbeing that the grouping was different between boys and girls. Therefore the failure of the instrument to capture the differing dynamics of psychosocial wellbeing between the genders could be a potential reason.

According to a study done by Wild et al, there would be low level of self esteem among the orphan children without any gender differences, thus supporting the findings of this study, which has been contrasting with the results of another study, which has reported higher levels of self esteem among girls. (9,10)

Nyangara et al, have found that the well being and welfare of the orphan children have been greatly affected by the environment which they live which supports the findings of this study since, it shows high emotional levels among the orphans for both boys and girls, which may be likely due to the poorer conditions of the institutions. Though this is in contrast to a

previous study which showed that institutional residence did not significantly impact the quality of life of orphan children, it cannot be extrapolated to all settings and hence the disparity in the findings. (11,12)

Results of the study done previously have shown that children orphaned , have reported lower level of self esteem when compared to non orphans where they have used standardized questionnaires with orphans(n=80) and both other orphans and the non orphans control groups(13). In yet another study using standardized questionnaires (Beck youth inventory) with 115 orphaned and 110 non orphaned children the author have also reported higher levels of stress, anxiety and depression among orphans when compared to controls. Since this study did not have a control arm of non-orphaned children or non -institutionalized orphan children such conclusions could not be made. But it is likely that the psychosocial quality of life is poorer among the institutionalized orphan children given the heavy emotional and psychological consequences observed among the children in the qualitative component of this study.

Though the previous studies have shown differences in the wellbeing of orphan boys and girls, this study failed to show such a difference.

Principal factor analysis was performed to describe the variability among the observed study variables contributing to the psychosocial wellbeing status as a whole. The results have showed that for orphan boys the major factor contributing to the psychosocial wellbeing was found to be the personal growth initiative. The second factor, which was a contrasting one, subjective happiness and self esteem had negative loading among them. This indicates the response that higher the self esteem of the boys lower the happiness and satisfaction levels.

This is a bit contrary to expectation. In general, high self esteem leads to better happiness and satisfaction. The possible reason for this contradiction can be explained by the fact that boys who had a higher self esteem probably were inflexible in their stands and in the absence of a loving and nurturing environment this led to struggle for daily living, thus leading to unhappiness. Third factor was found to be the satisfaction of life which contributes least variation.

Likewise, for orphan girls, the major factor was satisfaction of life and subjective happiness which are loaded positively. It clearly shows that these two variables are interrelated, once the level of satisfaction was good, it will have a direct effect over the happiness of an individual thus falling in same the factor. The next factor was the self esteem, and the least contributing factor was the personal growth initiative. This difference between boys and girls in the responses to the questionnaire clearly denotes that gender sensitive assessment of psychosocial wellbeing is essential.

The second component of the study was the qualitative research which was carried out to assess the various consequences both emotional and social faced by both orphan boys and orphan girls.

According to one study, it was clearly reported that the orphans are more likely to undergo depression and its outcomes which have supported the findings of this study showing greater percentage of depression and stress among orphans. (14)

Conclusion

By taking all the factors into consideration, it was very clearly found in this study that the psychosocial wellbeing status has been comparable among orphan boys and girls.

Several emotional and social consequences were also found for both boys and girls which is an alarming situation since it has a significant effect over the mental health and development of these children. There is a need of developing psychosocial support programs which basically includes, counseling, mentoring, formation of child friendly clubs, social support interventions etc which will have a greater impact of the mental and emotional development of the child. There is also a need to tailor these support programs based on gender differences. Further research and assessments of psychosocial wellbeing among children need to consider gender differentials strongly.

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Assessment of Road Traffic Accidents on Old Mahabalipuram Road

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Abstract

Background: India leads other countries with highest number of victims of Road Traffic Accidents (RTAs). Old Mahabalipuram Road (OMR) one of the busiest roads in Chennai, had the 3rd highest number of accidents in Chennai in 2010. **Objectives:** 1) To assess the road traffic accidents on Old Mahabalipuram Road (OMR) in the years 2007-2010, 2) To study the injury statistics of road accidents on OMR 3) To study the patterns of road accidents on OMR- most common time of accidents, vehicle involved, cause of fatal accidents, type of victim and spots of accidents. **Methods:** Quantitative, descriptive secondary data analysis. Data was collected from Chennai Traffic Police and analyzed. **Results:** The fatal accidents have reduced while minor injuries have sharply increased to 82% in 2010 from 65% in 2007. Clustering of accidents (35%) has reportedly taken place between 6 p.m. and midnight. Also, 9 a.m. to 10 a.m. seemed to be a common time of accidents, consistently over the last 3 years. Cars were the commonly involved vehicle in accidents accounting for up to 34% of all accidents. The most common cause of fatal accidents was found to be careless driving for the years 2008-2010 contributing 58% of the fatalities. As to type of victims, in 2007 and 2008, 2-wheeler riders were the most victimised with 48 and 74 persons respectively. In 2009 and 2010 though the number of 2 wheeler rider victims was 77 victims each year. More pedestrians were involved in accidents than any other type of victim, with 79 and 84 victims respectively. About 27% of the RTAs in OMR occurred in the stretch of Madhya Kailash-Taramani-Thiruvanmiyur. The common danger spots identified were Tidel Park, Lifeline hospital and Sathyabama/St.Joseph College. **Conclusion:** The facts depict that the OMR seems to be accident prone at busy hours, especially at the major junctions. Two-wheeler riders and pedestrians are more vulnerable to accidents and the stretch of Madhya Kailash-Taramani is most accident-prone, especially around the major junctions. A few interventions can reduce the prevalence of accidents in OMR.

Introduction

Road Traffic Accidents (RTA) is a major public health issue that is often neglected. Prevention of RTA is gaining importance in the last two decades due to the increasing number of accidents on roads claiming more lives each year. Rapid increase in population and urbanising developments throughout the world has resulted in a large number of vehicles on road and thus a large number of people prone to road accidents.

According to WHO's first ever *Global Status Report on Road Safety, 2009* over 1.2 million people die each year due to accidents and between 20-50 million suffer non-fatal injuries.

On an average 3288 persons die each day due to RTA around the world. (1) Over 90% of the world's accident victims are from low income and middle income countries which have only 48% of the world's vehicles. (1) Approximately 850,000 deaths occur in those who are under 45 yrs of age in developing countries and are the sole-bread winners of the family, hence increasing the financial burden of those families. (1)

WHO's report also revealed that more people die in road accidents in India than anywhere else in the world. Around 300 Indians die on roads every day with over 130,000 deaths annually. According to National Crime Records Bureau (NCRB) 2008, at least 13 deaths occur in every hour as a result of RTAs. (2)

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Tamil Nadu, in turn, accounts for the largest number of Road Accidents among the states of India. According to NCRB 2008, Tamil Nadu recorded 60,409 accidents and 12,784 deaths in 2008.(2) Chennai-ranked third in India for fatal accidents, with a recorded 629 deaths and 4971 injuries in 2008, and 621 deaths and 5025 victims in 2010 (Source: Chennai Traffic Police)

In the year 2010, the most dangerous roads in Chennai were mentioned as: Anna Salai- 50 deaths, 248 injured, East Coast Road- 46 deaths, 150 injured and Old Mahabalipuram Road- 41 deaths, 188 injured (Source: Chennai Traffic Police)

This research was taken up to study the profile of road traffic accidents in Old Mahabalipuram Road now known as Rajiv Gandhi Salai, a major road in suburban Chennai between the years 2007 and 2010. OMR has numerous Information Technology (IT) parks (housing hundreds of IT companies), more than 40 colleges and a number of gated communities (townships), housing a huge population, majorly work-related. An observed increase in the vehicular traffic and increased population reaching various destinations on OMR, have increased the road accidents taking place there.

Methodology

This is a descriptive secondary data analysis of road accidents in OMR. The quantitative data of all reported accidents between 2007 and 2010 were obtained from Chennai Traffic Police. The study includes Road Traffic Accidents taken place on Old Mahabalipuram Road considering the accidents taken place only in the areas of OMR under Chennai city limits, i.e., from Madhya Kailash to Semmencherry only, covering about 15 km. The statistics of RTAs were analyzed according to the research questions using appropriate statistical packages.

Results:

Number of road accidents

In the year 2007, the number of accidents reported was 86, but in the year 2008, the number rose to 249. In 2009, 217 accidents were reported and in 2010, the number was 214.

Injuries due to the accidents

In 2007, 33 (38.3%) of the reported accidents were fatal, 10 (11.6%) of them were grievous injuries, 41 (47.7%) were minor injuries and 2.83% did not involve any injury. The fatal injury proportion decreased negligibly over the next three years to 20.9%, 20.2% and 18.6%. But the minor injury trend increased over the years to 53% (41), 59.4% (129) and 67.2% (144) respectively in the years 2008, 2009 and 2010.

Injuries and fatalities due to road accidents

Table 1: Number of victims of accidents in OMR in the years 2007-10

| | 2007 (100) | 2008 (213) | 2009 (228) | 2010 (229) |
|-----------------------|---------------|----------------|----------------|----------------|
| No Of Fatal Victims | 35 (35%) | 53 (24.9%) | 45 (19.7%) | 41 (17.9%) |
| No Of Injured Victims | 65 (65%) | 160 (75.1%) | 183 (80.3%) | 188 (82.1%) |

In 2007 while 35% of the accidents were minor accidents, it increased to 82.1% in 2010, as the fatal accident rate decreased as shown in Table 1.

Accident timings

Most common time when the accidents took place were in the 6 hour span of 6 p.m. to 12 midnight, each year contributing on an average about 35% of all the accidents as depicted in Figure 1.

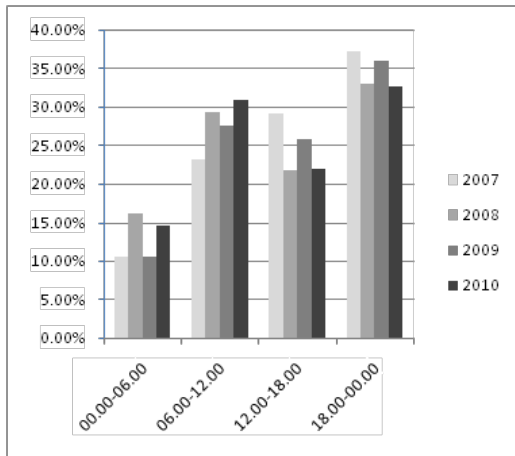


Figure 1: Frequency of accidents with the time of occurrence

Figure 1: It is seen that the accidents peaked between 6 PM to 12 midnight. There is also an observed increase in accidents between 6AM to 12 noon.

Type of vehicles

When analyzed as to which vehicles were most involved in RTAs of OMR, it was found out that car was involved in maximum number of accident- 27 (31.4%), 98 (39.3%), 83 (38.2%) and 59 (27.6%) accidents in the years 2007, 2008, 2009 and 2010 respectively. And in 2010, 2-wheelers were also on par with cars with 60 (28%) RTAs.

Cause of Fatal Accidents

In 2007, over speeding caused 57% of fatal accidents, where as in the next three years 'careless driving' was the most common cause contributing 68%, 59% and 45% of accidents to the fatalities of 2008, 2009 and 2010 respectively. However over speeding continued to be the second common cause in these 3 latter years.

Type of victims

In the year 2007 and 2008, 2-wheeler riders were the most common victims with the figure showing 48 (48%) and 74 (35%) respectively. The numbers continued to be constant with 77 (34%) accidents involving 2-wheeler riders each in 2009 and 2010. However, in 2009 and 2010, pedestrians were the most victimised with 79 (35%) and 87 (38%) accidents respectively, involving them.

Danger Spots of accidents

In the considered four years 2007-2010, in the 8 areas included in the study area of 15km stretch, 27% (185) accidents took place in Madhya Kailash-Taramani-Thiruvanmiyur. It houses the famous Tidel Park where more than 12,000 software professionals are employed and hence the traffic reaching Tidel Park is enormous. This could be a main reason for the increased accidents in that area. Shozhinganallur follows it with 15.3% (105) accidents. Okkiyampettai/ Thoraipakkam, Semmencherry and Perungudi have almost same figures of accidents occurring in those areas, 87, 84 and 83 respectively with an average of 12% contribution each.

Most common danger spots

1. 28% of all accidents (2007-10) in Madhya Kailash/ Taramani/ Thiruvanmiyur (51/185) took place near Tidel Park.
2. 30% of all accidents (2007-10) in Perungudi (22/73) occurred near Lifeline Hospital.
3. 22% of all accidents (2007-10) in Semmencherry (19/84) were near Sathyabama /St.Joseph College

Figure 2: Map depicting the OMR and the danger spots for accidents.



Discussion

Old Mahabalipuram Road is one of the busiest roads stretching long from the city that has a huge work-related population owing to the hundreds of Information Technology Companies, most of them being multinational. The road also houses about 40 colleges, which further increases the population heading towards the road and thereby increasing the vehicular traffic.

The key findings include the observation of gradual decrease in the fatal accidents while the minor accidents rate has gone up to 67.2%. A study in Patna showed that fatal accidents from the year 1996-2000 had increased by 37% and the non-fatal injurious accidents had reduced by 34%. (3) This trend is reverse in the OMR study, where it is seen that fatal ones have reduced in the last four years in contrast with the increasing minor injury accidents. This difference might be attributed to the improved road conditions at OMR, traffic arrangements, better lighting of the road or the general improvement in attitude of the riders.

The accident timings noted over last 4 years gives a conspicuous view over the risks of accidents in the evening and night, as 35% of accidents has occurred only at the busy hours of 6pm to midnight. Also the morning hours of 8-10 am have been a constant in all the four years in demonstrating high number of accidents. This can be attributed to the high magnitude of work population reaching the destinations on OMR around that time.

The study in Patna indicated that 70% accidents took place in daytime while only 30% in the night. (3) According to a study in western Nepal maximum number of accidents occurred in between 3 and 7 p.m. i.e. 159 (44.16%) followed by 87 (24.16%) between 7 and 11 a.m. (4)

The study also shows how vulnerable the pedestrians and 2-wheeler riders are, succumbing to accidents and contributing together 66%, 64.3%, 67.2%, 71.6% of victims for the years 2007, 2008, 2009 and 2010 respectively.

While safety for 2-wheeler riders by wearing a helmet and 4-wheeler riders by wearing seatbelt has been a matter of concern for long, the 'vulnerable road users' - the pedestrians, have been neglected. Not many strategies or programmes have been developed for pedestrians and cyclists. In developed Western countries, it is an issue of concern and pedestrian safety is given prime importance. In United States following 4,378 pedestrians deaths and 69,000 injuries due to road crashes in 2008 (an average of a pedestrian death every 2 hours, an injury in every 8 minutes), there arose a need to introduce Pedestrian safety programs. The National Highway Traffic Safety Administration addressed the problem through education, enforcement and outreach. In Washington, the Federal Highway Administration planned a 15-year program (that was completed in

October 2010) for pedestrian safety research and technology transfer to address pedestrian safety concerns and facilitate professionals with proper knowledge, resources, and information needed to identify problems and implement solutions related to the roadway environment.

In India, the issue of Pedestrian Safety was addressed in a conference by the Institute of Road Safety Education in 2001 with the strategies emphasizing on Engineering design and provision of pedestrian facilities, pedestrian behaviour, education and enforcement, and policies & planning for pedestrians. But still the roads in India do not prove to be pedestrian-friendly, as not many roads possess footpaths, pedestrian crossings and over bridges. Even if they are present, there is a poor level of utilization by the people and it is not uncommon in a city like Chennai to see pedestrians jumping over medians to cross the roads.

Looking into the causes of fatal accidents, careless driving and over speeding are issues to be addressed, as they together sum up to 62.5%, 82%, 72% and 70% fatal accidents in the years 2007-10 in sequence. Yet another study from central India saw that sideways collision of two vehicles was the most common type of all accidents seen in the study being observed in 269 (63.59%) cases whereas in this study of OMR, it was careless driving that resulted in more of fatal accidents. (5) The same study from central India analyzed that two wheelers and light motor vehicles were the common vehicle being involved in accidents (69.97%). In OMR, cars were the most involved in road accidents each year. The study from JIPMER, Pondicherry identified that 24.4% accident cases reported were involving 2-wheelers.

Though drunken driving has not been considered as separate criteria for reporting of accident causes, it may be speculated that some of the

reckless driving cases can be attributed to it. Though various legislative measures have been taken to reduce drunken driving cases and lot of advocacy has been done against it, it is still not been effectively curbed.

The magnitude of all the variables analysed implies the need to emphasize on road safety. The hours when accidents are more frequent are to be given special attention. Proper functioning of traffic signals and more regulation of traffic-by increasing the patrol (traffic police) and introducing speed limits is important. We find that 2 wheeler riders are the most common victims. Checking to make sure of helmet use and safe driving following the traffic rules can ensure reduction in the number of 2 wheeler rider victims. In the last 2 yrs, a large number of pedestrians have been victimized by accidents and it can be reduced by increased utility of pedestrian crossing, building higher medians/ barriers or introducing over-head pedestrian bridges like the Mumbai skywalk project to connect the commuters to various destinations on unsafe roads. The major limitation of the study is that this was based only on the reported cases and hence may not represent the true picture, as not all the accident cases are filed and documented. This scenario is mostly in the case of minor accidents or no-injury involved accident where the victims may not feel the need to report it.

The study helps to comprehend the patterns of accidents in OMR, which will guide the authorities to take necessary steps to prevent the accidents accordingly. Also further studies can be carried out in detail about gender aspects of accidents, educational, occupational levels and other determinants of the victims, and rate of drunken driving on road, which may directly be a determinant to the accidents.

Conclusion

This study depicts a brief scenario of accidents in OMR, which portrays the various aspects of accidents happening there. Some facts like most of the accidents taking place at busy hours of morning and evening, two-wheeler riders and pedestrians being more vulnerable to accidents, identifying the stretch of Madhya Kailash to Taramani as more accident-prone are hard to ignore.

However it gives rise to a few recommendations purely based on the facts available and represented here in the study:

- 1) The identified spots prone to accidents are to be checked for installation of signals/speed breakers
- 2) The identified dangerous stretches are to be patrolled for control over accidents taking place
- 3) Ensuring strong legal punishments for over speeding, drunken driving and negligent driving must be taken care of to curb the menace, which can ultimately serve a lot of lives.
- 4) Safe driving should be emphasized for 2-wheeler making strict legislations for helmet use and introduction of medians, use of subways and over bridges, to avoid passengers crossing the road unsafely.
- 5) More patrolling and traffic regulations, channelizing of traffic is needed to reduce the number of accidents taking place at busy peak hours of the day.
- 6) Small and strict steps can reduce the

occurrence of accidents and bring down the incidence.

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Knowledge about cervical cancer among women visiting a family planning and antenatal care centre in Bhutan

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Abstract

Background: Cervical Cancer (CC) is one of the preventable cancers yet it remains the world's second leading cancer among women. Despite being a preventable disease, CC claims the lives of almost half a million women worldwide each year. As per the WHO-2006, CC is the leading cause of cancer related mortality among women in Bhutan, the second most common cancer after stomach cancer. **Objective:** The primary purpose of this study was to assess the knowledge of cervical cancer among women. **Methods:** A descriptive cross sectional, in depth interview based survey was conducted in June 2011. Systematic random sampling was applied to obtain a sample size of 165. Binomial analysis was conducted to identify factors associated with the knowledge of CC. **Results:** The overall knowledge of cervical cancer including the knowledge of risk factors, symptoms, prevention, pap smears and the HPV vaccination was very low. The partial knowledge was high (87%) compared to no knowledge in 13%. About 75% of the women did not have knowledge about risk factors and 87% did not have knowledge about the symptoms of cervical cancer. Despite the government's active efforts to increase health education on Pap smear and HPV vaccine, the knowledge levels are very low. Illiteracy is positively associated with the knowledge of CC in multivariate regression analysis. **Conclusion** This study serves to highlight that majority of women are not adequately equipped with knowledge concerning about the cervical cancer in Bhutan. Women need to be educated about the importance of the risk factors, symptoms, prevention, Pap smear as well as HPV vaccination.

Introduction

In Bhutan, cervical cancer is the leading malignancy diagnosed among women. The peak incidence is between 40-49 years in the country. Most are diagnosed in later stage, 50% or more in stage III and above, leading to high mortality.

More than half of cervical cancers are diagnosed in the late stages, leading to high mortality. Since radiation, which is the main stay of treatment, is not available in Bhutan, patients have to be referred outside. This is a great economic burden on the government and families. Cervical cancer is a disease that develops slowly and can easily be detected by screening. Effective treatment is also available for the pre invasive disease. Therefore all these sufferings and deaths due to cervical cancer can

be prevented if diagnosed early. But the uptake of screening procedures remains low.

Many women generally show lack of knowledge about cervical cancer screening such as Pap smear, Visual Inspection with Acetic Acid (VIA), and the need of early detection of cervical cancer. Many believe that the Pap smear was a diagnostic test for cervical cancer, and since they had no symptoms, they did not go for Pap screening. The other main reasons for not doing the screening include lack of awareness of indications for Pap smear, perceived low susceptibility to cervical cancer, and embarrassment. (1)

Pap smear has been offered in the country, as opportunistic/passive screening since 1980s, but it was done mostly in Thimphu (capital of Bhutan). Few women were repeatedly

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undergoing Pap smear while the majority who needed Pap smear never had one in their lifetime.

When the National Pap smear program was launched in October 1999, it was estimated that less than 5% of the women were getting Pap smear services. To increase the coverage and decrease loss to follow up, women between 30-45 years are also offered VIA as an alternative method of screening. Creating awareness among women is essential so that not only do they come for the Pap smear but seek care early when they develop the symptoms of cancer. In this context this study was done to assess the existing level of knowledge among women about cervical cancer.

Study area

The family planning centre and antenatal care centre in JDWNRH in Thimphu (Capital of Bhutan) was chosen for the study with the permission from the Ministry of Health, Medical Superintendent of JDWNRH and the head of the reproductive health unit.

Methods

Study Design: Cross Sectional descriptive in depth interview-based survey was conducted among women in JDWNR Hospital in Thimphu, Bhutan.

Study population

$$n \text{ minimum} = (Z\alpha/2)^2 P(1-P)/d^2$$

$$\text{where } (Z\alpha/2)^2 = 1.96^2$$

$p = 0.50$ (since the prevalence of the knowledge has not been previously documented)

$$d^2 = 0.08 \text{ (8\% absolute acceptable level of error)}$$

$$\text{Minimum} = (1.96)^2 \times 0.5 \times 0.5 / 0.08$$

$$150.0625$$

Assuming a non response rate of 10%, the requirement t sample size would be

$$150.065 \times 150.065 \times 10 / 100 = 165$$

Therefore a minimum of 165 respondents was the sample size for this study.

Sampling procedure

The number of women visiting family planning per day is around 70-80 per day and the number of women visiting antenatal care is around 60-70 per day as per the information from the staff on duty. Random start was picked, and subsequent respondents were selected systematically each day. In the case that a selected respondent declined the next respondent on the systematic random selection list was approached.

Data collection tools

Questionnaire was designed based on the study objectives, taking help from the previous literature and studies available on the topic added with content specific questions. The questionnaire was divided into 2 main parts, first dealing with the socio-demographic profile of the subjects such as age, education, occupation of respondent and second part consisted of the questions regarding the knowledge and prevention of cervical cancer. Closed ended question was asked about the prevention, risk factors, symptoms, pap smears and HPV vaccination.

Ethical Consideration

Ethical approval was taken from the ethical review committee. Respondents were provided full confidentiality. They were briefed that their participation is voluntary and they have full right to withdraw from the study at any point.

Results and Analysis

Majority of the women were from the age group of 18-25 years and the rest were in the age group of 26-45 years. Of the respondents 86.7% were followers of Buddhist religion. Among the participants 62.4% were housewife,

35.2% were working-women and 2.4% were farmers. Literacy rate was 62.4%. Among the women 57.3% were from the rural area. Of all the interviews conducted, 23% (n=38) of women had never heard of cervical cancer. This is shown in Table 1.

Table 1: Knowledge on cervical cancer

| | pre ven tion | symp toms | risk fac tors | pap smears | HPV vacci nation | Over all know ledge |
|-----|--------------------|--------------|---------------------|---------------|------------------------|------------------------------|
| No | 29% | 87% | 75% | 26% | 61% | 13% |
| Yes | 50% | 4% | 2.40% | 0% | 26% | 0% |

Knowledge about the symptoms of the cervical cancer

Out of 165 women, only 23 (13.9%) of them said they know the symptoms of cervical cancer and the results show that 87.3% have no knowledge, 9% could only answer few symptoms which was classified as partial knowledge and those who could answer all the symptoms were grouped as complete knowledge (3.6%).

Knowledge of the risk factors associated with cervical cancer

Out of 165 women, only 41 (24.8%) knew the risk factors. Among them most answered that sexual intercourse at an early age (75.6%), multiple sexual partners (92.7%), multiple sexual partners by husband (80.5%), STD (72.5%), and failure to use condoms (72.5%) as the common risk factor. This is depicted in Table 2. Overall the complete knowledge of risk factors was only 2.4% and no knowledge was 75.2%.

Table 2: Risk factors of cervical cancer

| | Variables | Number (n=41) | percen tage |
|----|--|------------------|----------------|
| 1 | Having sexual intercourse at an early age | 31 | 75.6% |
| 2 | Multiple sexual partners | 38 | 92.7% |
| 3 | Multiple sexual partners by husband | 33 | 80.5% |
| 4 | Smoking | 11 | 26.8% |
| 5 | Using birth controls pills for more than 5 years | 14 | 34.1% |
| 6 | HPV | 11 | 27.5% |
| 7 | Genetic | 18 | 46.2% |
| 8 | Having previous abnormal CC smear | 26 | 65% |
| 9 | After 45 years and more | 21 | 52.5% |
| 10 | Post menopause | 13 | 32.5% |
| 11 | STD | 29 | 72.5% |
| 12 | Parity | 21 | 52.5% |
| 13 | Failure to use condom | 29 | 72.5% |

Knowledge of the pap smears

Partial knowledge about the pap smears was 73.9%. This is shown in table 3. Among the 165 women, only 13 answered that they knew methods other than pap smears, but only colposcopy as the alternative screening test. They did not know about VIA.

Table 3: Knowledge on Pap smears

| | | Percentage |
|---|--------------------|------------|
| 1 | No knowledge | 26.1% |
| 2 | Partial knowledge | 73.9% |
| 3 | Complete knowledge | 0% |

Knowledge of HPV vaccination

Among the women 61.2% had no knowledge about HPV vaccine, 13.3% had partial knowledge and full knowledge was present among 25.5% as shown in table 4.

Table 4: Knowledge on HPV vaccination

| | | Percentage |
|---|--------------------|------------|
| 1 | No knowledge | 61.2% |
| 2 | Partial knowledge | 13.3% |
| 3 | Complete knowledge | 25.5% |

Factors predicting knowledge

The shows odds ratios of the predictors of knowledge about cervical cancer was performed with multivariate logistic regression analysis. The only significant factor was illiteracy which led to poor knowledge. This is shown in table 5. An illiterate woman is only 0.208 times likely to know the overall knowledge of CC compared to the literate women.

Table 5: Determinants of knowledge on cervical cancer

| FACTORS | EXP(B) | 95% C.I for EXP(B) | |
|---|-------------|--------------------|-------|
| | | Lower | Upper |
| Age group (younger age) | .671 | .246 | 1.828 |
| Education (illiteracy) | .208 | .071 | .608 |
| Husband occupation (husband lower occupation) | .633 | .126 | 3.194 |
| Constant | 9.533E9 | | |

Discussion

In the study, the knowledge on prevention, symptoms, risk factors, Pap smear and HPV vaccination are included as an overall knowledge of cervical cancer and from this, only 13% of women have overall knowledge. This emphasizes on the need to increase the awareness about cervical cancer. In the study, compared to knowledge of risk factors and symptoms, the knowledge on prevention is much better because the health education in Bhutan is more on prevention. The women were educated about the prevention of cervical cancer by encouraging them to come for the screening test. (2)

It was found that 137 (83%) respondent heard about the pap smear test. The awareness of CC and Pap smear is much better compared to the studies done elsewhere. (3)

Educated women were more likely to have a better knowledge of cervical cancer and were

more likely to gather new information by themselves or have a faster channel to reach up-to-date information.

If the knowledge on symptoms is good, women will be encouraged to go for screening early. If the knowledge of risk factors is good then early prevention can be done. The knowledge on Pap smear will influence the woman to come forward for the screening and the knowledge on HPV vaccination will encourage the girls to get the vaccination. (4)

In the study an illiterate woman is only 0.208 likely to know the overall knowledge of CC compare to the women who are educated. It has been shown that women are less likely to be screened when they do not understand what is being asked of them or do not recognize the importance of recommendations.

To address the lack of awareness and knowledge among providers, clients and the community at large, IEC materials about cervical cancer and its prevention should be developed and disseminated along with information for women over 18-35 years old on where and how to get. Simultaneously, interventions are needed to meet the demand by maximizing the capacity of existing technologies and resources with linkages to the primary community level. In particular, program planners should look at the possibility of providing counseling and screening for cervical cancer in the voluntary counseling and testing centers for HIV (VCT). Messages also should reflect the real concerns that women have about services, how communities view preventive care in general, and local understanding of screening procedures and of cancer.

Acknowledgment

I am very much thankful to my mentor for guiding me for my research topic and the analysis of the data. The gratitude also goes to the ministry

of health for giving me the permission for the study and the health staff who helped me for the data collection. I would like to thank the faculty members of school of public health for clearing my doubts as and when required. I am very grateful to all the women who agreed for the interview without any hesitation.

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Does Family Support Play a Role in Improving the Quality of Life of De-Addicted Alcohol Dependent Patients?

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Abstract

Background: Alcoholism is a progressive addictive disorder with a wide range of effects (physical health, socio-economic, psychological, familial, work related) and high relapse rates. Quality of life (QoL) is widely used for predicting outcome of diseases, choosing between treatment modalities and for monitoring the progress of a condition. **Objectives:** This study was done to assess the Quality of Life of people who are In Recovery after alcohol de-addiction (3-5 months of abstinence) and to find if any social –alcohol related variables, especially family support plays a role in influencing their Quality of Life. **Method:** A Descriptive cross-sectional study was conducted in Bangalore city, India during the month of June, 2011. Study population were males (n=103) between the age groups of 18-64yrs who had undergone alcohol de-addiction and were in recovery (3-5 months abstinent period). Social, demographical and alcohol related variables were determined and WHO QoL BREF questionnaire, English version was used. **Results:** Among the study respondents 37.9% were found to be unemployed and 31.1% of them misused alcohol for a period greater than 5 yrs. People with emotional support from family had higher mean QoL in physical health, psychological and social relationship domains. And people with financial support from family had increased mean QoL scores in psychological and social domains. **Conclusions:** Unemployment rates being high in these people show financial dependency. Family support (emotional and financial) has lead to better Quality of Life (QoL). The study recommends better understanding of the phenomena so that treatment approach and counsellings can be multi-dimensional involving all aspects of life for a positive holistic outcome and thus lower relapse rates.

Introduction

Alcoholism is a disabling, progressive addictive disorder having its negative effects on the drinker's health, relationships, and social standing. It's social and economic effects (like domestic violence, work absences etc) need a special mention, as, it not only affects those who drink but also those around them, and thus the society as a whole. Even studies have revealed the wide-ranging effects of alcohol use disorders and their treatment on the patient, family and society (1,2,3)

Public health concern-According to the National Household Survey in America on drug use 2001,

the prevalence rate of alcohol use is 21% among adult males. India being a country of wide variations alcoholism was found to be ranging from 7% in Gujarat (officially under prohibition) to around 75% in north eastern state of Arunachal Pradesh. (4) Alcohol causes 1.8 million deaths (3.2% of total) and a loss of 58.3 million (4% of total) of Disability-Adjusted Life Years (DALY). (5)

In India, it is estimated that around 1% of the population can be classified as being alcohol-dependent. This translates into about five million people dependent on alcohol.(6) Industry association sources estimate that 15% to 20% of absenteeism and 40% of accidents at work are due to alcohol.(7)

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The study by Wills et al found that protective factors like family emotional and instrumental support were related to lower level of substance use in adolescents. Also, certain components of social support had a influence to play on life stress and alcohol involvement of an individual. (8)

Some studies have shown that social support is a positive influence on health and health maintenance .These results suggest that specific sources (family and friends) and forms (reassurance of worth) of social support are important to the recovering alcoholic and that the effect of social support on treatment outcome is independent of the alcoholic's history of prior treatment failure. (9) Therefore not only support plays a role in preventing alcoholism but it also extends to help in treatment efficacy.

The alcohol de – addiction process, not only comprises of curative medical treatment but also many social, cultural, demographical, alcohol related factors play a wide role in determining the outcome of treatment. Importance of using quality of life as an outcome measure in research in persons with alcoholism has been emphasized. (10)

Supportive roles of family and society for positive outcome in alcohol dependents have been reported. (11,12,13) But in the study by Kar et al social support could not differentiate between positive or negative outcomes.

From all the above mentioned research and studies it has been established how important is family and social support during the period of alcohol abuse and treatment, but what is less known is the influence of these variables on a recovering person with alcoholism or those in

abstinence. The main objective of the current study is to determine the QoL (one of the predictors of outcome) of alcohol dependent patients who are In Recovery (3-5 months of abstinence) and to assess the role of family support in it.

Methodology

A Descriptive cross-sectional study was carried out in Bangalore city, India during the month of June-2011. The study population were males (n=103) between the age groups of 18-65yrs diagnosed with Alcohol Dependence Syndrome by ICD-10 or DSM-IV criteria. All the participants had undergone institutional care for a period of 3 months in a rehabilitation centre. These centers have provided them with de-addiction treatment with supportive medical care (detoxification) as required.. As 'In Recovery' term can be used for any period after treatment of the addiction, in order to reduce the role of other variables due to increasing duration, this study considers only those persons who were abstinent for 3-5 months. As a general exclusion criterion, persons who could not understand or read the questionnaires for intellectual or social-educational reasons were not included.

Tool - WHO Quality of life (QoL) BREF, An abbreviated version of the WHOQOL-100, English version was used to assess the quality of life. The WHO QOL-BREF contains a total of 26 questions, this includes two items the Overall quality of Life and General Health facet which are evaluated separately, and other 24 questions divided in to four domains namely- Physical Health, Psychological ,Social Relationships and environmental have been included. Domain scores are scaled in a positive direction (i.e. higher scores denote higher quality of life).

A due Informed Consent after explaining the details of the study, was taken from each of the respondents, after which, they were given the self administered questionnaire. The usual socio-demographic data collected were, age, marital status, employment status, family as financial and emotional support. Alcohol related variables like-, duration of alcohol misuse (<1, 1-5, >5 years), age of onset of initiating alcohol were also collected.

Statistical Analysis - QoL domain scores of each respondent were calculated, and transformed to get a new score out of 100 (according to WHO QoL BREF Manual). Mean scores(with S.D) of- a) overall general Quality of life; b)General health satisfaction; c)Physical health domain; d) psychological domain; c)Social relationships domain; and e)Environment domain , for the total sample population was calculated..

Results

Population description- The age of respondents was found ranging from 18-64yrs. 66.1% of them were found to be in the age group of <40yrs. Of the 103(n) subjects 38.8% were never married and 29.1% were found to be separated or divorced. About 38% of respondents were currently unemployed.

About 54% of the participants had misused alcohol for a period ranging 1-5yrs and 31.1% for a period greater than 5 yrs. Most common (45.6%) age of initiation of alcohol was between 18-25yrs followed by <18yrs with 36.9%. Around 68.9% of subjects gave history of use of a psychoactive substance (tobacco, marijuana, hash, cocaine etc), of which 66.01% were under the age of 40yrs. Out of the 103 participants 64 (62.1%) said that family gave them emotional support and 74.8% of respondents said that they received financial support from family. 16.4% of the respondents were found to be not living with family.

Quality of life- The mean scores obtained for the study population of 'Persons In Recovery' were:-Overall QoL -3.09(C.I-2.96 , 3.22), Range 1-4, and mode 3(Neither poor nor good); Overall satisfaction of Health -3.22(3.07,3.37), Range 2-5, and mode 3(Neither satisfied nor dissatisfied) ; Physical health domain-47.36 (45.2 , 49.52); Psychological domain-53.62 (51.46 , 55.78); Social relationships domain-47.24 (43.78 , 50.7); Environment domain-55.11 (52.73 , 57.49) with 95% Confidence Interval. This is described in Table 1.

Table 1:Mean QoL and domain scores(WHO QoL BREF) of the sample population

| | n | MEAN | 95% Confidence Interval |
|------------------------|-----|-------|-------------------------|
| Overall QoL | 103 | 3.09 | (2.958 , 3.22) |
| Satisfaction of health | 103 | 3.22 | (3.066 , 3.374) |
| Physical health domain | 103 | 47.36 | (45.2 , 49.52) |
| Psychological domain | 103 | 53.62 | (51.46 , 55.78) |
| Social relation domain | 103 | 47.24 | (43.78 , 50.7) |
| Environmental domain | 103 | 55.11 | (52.73 , 57.49) |

The mean score with confidence Interval for Overall QoL for unemployed was 2.97 (2.73 , 3.22) and that for employed was 3.16 (3.00 , 3.31). The two did not show any significant difference. Respondents with perceived emotional support from family differed significantly with those without emotional support in their mean domain scores compared using t-test at level of significance (α)-0.05. In No emotional support group the mean scores for Physical health domain- 43.62 (41.1, 46.12); Psychological domain- 50.70 (47.67, 53.72); Social relationship domain- 43.24 (37.67, 48.80) and for emotional support group they were: for Physical health domain -50.88 (47.67, 54.1); Psychological domain- 56.37 (53.43, 59.32); social relationship domain 51.01 (46.94, 55.08). This is depicted in Table 2.

Table 2: Emotional support from family and it's effect on Quality of life

| | QoL | Emotional support-NO | Emotional Support-YES | p value |
|--|----------------------|---------------------------------|---------------------------------|-------------|
| Mean scores (with C.I) | Physical domain | 43.62 (41.1 , 46.12) | 50.88 (47.67, 54.1) | 0.001 |
| | Psychological domain | 50.70 (47.67 , 53.72) | 56.37 (53.43 , 59.32) | 0.008 |
| | Social domain | 43.24 (37.67, 48.80) | 51.01 (46.94 , 55.08) | 0.025 |
| 95%Confidence interval | | n= 39 | n= 64 | Total n=103 |
| t-test for comparing means shows Significant difference in means of Physical, Psychological, Social domains of Quality of life in people with or without emotional support at $\alpha=0.05$ level | | | | |

Participants who said they did not receive financial support from family had mean scores of 49.80 (46.1, 53.49) for psychological domain and 37.69 (30.48, 46.73) for social relationship domain and those with financial support had mean scores of 54.90 (52.34, 57.47) and 50.47 (46.73, 54.20) respectively. This difference in mean scores was statistically significant at p being 0.04 and 0.001 respectively for the above at $\alpha=0.05$ level (95% confidence interval). This is depicted in Table 3.

Table3: Financial support from family and its effect on Quality of life

| | QoL | Financial support-NO | Financial support-YES | P value |
|--|------------------------|---------------------------------|---------------------------------|-------------|
| Mean scores (with C.I) | Psychological domain | 49.80 (46.1 , 53.49) | 54.90 (52.34 , 57.47) | 0.04 |
| | Social relation domain | 37.69 (30.48 , 46.73) | 50.47 (46.73 , 54,20) | 0.001 |
| 95%Confidence interval | | n= 26 | n= 77 | Total n=103 |
| t-test for comparing means shows Significant difference in means of Psychological, Social domains of Quality of life in people with or without financial support at $\alpha=0.05$ level | | | | |

Discussion

Very few studies have been dedicated to Quality of life in alcohol dependent patients , and much lesser have been conducted in people who have undergone rehabilitation.(14) Therefore this study was done to assess the quality of life in people who are in recovery after alcohol de-addiction (3-5 months of abstinence) and to find if any family related variables make any change in their quality of life.

According to this study the divorced/separated rates were 29.1% in the sample population and unemployment was found in 37.9% of the respondents. A previous study gave an unemployment rate of around 50% in alcohol dependents, all of the above highlights social, familial effects of alcohol. (15) This moderate difference in unemployment rates in the two studies can be due to the exclusion of persons who cannot read or write English. Around 29%(n=30) respondents were found to be not living with their families which were found to be same when compared to other studies which give a rate of 30%. (16)

Though other studies could bring out the role of alcohol related variables like early onset of initiation, period of misuse or severity of alcohol dependency on their life outcomes, this study could not find any such association between the variables and Quality of Life. (17,18,19) Therefore high unemployment rate , divorce rates compared to the general population only goes to suggest the implications of alcohol and the stigma attached to it in the society,

The results of a previous study showed that general norms for the WHOQOL-Bref domains were 73.5 (SD=18.1) for the Physical health domain, 70.6 (SD=14.0) for Psychological

wellbeing, 71.5 (SD=18.2) for Social relationships and 75.1 (13.0) for the Environment domain. (20) When compared to our study it can be seen that the QoL for people in recovery in all the domains was low. Yet it would be more appropriate if a control group from the same socio-demographic background be used in the study to bring out the significance of this difference in a more meaningful manner.

In this study the use of other psychoactive substances by the respondents did not have any effect on QoL and these findings are consistent with the findings of an earlier study. (21)

People who perceive family as emotional support were found to have higher QoL scores in Physical health, psychological and social domains (at $p=0.001$, 0.008 , 0.025 respectively for $p<0.05$). Even financial support from the family as told by the respondents had a good effect on the QoL scores of psychological and social relationship domains (at $p=0.04$ and at $p=0.001$ for $p<0.05$). Both emotional and financial support from family as perceived by the respondents lead to a better QoL thus suggesting better outcomes in terms of staying abstinent or positive approach to life. Though alcohol is considered like other treatable illnesses, public or the general population has always treated it unfavorably also there is discrimination regarding this disorder. It becomes important that 'Persons In Recovery' get the required help and support, to get back to their normal lives.

Some limitations exist for the interpretation of the data. *Firstly*, this study was applied only to literate group of the population due to the self administered English version of WHO QoL

BREF questionnaire. And as India comprises of a good part of persons who cannot read and write in English, extrapolating the findings should be done with caution or in a limited manner. *Secondly*, 'In Recovery' is a long phase; it would have been more useful if the study could compare groups of people with increasing abstinence period. *Thirdly*, following up the participants to see for relapse or other outcomes would give a more direct effect of family support. Thus, this study can be used for further exploring of the social and familial factors in rehabilitated persons. And can also be used to bring out different treatment/therapeutic interventions involving family.

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Data Collection and Data Management at Different Levels of ICDS – A Process Assessment

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Abstract

Introduction: The Integrated Child Development Services (ICDS) provides health and nutrition services to children less than 6 years, pregnant women and adolescent girls in India. To provide better services to ICDS beneficiaries Anganwadi workers maintain documents of essential information according to the guidelines given by Government of India (GOI). The study was conducted to assess how data is collected and managed at different levels of ICDS and also to ascertain whether there is any data discrepancy during transmission of data from one source to another. **Methods:** The study was done using a cross sectional descriptive design in the Keonjhar district of Orissa. Multistage sampling method was used. The Anganwadi supervisor, child development project officer and 5 beneficiaries were chosen from each Anganwadi Center and interviewed with the help of a check list. **Results:** None of the Anganwadi workers (AWW) were using all the registers as instructed by the program for collecting essential data. The weight of the children recorded by the anganwadi worker was significantly different from the weight recorded for the same children by the researcher ($p = 0.023$). The Preschool Education (PSE) attendance according to the parents' response and the anganwadi register were significantly different ($p = 0.000$). Out of 8 AWWs, 6 AWWs had written only the names of beneficiaries who had been immunized in their immunization register and those who had not been immunized did not feature in the register as not immunized. The number of beneficiaries as reported in the monthly progress report prepared by the AWW did not tally with the number of beneficiaries as recorded in the Anganwadi register. In the sector level 14 posts were sanctioned for supervisor but only 9 supervisors were posted. The AWW herself entered the monthly progress report in the supervisor's register in all the AWCs. At block level the compiled data were analyzed by the statistical analyst. **Discussion:** In this study it was found that most of the AWWs who were interviewed were not following the guidelines for collecting data, thus leading to data discrepancy while collecting data and sending report to the supervisor at sector level.

Key words: Anganwadi Worker, Anganwadi Center, Integrated Child Development Services, Monthly Progress Report

Introduction

The Integrated Child Development Services (ICDS) provides health and nutrition services to children less than 6 years, pregnant women and adolescent girls in India. To provide better services to ICDS beneficiaries Anganwadi workers maintain documents of essential information according to the guidelines given by Government of India (GOI). Various studies have been done to understand the implementation of ICDS whereas there have been no studies on

the process of data collection of ICDS. Evaluation report of the Integrated Child Development Services in March, 2011 revealed that there was a wide discrepancy between official statistics on nutrition status, registered beneficiaries and number of days food and nutrition was served. (1)

Baseline Survey for the World Bank Assisted ICDS – III Project in Rajasthan revealed that only 88% of the weighing machines were in working condition. In the age group 3-6 years, last weighing of children in the week preceding

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the survey was reported in around 42% AWCs. In 38% AWCs children were weighed in the previous month, followed by 13% AWCs where children were weighed two months ago. Children were never weighed in about 8% AWCs.(2)

Policy decisions are made on the basis of data from the grassroots level. Before taking decision one should know about the detailed process of data collection and data management which will enable us to decide how far one can rely on the existing data for taking a relevant decision. No study has been recorded on data collection and data management process of AWWs. Therefore this study sheds light on the process of data collection and data management at different levels of ICDS. It will also help to track the data discrepancy at different levels of ICDS, which pose a hindrance in getting proper information.

Objectives

1. To assess the data collection and data management process at different levels in ICDS.
2. To assess whether there are data discrepancies/gaps during data transfer at different levels in ICDS.
3. To describe the possible reasons for this data discrepancy.

Methodology

Sampling design and sample size

Multistage sampling method was used. Keonjhar has 13 blocks. Out of 13 blocks, one block (i.e Keonjhar Sadar block) was selected using simple random method. Keonjhar Sardar block has 24 panchayats. Out of 24 panchayats, one panchayat (Sirishpal) was selected through simple random method. This panchayat is covered by 8 AWCs. For this study all these 8

AWCs were selected. The concerned Supervisor and CDPO for these AWC were interviewed/surveyed. To validate the recorded AWCs information 10 beneficiaries were selected from each AWC, total 80 beneficiaries were selected using systematic random sampling method.

Data collection and analysis

At AWC, data was collected using semi structured questionnaire. The help of a translator was taken to ask the questions to AWWs in Oriya and convert the answer in Hindi to the researcher. At sector level and block level information were collected in Hindi without taking the help of an interpreter.

Results and analysis

It was observed that 5 of the 8 AWCs were run from government building while 2 AWCs from AWWs own house and one AWC from a club building. Potable drinking water was available at 7 AWCs and seven of the AWC's had toilet facilities.

It was found that none of AWC had all the required 21 registers. Most of the AWCs did not have the Kisori balika (adolescent girls) registers and daily dairy.

Only four of the AWWs were recording the data in the registers at the time of data collection. The others were recording the data in rough sheets at the time of data collection. Among these only one transcribed the data the same night on to the registers. The others postponed the work to the next day.

AWWs were recording the weight of the beneficiaries on Village health and nutrition day with help of Accredited Social Health Activist (ASHA) and Anganwadi Helper (AWH). ASHA and AWH measured the weight of the beneficiary and AWWs recorded their weight at the same time. In this study, weights of 40

beneficiaries were taken after the 3rd day of the Village Health Nutrition Day by the researcher himself and these weights were compared using paired t test with the recorded register weight for the same month. This test revealed that there was a difference in both the weight. ($p = 0.023$, mean difference = -0.7133). It was also found that 6 weighing machines were not functioning properly.

In the supplementary nutrition register the AWW were recording the names of all potential

beneficiaries irrespective of the fact whether they received the nutritional supplement or not. They entered the names from previous registers. Therefore there was a discrepancy. This is shown in Table 1. AWWs were distributing only 4kg rice to pregnant and lactating mothers and 0.700 kg pulses to children, pregnant and lactating mothers, but in their register they were reporting that they were distributing 4.750kg rice to the pregnant and lactating mother and 0.750 kg pulses to children and pregnant and lactating mother (Table1).

Table1: Supplementary Nutrition (SN) register documentation

| | Process suggested by guidelines | What AWWs were doing | How AWWs were collecting information | Data discrepancy |
|--------------------------------|---|--|--|---|
| SN received beneficiaries name | Only writes down those beneficiaries name who received the SN | Out of 8 AWWs, 7 AWWs wrote all potential beneficiaries names in the register. | They recorded beneficiaries name from the earlier register. | The names of those beneficiaries who had not taken the SN was also entered. |
| Quantity of SN distributed | 4.750kg rice for pregnant mother, 0.750kg pulses for both children below 6years and pregnant and lactating mothers. | AWWs were distributing 4kg rice to pregnant mother and 0.700kg pulses to both children below 6years and pregnant and lactating mother. | At the time of SN distribution AWWs recorded the quantity of SN distributed. | There was a discrepancy of 0.750 kg of rice per pregnant mother and 0.050 kg of pulses per child and pregnant and lactating mother. |

The AWW were supposed to use the Pre School Education (PSE) register to mark the attendance of the beneficiaries, but out of 8, 7 AWWs used the SN register for taking the attendance of the beneficiaries (Table2). PSE beneficiary's attendance was compared on the basis of beneficiary's parent response and the recorded attendance in the register. But paired t test showed that there was a difference in reporting the attendances of the beneficiaries ($p = 0.000$, Mean difference = -4.098).

Table2: Preschool Education attendance register documentation

| parameter | Process suggested by guidelines | What AWWs were really doing | How AWWs were collecting information | Data discrepancy |
|-------------------------------|--|--|---|---|
| Attendance of the beneficiary | AWW should use pre-school education register for recording the daily attendance. | Out of 8 AWWs, 7 AWWs used supplementary nutrition register for recording both the attendance. | AWWs were recording daily attendance for PSE by watching the presence of the children for the SN. | Children who came for only SN and not for the PSE got counted for the PSE also. |

AWWs should maintain only one weight for age card for a beneficiary. In this study it was found that out of 8 AWWs, 5 AWWs were using two weights for age card for each beneficiary.

According to the guidelines AWWs should write entire eligible immunization beneficiary's name in the immunization register and mark the immunization status but out of 8 AWWs, 6 were collecting immunization information from ANM.

Even they were writing only the immunized beneficiaries name in their register and leaving out the non immunized beneficiaries names (Table3).

Table 3: Matrix for immunization register

| Parameter | Process suggested by guidelines | What AWWs were really doing | How AWWs were collecting information | Data discrepancy |
|---------------------------------------|---|---|---|---|
| Children name and immunization status | AWWs should write down the names of all eligible immunization beneficiaries | Out of 8, 6 AWWs were writing only the immunized beneficiaries name | ANM helped AWWs to record the beneficiaries information | Those eligible immunization beneficiaries who are not receiving the immunization will not be captured by this register. Thus the immunization register will always show only 100% coverage. |

In this study it was observed that AWWs sent the Monthly Progress Report (MPR) on 25-26th of every month to their concerned supervisor. According to ICDS guidelines the MPR format should include the caste wise beneficiary list, number of adolescent girls, sex wise birth and death information, number of still births, live births, number of deaths during pregnancy and after pregnancy, immunization information, sex wise family planning information and number of meetings organized in the month. In this study it was also observed that the concerned supervisor prescribed her own format to the AWW for submitting the Monthly Progressive Report (MPR). This format included total beneficiary number according to their caste, sex wise birth and death information, number of still birth, live birth, immunization information and number of self help groups.

While compiling the MPR none of the AWW's registers beneficiary numbers were equal to the reported MPR beneficiary's number.

At sector level supervisor should record the AWCs MPR data by herself. But AWWs themselves entered MPR data in the supervisor's register. Only total enrolled beneficiary data was kept by supervisor herself in Microsoft excel format in the computer.

At block level, statistical analyst (SA) compiled sector level's MPR data. There was a computer at block level but the SA did not know how to operate it and did all the work manually. Analysis was done on immunization and preschool education coverage.

Discussion

The working condition influences the efficiency of the work and also provides motivation for the workers to perform their work in a dedicated manner, which leads to better outcomes. It was observed that 5 AWCs were run from government building while 2 AWCs from AWWs own house and one AWC from a club building. Such poor infrastructure conditions are seen

in other AWCs in other states also. These poor working conditions can adversely affect the productivity of the functioning of the system.

According to Orissa's ICDS guidelines AWCs should maintain 21 registers. But in this study it was found that most of the AWCs did not have Kisor balika registers (Adolescent register). There was low awareness among the community about adolescent girls as a target group of the ICDS. A previous evaluation study conducted entitled Functioning of Anganwadi Centres in Assam and Meghalaya found that none of the people mentioned adolescent girls as a target group of the ICDS. This raises the question as to whether adolescent girls are getting any benefit from the ICDS in any of the centers.

In this study it was seen that there was a discrepancy while recording the name of the supplementary nutrition beneficiary and the amount of supplementary nutrition distributed. Similar result was found in an evaluation report on ICDS, submitted by programme evaluation organization in March 2011. Some of the reasons for this discrepancy are corruption, inadequate supply received by the AWW etc.

There were discrepancies observed even in the measurement of weight of the children. The weights taken by AWWs were not matching with weights taken by the researcher on the same children three days apart. The main reason for this discrepancy was the faulty weighing machine. The same reason was came out from an evaluation study on ICDS was conducted in Himachal Pradesh in 2000 and also another study named Baseline Survey for World Bank Assisted ICDS – III Project in Rajasthan ICDS submitted by Indian Institute of Health Management Research (IIHMR). There was discrepancy while recording the attendance for preschool education beneficiary. This discrepancy occurred due to the use of

supplementary nutrition register for taking the attendance for preschool education beneficiary attendance.

In case of immunization information, AWWs were not following the guidelines to record information on immunization. They wrote only those beneficiaries' names that were immunized instead of total eligible immunization beneficiaries' name. This showed falsely high immunization coverage. The main reason behind this discrepancy was that the AWWs were unaware about the importance of immunization and also there was no provision for vaccine wise report.

In the MPR, none of the AWWs total beneficiaries number tallied with the number of total beneficiaries recorded in their register. The main reason behind this discrepancy was inadequate number of supervisors available for effective supervision. There were 14 posts for supervisor; out of which only 9 supervisors were on the roster. The studied supervisor was supervising 45 AWCs. It was seen that AWWs were filled up the supervisor's registers by themselves which led to data discrepancy. Moreover the AWW themselves filled the supervisor's registers which further worsened the discrepancy.

At block level, analysis was done only on immunization and preschool education coverage. But there was no analysis on the prevalence of malnutrition as per different category like mild malnutrition, moderate malnutrition and severe malnutrition, which would help to monitor the effectiveness of the programme.

Data discrepancies pose a hindrance for taking better decision because decisions are made on the basis of field level data. Before taking decision one should know about the detailed process of data collection and data

management which will enable as to how far one can rely on the existing data for taking a relevant decision on the basis of available data. This study disclosed various data discrepancies which occurred at AWC and that was carried further at sector as well as block level. So the decisions which were taken on the basis of this information were not so precise.

Recommendation

1. It is realized that sufficient numbers of registers and immunization cards are not available in the AWC for the use. Hence, required number of registers and immunization cards should be supplied to the AWCs for the use.
2. Register should be printed as per the prescribed Performa.
3. More practical training be provided to AWW so that AWWs can handle the field level problems without much difficulty.
4. In case of immunization report, vaccine wise report should be maintained.
5. All the vacant posts may be filled up at the earliest to enable the AWCs work efficiently and effectively.
6. On various occasions the medical officer's supervision of the AWWs health check up and referral registers would ensure accountability of the AWW.
7. Preschool education register should have two columns for the attendance, so that the both PSE and SNP attendance can be correctly captured.

8. AWWs should be asked to write the exact amount of ration distributed among the beneficiaries and mentioning the cause of low / high distribution.
9. The weighing machine that weighs the Mother and children in AWC should be calibrated and maintained properly.
10. In Tamilnadu AWCs are maintaining only 13 registers for recording beneficiaries' information effectively and efficiently, where as in Orissa AWW is maintaining 21 registers which is itself a burden to them. To overcome this burden reduction in number of registers is recommended.

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Prevalence, Determinants and Level of Nicotine Dependency among the Adolescent Students of Higher Secondary School in Biratnagar Sub Metropolitan City Nepal

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Abstract

Objectives: The objectives of the study was to determine the prevalence, determinants, level of nicotine dependency and knowledge and perception regarding the harmful effects of tobacco products among the adolescent students of higher secondary school in Nepal. **Methodology:** The total number of schools was identified in the study area. The schools were classified into semi- government and private. Out of 25 schools eight schools were randomly selected for the study (4 semi-governments and 4 private) and 131 students were taken by simple random sampling from the 8 schools. A semi structured questionnaire was administered to assess the prevalence, determinants, level of nicotine dependency as well as knowledge and perceptions regarding the harms of tobacco use. **Results:** The prevalence of smoking in this group of adolescents was 34.4%. The prevalence of smoking was higher in private school rather than semi government school and was higher in Madhesi ethnicity in comparisons to Kirat, Brahmin, Chhetri and others. Using the Fagestrum scale it was found that 81.4% had lower nicotine dependency level and no case of higher level nicotine dependency was found. The study also indicates that the main influencing factor of smoking was smoking habit of family members and experimentation. Most of the tobacco users were using cigarettes and were regular users. The average age of initiation of smoking products was 15 years (44.2%).The knowledge regarding the harmful effects of smoking was high (73.4%) among the adolescents and it was higher among the students of private schools compared to the students of semi-government schools. **Conclusion:** Planning and implementation of smoking control programs are required at schools as the prevalence of smoking seems to be high among the students. Since the nicotine dependency level is of lower order, and awareness and perceptions are positive there is potential to stop the habit completely.

Key words: Adolescent smoking, Nicotine dependency, higher secondary schools

Background

Biratnagar is a sub-metropolitan city in south east Nepal which is the second largest city in Nepal after the capital city Kathmandu. Biratnagar's demography chiefly consists of caste group like Brahmin, Chhetri, Madhesi, Tharu and Marwari. By percentage of population most people follow Hinduism, followed by Islam, Buddhism, Jainism and Christianity .(1)

Adolescence is a phase of mental, social and physical change in growing young adults. However, not all of the changes are positive.

Many teens increasingly indulge in risky behaviours. Smoking is one of those hazardous behaviours. In Nepal, adolescents comprise more than one fifth (22%) of the total population, a proportion that is expected to grow over the years to come.(2) Adolescence is the period of physical, psychological and social maturation from childhood to adulthood. The term "adolescent" refers to individuals between the ages of 10-19 years. There is growing recognition that because of a combination of biological, psychological and social factors, adolescents face many challenges and health risks such as unprotected sex, substance abuse, accidents

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and violence. The health of adolescents is profoundly associated with their behaviour and development process. Smoking use is one of the chief preventable causes of death and illness in the world. If current trends continue, there will be one death every three seconds by 2030 and a third of them in developing countries. Smoking is unquestionably the substance responsible for the most persistent and most widespread drug dependence, far ahead of alcohol, marijuana, heroin and cocaine. The World Bank estimates that in high-income countries, smoking-related health care accounts for 6-15.1% of all annual health care costs.(3,4,5,6)The high smoking-related health care costs are particularly worrisome for low-income countries that can least afford the health care burden, where the smoking epidemic is expected to account for 70% of all smoking-related deaths in the next 20 to 30 years.

The overwhelming majority of smokers begin using smoking products before they reach adulthood. Among those young people who smoke, nearly one quarter smoke their first cigarette before they reached the age of ten. (7).

The objectives of the study was to determine the prevalence, determinants, level of nicotine dependency and knowledge and perception regarding the harmful effects of tobacco products among the adolescent students of higher secondary school in Nepal.

Materials and Methods

Study design

The framework of the study is based on the Global Youth tobacco Survey (GYTS), designed and conducted by the World Health Organization (WHO) and Centers for Disease Control (CDC). This was a school-based cross-sectional descriptive study.

Study population

The study population was the adolescent students of class 11 and 12 from eight higher secondary schools within Biratnagar sub-metropolitan city.

Sampling

Stratified proportionate sampling was applied for the study. Total number of schools was identified in the study area. School were classified into semi-government and private. Eight schools were randomly selected for the study (4semi-government+4 private). All selected schools agreed to participate in the study. Of them, 6 questionnaires did not have basic information or were not readable, thus were excluded from the study. Finally 125 questionnaires were included in the analysis.

Operational Definition

- **Regular user is** someone who, at the time of the survey, consumed/used any smoking product at least once a day.
- **Occasional user** is someone who consumed any smoking product at least once a week but not every day.
- **Experimental user** is someone who had consumed any smoking product at any time, but not more than 10 units of smoking product.
- **Past user:** Is someone who was formerly (i) regular user, or (ii) occasional user and used more than 10 units of smoking product but currently do not consume smoking at all.

Knowledge regarding harmful effects of smoking use

- **Good knowledge**

Adolescent student who could report at least

two major health hazards/illness among i) shortness of breath and/or asthma, ii) heart problems e.g. increased heart rate and/or heart attacks, iii) lung and/or other cancers, iv) chronic bronchitis and/or COPD

■ **Some knowledge**

Adolescent student who could report at least one major health hazards/illness among i) shortness of breath and/or asthma, ii) heart problems e.g. increased heart rate and/or heart attacks, iii) lung and/or other cancers, iv) chronic bronchitis and/or COPD.

■ **Poor knowledge**

Adolescent student who could not report any major health hazards/illness among i) shortness of breath and/or asthma, ii) heart problems e.g. increased heart rate and/or heart attacks, iii) lung and/or other cancers, iv) chronic bronchitis and/or COPD.

■ **Level of nicotine Dependency (Based on Fagestrum Scale)**

0-2- Very low Dependence

3-4 - Low Dependence

5- Medium Dependence

6-7-High dependence

8-Very High dependence

Perception towards smoking use

The perception of the adolescent student was measured in the 3-point scale ranging from

“Support”, “oppose”, and “don’t know”. For simplification of analysis,

-Adolescents who use smoking have more friends

-Adolescents who use smoking are more attractive

-Adolescents who use smoking products gain/lose weight

Results

The response rate was 100%. Prevalence of smoking was 34.4%. Among the users 55.8% were regular users followed by occasional users 34.9% and experimental user 9.3%. More adolescent students from Madeshi ethnic group were using smoking products (44.2%) than those from other ethnic groups followed by Chhetri (23.3%), Kirat (18.6%), Brahamin (11.6 %) and others (3%). More adolescents consuming smoking products were from private school (68%) in comparison to semi government school (32%). The students also indicated that most of the students were consuming the cigarettes (76.7 %) followed by hookah and bidi. The study also indicate that the factor influencing the smoking behaviour included experimentation (53.5%) followed by peer pressure (25.6%) and fashion (25.6%).The students also indicated that major influencing factor for smoking is smoking habit of family member. The study also indicates that the average age of initiation of smoking products was 15 years (44.2%). Among the users 81.4% were in the category of very low level nicotine dependency followed by low level nicotine dependency among 14.0%, medium among 2.3%, high among 2.3% and none had very high nicotine dependency.

Among the adolescents 73.4% were having good knowledge, 19.4% were having some knowledge and 7.2% were having poor knowledge. Among the adolescents boys 56.5% had good knowledge 15.3 % had some knowledge and 4% had poor knowledge. On the other hand, 16.9% girls had good knowledge 4.0% had some knowledge and 3.2% were having a poor knowledge Among semi government school students, 29.0% of the students were having a good knowledge about

the hazards of use of smoking products, 8.1% were having some knowledge and 4.8% were having a poor knowledge. On the other hand 44.4% of the private school students were having good knowledge about the hazards of use of smoking products, similarly 11.3% were having some knowledge and 2.4% were having a poor knowledge. Among the ethnicity 28% of Chhetri were having a good knowledge followed by Brahmin(17%), Madeshi(15%), Kirat (13%) and others (8%). The perception of adolescent's students was measured in three scales on a given statement. Students were asked to mark any one option among 'Favour', 'oppose', and 'Don't know' for each given statement. Among the adolescents students (88.0%) opposed the statement "consuming of smoking products makes a person more attractive" 11.2% favoured the statement and 0.8% said that they don't know. Many of the students (80.8%) opposed the statement that "users of smoking products have more friends", 18.4% favoured the statement and 0.8% said that they don't know. A higher percentage of students (74.4%) favoured the statement that "taxes should increase on smoking products" 24.8% opposed and 0.8% and said that they don't know. Many of the students (70.4%) oppose the statement that "smoking will lead to gain/loss of weight" 29.6% favored the statement.

Discussion

The aim of the study was to determine the prevalence and type of smoking use among students in Grade 11 and 12 in Biratnagar sub-metropolitan city. Boys were more likely to use smoking compared to girls (41.1% boys and 13.3% girls) According to GYTS in Nepal, 22.5% of boys and 7.9% of girls ever used any smoking product. The proportion may be higher among boys than girls as boys in Nepalese culture enjoy higher level of freedom regarding their individual behaviours than girls both from the family and society.

Private school students were more likely to use smoking compared to semi-governmental school students. Generally, students at private schools are from more affluent families than those at semi-governmental schools. Thus, private school students may have more money to spend to purchase smoking products than students at semi-governmental schools, which may enable them to use smoking more freely than semi-governmental school students.

A substantial (76.7%) of adolescents students were using a cigarettes of different brands available in the market. Adolescent students of the Madeshi ethnic group were more likely to use smoking than those from the Brahmin/Chhetri /Kirat ethnic group. The difference may be due to low literacy and ignorance.

The prevalence of smoking use among school going adolescents of Biratnagar was higher than earlier smoking use studies in Nepal. The Global Youth Smoking Survey in Central Developmental Region of Nepal in 2001 reported that the use of smoking was about 16.3% of adolescent students (22.5% boys and 7.9% girls). The average age of initiating use of smoking products was 15 years. Experimental use was the main reason for initiating smoking by adolescents driven by peer pressure. During this age, adolescents' activities are less supervised by their parents than in their earlier life and also are more influenced by the activities and behaviours of peers. A substantial proportion (69.8%) of the adolescent students reported that at least one of their family members used any smoking products. Although a majority (73.4%) of adolescent students claimed to have knowledge of the hazards of use of smoking products, the results showed that about 7.2% of the respondents in fact had poor knowledge, and were unable to recall even one of the main health hazards of use of smoking products. The proportion of adolescent students having poor

knowledge was significantly higher among semi-governmental school students than private school students. The difference may be due to the better educational activities and restrictions to use smoking in privateschool than in semi-governmental schools. Nearly 18.4% of the respondents thought that adolescents who use smoking have more friends and (11.2%)thought that adolescents who use smoking products are more attractive. These perceptions may have developed among adolescent students from the information received from their peers. This suggests that adolescents were not getting valid or complete information about the hazards and benefits of smoking. The source of information is mostly informal and un-systematic, which resulted in the development of some wrong impressions regarding smoking use. All these results were higher than the median value of all GYTS countries [6].

Conclusion

The finding shows that there was high prevalence of smoking among adolescent students of higher secondary schools in Biratnagar sub-metropolitan city Nepal. Holistic approach should be taken involving stakeholders, parents, peers , school authorities and health authorities

coming together to find a effective solution to address this problems before things get out of hand.

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Screening children for developmental milestones and assessing the effect of malnutrition on child development in the *Juanga* tribe of Keonjhar District of Orissa (India)

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Abstract

Background: Malnutrition is widely prevalent in the tribal population of Orissa (India). In Orissa 57% are stunted and 54.4% are underweight among children <6 years of Schedule Tribes. A wide range of developmental deficits has been reported in malnourished children. Effect of chronic protein energy malnutrition (PEM) causing stunting and wasting in children could also affect the ongoing development during childhood (>5 years of age). **Objective:** To assess the nutritional status of Juanga tribal children < 3 years in a rural area of Orissa (India) and screening the children for developmental milestones appropriate for the age groups. **Methods:** A cross-sectional survey was conducted in Kendujhar district of Orissa. Age, weight and height of the children were measured and the socio-demographic characteristics were collected using a questionnaire. The children were screened for developmental milestones and observations were recorded. **Results:** The overall prevalence of malnutrition in the community was found to be very high with 92.4% of the children being underweight, 94.3% stunted and 47.7% wasted. The peak in prevalence of malnutrition was found in the children aged between 6 months and 35 months. The developmental delays were most prominent in age group ranging between 18 to 35 months and are most prevalent in the children in the severe malnutrition category. There was no significant gender difference in the prevalence of malnutrition. The achievement of milestones was delayed with the increase in prevalence of malnutrition. **Conclusion:** There was high prevalence of malnutrition among the Juanga tribe children less than 3 years of age. A strong association was observed between malnutrition and developmental delay.

Key Words: Malnutrition, Z score, Stunting, Wasting, Milestones of Development, Scheduled Tribe (ST)

Introduction

As children are the future of every country, their situation is always of concern to policy makers, their parents and the general public. Ensuring children's health is a universally supported goal of development. In developing countries, children and adults are vulnerable to malnutrition because of low dietary intakes, infectious diseases, lack of appropriate care, and inequitable distribution of food within the households(1). Malnutrition is the result of marginal dietary intake compounded by infections. Health consequences of inadequate nutrition are enormous. It was estimated that nearly 30% of infants, children, adolescents, adults and elderly in the developing world are suffering from one or more of the multiple forms of malnutrition, 49% of the 10 million deaths among children less than 5 years

old each year in the developing world are associated with malnutrition, another 51% of them associated with infections and other causes(1). Malnutrition during childhood can also affect growth potential and risk of morbidity and mortality in later years of life. Malnourished children are more likely to grow into malnourished adults who face heightened risks of disease and death.

Indian Context: Almost half of children under five years of age (48 percent) are stunted and 43 percent are underweight. The proportion of children who are severely undernourished (more than three standard deviations below the median of the reference population) is also notable—24 percent according to height-for-

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age and 16 percent according to weight-for-age. Wasting is also serious problem in India, affecting 20 percent of children under five years of age. Inadequate Nutrition is a problem throughout India, but the situation is considerably better in some states than in others. Schedule Tribe children in India 53.9% stunted, 24.7 are wasted and 54.5% are in underweight category. The mortality in the tribal children had been found to be more in relation to their share of the total population in rural areas(1).

Orissa Context: Forty-five percent of children under age five were stunted, or too short for their age, which indicates that they have been undernourished for a significant period of time. Twenty percent are wasted, or too thin for their height, which may result from inadequate recent food intake or a recent illness. Forty-one percent are underweight, which takes into account both chronic and acute(1).

Juanga Tribe

It is a primitive tribe of Orissa. The *Juanga*'s are mostly concentrated in Banspal, Telkoi and Harichandanpur Blocks. They classify themselves into two sections, viz. the Thaniya (those who dwell in their original habitation) and the Bhagudiya (those who have moved away to other places). In their language the word "*Juanga*" means man. They have got their own dialect which has been described by Col. Dalten as Kolarian. This is one of the primitive tribes of Orissa. A study carried out by RMRC, Bhubaneswar amongst four primitive tribes of Orissa, revealed an infant mortality rate (per 1000 live birth) of 139.5 in Bondo, 131.6 in Didayi, 132.4 in Juanga and 128.7 in Kondha (Kutia); a maternal mortality rate (per 1000 female population) of 12 in Bondo, 10.9 in Didayi, 11.4 in Juanga and 11.2 in Kondha tribe.

Methodology

Sampling: There are 47 villages of *Juanga* in the Banspal block. In the first stage we selected 7 villages which were covered under the Integrated Child Development Scheme and have an Anganwadi Centre (AWC). We covered the households with at least one child < 3 years of age in all the selected seven villages. The total of 105 children < 3 years of age were observed for the milestones of development and the physical anthropometric measurements were recorded as per the standard procedures. Supine measurements for length were taken for the children under 2 years. The international System of units was followed.

Anthropometry

The measurements of weight and height of the children is done as per the guidelines given by CDC, USA(4). The weight in Kilograms and height in Centimeters was recorded for all the children. The most standardized indicators of malnutrition in children were used in this study. These indicators are based on measurements of the body to know if growth pattern is normal and adequate.

Height for age (H/A), is an indicator of chronic malnutrition. A child exposed to inadequate nutrition for a long period of time will have a reduced growth - and therefore a lower height compared to other children of the same age (stunting).

Weight for age (W/A), is a composite indicator of both long-term malnutrition (deficit in height/"stunting") and current malnutrition (deficit in weight/ "wasting").

Weight for height (W/H), is an indicator of acute malnutrition that tells us if a child is too thin for a given height (wasting). In each of the 3 indicators (W/H, W/A, H/A), A comparison of

the individual measurements to international reference values for a healthy population (WHO reference values) (5) was done and the cases with the values less than the -2SD from the median of the reference.

population of WHO were categorized as malnourished. The cases with measured values less than -3sd were categorized as Severely Malnourished.

Screening Children for milestones of development

Child development was assessed as per the status of developmental milestones achieved. The details of the milestones(6) achieved age wise was recorded as illustrated by the National Institute of Public cooperation and child development, New Delhi. A structured format for collecting the information on background characteristics of the household was used along with anthropometric records of the child. Checklist of developmental milestones was used to screen the child and observations for individual child were recorded in the response sheet.

Data collection: This cross-sectional study was undertaken in Kendujhar district of Orissa in June 2011. The questionnaire comprised three different parts: socio demographic, anthropometrics measurement along with screening of the child for developmental milestones. The data were collected with the help of a translator who was trained for two days. The data were checked every day by the investigator who stayed with data collectors for the duration of the survey, which was 10 days. Measurements on weight and height were taken from children under 36 months. The socio-demographic characteristics included in the questionnaire were: sex, caste, ownership of land, educational status of the mothers, and household income. Digital weighing scale was used for weighing children less than 3 years of age. Height of the

children above two years of age, and length of the young children and infants below two years of age were measured by Recumbence scale. The nutritional status of the study children was assessed using the indicators weight-for-age, weight-for-height, and height-for-age, according to the WHO reference standard taking -2.S.D as the cut-off point indicating malnutrition (under weight, stunting, and wasting). Verbal consent was obtained from heads of households.

Results

The study included a total 105 children out of which 55(52.3%) were males and 50(47.6%) were females. The number of children in the age group of 12-35 months constituted more than 67% of the study population. According to the WHO(5) reference standard taking -2.S.D as cutoff point, the study children who fell below -2 S.D. of the indicators (Underweight, Stunted, and Wasted) were 92.3%, 45.8% and 94.3%, respectively. In this study, there were no cases of over nutrition. In order to investigate the association of selected demographic and socio-economic variables with the anthropometric results, Chi square test of association was used. However, there was no statistically significant association with sex, maternal education, birth order and monthly income. The status of children was calculated using WHO standard Z scores for reference population. It was observed that 33% children were moderately underweight, 59% severely underweight and only 7.6% were found to be in normal weight category. But in case of wasting which is an indicator for current malnutrition, 54% of the children were normal, 24.8% moderately wasted and 21% were severely wasted. The third indicator of malnutrition is stunting, there were 68.6% of children who fall into the severely stunted category, 25.7% are moderately stunted and only 5.7% of children observed were in the normal category.

Table 1: Children under 6 years Nutritional Status

| | Height/ Age (%) | | | Weight/Height (%) | | | Weight/Age (%) | | |
|-----------------------|-----------------|--------|--------------|-------------------|--------|--------------|----------------|--------|--------------|
| | < -3sd | < -2sd | Mean Z score | < -3sd | < -2sd | Mean Z score | < -3sd | < -2sd | Mean Z score |
| Schedule Tribe | 28.4 | 57.2 | -2.1 | 8.2 | 27.6 | -1.3 | 22.9 | 54.4 | -1.9 |

Table 2: Socio demographic characteristics of the study population

| Socio-demographic Characteristics | Age in months | | | | | | | | | | | | | | Total | |
|-----------------------------------|---------------|------|-----|-------|-----|-----|------|------|-------|------|-------|------|-------|------|-------|------|
| | 1-2 | | 3-5 | | 6-8 | | 9-11 | | 12-17 | | 18-23 | | 24-35 | | No | % |
| | No | % | No | % | No | % | No | % | No | % | No | % | No | % | No | % |
| Sex | | | | | | | | | | | | | | | | |
| Male | 0 | 0 | 7 | 6.6 | 5 | 4.7 | 7 | 6.6 | 14 | 13.3 | 7 | 6.6 | 15 | 14.2 | 55 | 52.3 |
| Female | 2 | 1.9 | 5 | 4.7 | 4 | 3.8 | 4 | 3.8 | 10 | 9.5 | 9 | 8.5 | 16 | 15.2 | 50 | 47.6 |
| Education of mother(20) | | | | | | | | | | | | | | | | |
| Illiterate | 1 | 0.95 | 11 | 10.4 | 9 | 8.5 | 9 | 8.5 | 21 | 20.0 | 14 | 13.3 | 31 | 29.5 | 96 | 91.4 |
| Literate | 1 | 0.95 | 1 | 0.95 | 0 | 0 | 2 | 1.9 | 3 | 2.8 | 2 | 1.9 | 0 | 0 | 9 | 8.57 |
| Birth order | | | | | | | | | | | | | | | | |
| 1 | 2 | 1.9 | 2 | 1.9 | 3 | 2.8 | 1 | 0.95 | 13 | 12.3 | 2 | 1.9 | 2 | 1.9 | 25 | 23.8 |
| 2 | 0 | 0 | 5 | 4.7 | 2 | 1.9 | 3 | 2.8 | 3 | 2.8 | 4 | 3.8 | 6 | 5.7 | 23 | 21.9 |
| 3 or more | 0 | 0 | 5 | 4.7 | 4 | 3.8 | 7 | 6.6 | 8 | 7.6 | 10 | 9.5 | 23 | 21.9 | 57 | 54.2 |
| Monthly income | | | | | | | | | | | | | | | | |
| <2000 | 1 | 0.95 | 6 | 5.7 | 2 | 1.9 | 6 | 5.7 | 12 | 11.2 | 11 | 10.4 | 11 | 10.4 | 49 | 47.5 |
| >2000 | 1 | 0.95 | 6 | 5.7 | 7 | 6.6 | 5 | 4.7 | 11 | 10.4 | 5 | 4.7 | 19 | 18.0 | 54 | 52.4 |
| Economic status(20) | | | | | | | | | | | | | | | | |
| BPL | 2 | 1.9 | 12 | 11.42 | 9 | 8.5 | 11 | 10.4 | 24 | 22.8 | 16 | 15.2 | 31 | 29.5 | 105 | 100 |
| Total | 2 | 1.9 | 12 | 11.42 | 9 | 8.5 | 11 | 10.4 | 24 | 22.8 | 16 | 15.2 | 31 | 29.5 | 105 | 100 |

Discussion

While it was found in previous studies that birth order, maternal education and monthly income were associated with the nutritional

status(7), such an association was not observed in this study. It was observed that the peak prevalence of underweight was between the age groups 6 months to 35 months, and nearly 90% of children in age group 6-8 months, 72%

in 9-11 months, 70.8% in 12-17 months, 81% in 18-23 months, 68% in 24-35 months were severely underweight. It was also observed that with the increasing age of the child the proportion of malnourished children increased. The weight for height measure showed that majority of the children in each age group were under the normal category this indicating that the malnutrition is more chronic in nature. The highest percentage of wasted children was observed in the age group 18-23 months. Height for age status of the children according to the age group of the child showed that peak prevalence of malnutrition was observed in the 6-8 months and till 35 months. This indicator showed the level of chronic malnutrition prevalent in the community, as around 90% of children in the age group 6-8 months, 73% in the age group 9-11 months, 71% in age group 12-17 months, 81% in the age group 18-23 months and 68% in the age group 24-35 months were severely stunted. The increased stunting prevalence with increased age of the child depicts the trend of higher chronic malnutrition in the higher age groups. The developmental milestones status of the children in their particular age group was observed. The children who had achieved all the milestones as given in the guidelines of NIPCCD, New Delhi, were placed in the achieved category and the children who could not achieve all the milestones were categorized as still developing. The poor performance of the children in respect of the achievement of the milestones indicated whether they were developing normally or not. Increasing developmental deficit was observed with an advancing age of the children. The coexistence of underweight and developmental deficit had been observed. It reveals that among children with normal weight around 50% were still developing, in moderately underweight children 66% were still developing and in severely underweight children 73% of the children had yet to achieve the developmental

milestones. Figure 1 shows the trend that as we move from moderate to severe underweight category, the proportion of children who were developmentally compromised had increased considerably. The comparative study of the status of wasting and the milestones achieved showed that among the normal children around 65% have not achieved the milestones yet. A similar trend had been observed here as well that with the increasing level of malnutrition the developmental deficit was also rising, as 73% of children in the severe wasted category had yet to achieve the milestones. The 75% of the severely stunted children also failed to achieve all the milestones which indicated that there existed a significant developmental deficit. And this deficit was increasing with the rising malnutrition level, as 55.6% of the children in the moderate malnutrition category had yet to achieve the milestones corresponding to their age group. The findings of the study revealed a higher prevalence rate when compared with NFHS 3 data. But in both the cases it was extremely high in comparison to the existing standards set by WHO. The peak in prevalence of malnutrition is found in children between 6 months and 35 months. The developmental delays are most prominent in between 18 to 35 months(8). The developmental delays are mostly prevalent in the children in the severe malnutrition category. There was no significant gender difference in the prevalence of malnutrition. Around 92% of children are underweight. The achievement of milestones is delayed with the increase in prevalence of malnutrition. There was high malnutrition prevalence in comparison to the normal population of Orissa. About 68% of children have yet to achieve the milestones corresponding to their age group(5;9). The high prevalence of stunting in the children had indicated the chronic malnutrition(10). It is the result of widespread poverty and hunger in these tribal communities. The feeding habits of

the community also predispose the children for malnutrition as they interfere with the availability of the macro and micro nutrients specifically in these primitive tribes. Stunting could result in slowing in the age related development and higher order cognitive processes and may also result in long lasting cognitive impairments. For nutritional interventions, 'Catch' the children young – before 3 years – before malnutrition sets in and before the child gets compromised regarding the overall growth and development. Detection of malnutrition at an early stage, so that moderate cases may not progress to severe form of malnutrition. The provision of nutritional education to mothers is much needed. The high prevalence of malnutrition is also related to the purchasing power of the community, so effort should be made to increase the income of the tribal families by various ways. Special attention is needed for the primitive tribes like *Juanga*. The Tribal development is very much dependent on the status of the children, so we really need to look into the grave situation of the tribal children in particular, which proved to be a big hurdle in saving the primitive tribes from the danger of extinction.

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Impact of oral health habits and oral health status of the caregiver on oral health status of persons with mental disability.

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Abstract

Introduction: Oral health is a major unattained health need for the persons with mental disability. The scarce availability of literature on oral health status of persons with mental disability makes treatment along with the preventive dental health promotion programs even more difficult. **Objective:** The aim of the study was to investigate possibility of association between oral health status, dental morbidity and oral health habits of the care givers with the same parameters in the persons with mental disability. **Methods:** A cross sectional descriptive study was done among 63 persons with mental disability and their care givers in an institution in Western Maharashtra. Caries status and oral hygiene status were assessed by DMFT Index and Simplified Oral Hygiene Index (OHI-S). **Results:** Using Chi square testing the study established a significant association between oral health status of persons with mental disability and their caregivers ($p=0.001$). The study also showed a significant relation between oral health practices followed by persons with mental disability and their caregivers ($p=0.004$). **Conclusion:** The present study highlighted that the oral health status of persons with mental disability was poor and influenced by oral health status and oral health behavior of their caregivers. A specialized dental health promotion program focusing on improving knowledge and practices among caregivers of persons with mental disability is required.

Introduction

Oral and dental health is a very fundamental part of holistic health for all, and is all the more important for persons with mental disability.

Dental caries is the most prevalent disease among persons with mental disability in the community worldwide; and dental treatment is the major unattended health need of persons with mental disability. Some of the important factors affecting their dental health needs can be practical difficulties during treatment, communication problem, underestimation of health need and pain, and poor co-operation.

Literature on oral health management of persons with disability is scarce compared to normal individuals. The recent NSSO report shows that India accounts for 18.49 million disabled persons, that accounts for 1.8% of the total population of which 0.44 million

individuals suffer from mental retardation. (1) The American Association for Mental Deficiency (AAMD) defines mental retardation as "a deficiency in theoretical intelligence that is congenital or acquired in early life."

A review of literature has shown that persons with mental disability have poor oral hygiene, increased prevalence of dental caries, and higher periodontal disease. (2) Reason for poor oral hygiene among children with mental disability can be attributed to less ability in understanding instructions, lack of concentration, lack of motor skills and lack of co-ordination. A study done in Nigeria by O.O.Denloye suggested that "better oral hygiene among mentally disabled group may be due to a better supervision of children by the nurses in charge of their welfare". (3)

Different factors affecting oral health of persons with mental disability have been extensively analyzed, but in a developing country like

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India further research is very much required. Considering the lack of basic cognitive skills in persons with mental disability they are very much dependant on their caregivers for their daily activity; same applies to the oral health hygiene also. At the same time the lack of cognitive skills and lower understanding limit the chances of improvement in the brushing and other oral hygiene habits in them, so a much holistic approach is needed to involve parents and caregivers to improve their oral health. The objective of this study was to determine the oral health status of persons with mental disability and to investigate its association with the oral health status and the oral health behavior of the caregivers.

Method

The study was conducted at 'Sanjeevani Vocational Training Institute for Mentally Challenged' situated in a town of Western Maharashtra, Karad. Sixty three persons with mental disability along with their caregivers in the study were conveniently selected from the institute depending upon the availability of the subjects. The sample were grouped in two categories depending upon the age of the persons with mental disability one between 6 to 18 years of age and other comprising of above 18 years of age. Minimum age limit was considered as 6 years because that's the age when first permanent tooth erupts in the oral cavity. For further classification in to different IQ categories guidelines prescribed by the 'Diagnostic and Statistical Manual of Mental Disorders-IV-TR' were used.(8) For the study purpose a person, a relative or a friend of a person with mental disability who takes care of them in general sense or helps them in their daily activities was considered as a caregiver. A two part detailed questionnaire consisting of a questionnaire for the persons with mental disability and other part for their caregiver was used to collect the data and record the oral hygiene status. The

oral hygiene status and dental morbidity was assessed by oral examination using mouth mirror, probe and explorer. For assessing oral hygiene status Oral Hygiene Index-Simplified (OHI-S) was used and for dental caries Decayed Missed Filled Teeth Index (DMFT Index) was used. An informed consent was collected from each and every caregiver included in the study before filling up the questionnaire.

Results

Description of the Study participants

The study population consisted of 60% male and 40% female participants. The caregivers were predominantly females at 81% and only 12 (19%) of the caregivers were males. As mentioned previously study population was categorised in two depending on their age comprising of 31 respondents between 6 to 18 years of age and rest 32 were above 18 years of age. Majority of the caregivers were literate and only 4.8% of all the caregivers were illiterate. There was no significant relation between the literacy, economic status of caregiver and the oral health status as well as DMFT index of the corresponding participants. IQ wise distribution of study sample is shown in Table 1.

Table 1 :Distribution of the IQ of the study participants

| IQ | Fre- quency | Percent- age |
|----------------------------------|----------------|-----------------|
| Below 20 | 8 | 12.7 |
| Profound mental retardation | | |
| 20-34 | 30 | 47.6 |
| Severe mental retardation | | |
| 35-49 | 20 | 31.7 |
| Moderate mental retarda- tion | | |
| 35-49 | 5 | 7.9 |
| Moderate mental retarda- tion | | |
| Total | 63 | 100 |

Brushing Habits: 58 of the 63 persons with mental disability brush daily at least ones out of which 43 brush once a day and 15 brush twice a day. Whereas all the caregivers brush daily, 57% of them brush once a day and rest brush twice a day. Total 53 of the 63 used toothbrush for brushing. Majority of the persons with mental disability brush on their own (57%) 22.3% of mentally challenged need help of their caregiver while brushing and 12.7% brush under supervision of their caregivers. The persons with mental disability who had caregivers with good brushing habits had a 6.35 times greater odds of having good brushing habits themselves compared to their counterparts whose caregivers did not have good brushing habits ($p = 0.004$).

Dental Morbidity.: Among dental morbidities tooth ache and dental caries were most commonly reported dental problems. Fifteen of the persons with mental disability visited a dentist in the past for tooth ache and 8 for dental caries. While 12 and 9 currently reported tooth ache and dental caries respectively. Almost half of the study population of was currently suffering from the any type of dental complications (49%). Among caregivers 29% of total respondents currently reported a dental problem similar to mentally challenged. Among caregivers also tooth ache and dental caries were most common complains.

Hygiene Status: Among study population only 5 mentally challenged were routinely taken to the dental hospital for regular check up. The mean OHS-I for persons with mental disability was calculated to be 2.4 and DMFT index was 3.06. In the caregiver population mean OHI-S and mean DMFT index was 2.5 and 4.27 respectively. It was observed that those persons with mental disability who had a higher OHI-S had a 6.35 times greater odds of having a caregiver with high OHI-S compared to their counterparts

with poor OHI-S ($p = 0.001$) Similarly the odds of a person with mental disability having lesser chance of caries was 12.44 times greater when their caregivers had lesser chance of caries compared to their counterparts whose caregiver had more caries ($p = 0.009$).

Discussion

The study shows a significant relation between the oral hygiene and dental morbidity of persons with mental disability and their caregiver. The same was hypothesized by O.O.Denloy after a study on oral health status of persons with mental disability done in Nigeria.(3) The incidence of dental morbidity is very high among persons with mental disability with 49% of total study population reporting any of the dental complains as compared to their normal counterparts.

Caries experience was comparable to what was observed among children without disability. A study by Gizani et al showed a mean DMFT index of 2.9 among normal counterparts whereas the present study calculated mean DMFT index to be 3.06.(7) The higher number of caries prevalence can be attributed to the untreated carious lesions among the mentally challenged than in their normal counterparts.

The persons with mental disability in this study had higher percentage of poor oral health status as compared to a similar study done in Udaipur by Manish Jain et al.(2)

The study showed a relation between brushing habits of persons with mental disability and their caregiver ($p=0.004$). 43 of total 58 respondents who brush daily brush once a day and 15 brush twice a day. Total 53 of the 63 used toothbrush for brushing. In caregivers 36 brush once a day and rest 27 brush twice a day. Among study population only 5 mentally challenged were routinely taken to the dental hospital

for regular check up. Thus study suggests a higher number of mentally challenged subjects who are deprived of attention from the dental professionals

In conclusion oral health status of present mentally challenged population was poor and was influenced by the oral health practices and oral health status of their caregivers. There was no any influence of caregiver's education, monthly income and subject's IQ level found in the study. The lack of dental care to the mentally challenged subject was reflected in the dental status of the study population when compared to the normal population of same age group. In comparison to normal children mentally challenged children were not given enough oral health care with respect to their needs.

Considering the results of this study more attention should be given to the mentally challenged population for attaining their dental treatment needs. A more holistic approach involving caregivers of mentally challenged to improve their oral health status is needed. Oral health programs should be aimed specifically for special needs institutes and caregivers of mentally challenged. Specialized programs involving caregivers of these special needs children should be conducted aiming to improvise the oral health behavior which in turn will improve the oral status of mentally challenged. Oral health promotion and intervention programs should be targeted and concentrated towards these risk groups. Oral health and quality oral health care contribute to holistic health, which should be a right rather than a privilege. That is why individuals with

disabilities deserve the same opportunities for dental services as those who are healthy.

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Prevalence and Determinants of Obesity Among School Going Adolescents in North Chennai

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Abstract

Introduction: Obesity has been referred as a global Epidemic by WHO, globally the prevalence varying from 30% in USA to less than 2% in sub-Saharan Africa. Greater awareness among public and primary prevention of obesity during childhood and adolescence through interventions and programs are necessary. **Objectives:** 1. To study the prevalence and determinants of obesity among school going adolescents in north Chennai. 2. To study the relationship of obesity with physical activity and dietary pattern among adolescent school children. **Materials and methods:** This is a descriptive cross sectional study conducted among school going adolescents over a period of one month June 2011. Sampling was done by multistage sampling method and anthropometric measurements were done. **Results:** Data of 158 school going adolescents in the age group of 11 to 15 years were analyzed. The prevalence of overweight was 24.1% and obesity was 7.6%, while underweight was 26.4% which indicates double burden of nutrition related health problems. The mean hours spent in watching TV and computers from Monday to Friday was 10.26 hrs and the Summary Physical Activity score showed mild physical activity among 40.5% (n=64) of adolescents, moderate physical activity among 16.5% (n=26) and none had high physical activity. **Conclusion:** The prevalence of overweight and obesity was 24.1% and 7.6% respectively among school going adolescent in north Chennai. One of the major reasons for prevalence of obesity was watching TV and using computers daily. This study also shows that the prevalence of underweight was 26.4% which reflects the double burden of nutrition related health problem, which is an important public health problem.

Introduction

Obesity is a disorder with excess deposits of adipose tissue mass, resulting from an imbalance between energy intake and energy expenditures. A crude population measure of obesity is the body mass index (BMI). A person with a BMI of 30 or more is generally considered obese and a BMI equal to or more than 25 is considered overweight. The World Health Organization (WHO) describes overweight and obesity as one of today's most important public health problems, which is considered as a global epidemic. (1) Obesity is increasing rapidly in developing countries undergoing rapid nutrition and lifestyle transition, and it often coexists with under-nutrition. The rising prevalence of obesity in developing countries is largely due to rapid urbanization and mechanization which

has led to reduction in the energy expenditure along with an increase in energy intake due to increased purchasing power and availability of high fat, energy-dense fast foods. Since, adolescence is a period of transition from childhood to adulthood; it assumes critical position in the life cycle of human beings, characterized by an exceptionally rapid rate of growth. (3) The prevalence of overweight and obesity among children and adolescents has increased significantly in the developed countries during the past two decades and similar trends are being observed even in the developing world, though less rapidly. (4,5,6,7) Globally the prevalence of obesity varies from 30% in USA to less than 2% in sub-Saharan Africa. (8) Obesity and overweight from different parts of India (Punjab, Maharashtra, Delhi and South India) that range from 3% to 29%, and also

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indicate that the prevalence is higher in urban than in rural areas.(9) Studies from Chennai and Delhi have shown the prevalence of obesity as 6.2% and 7.4% respectively. (10, 11)

It has been reported as 50-80% of obese children will grow up to become obese adults and it is harder to treat obesity in adults than in children. (12) In children, the development of obesity is associated with the simultaneous deterioration in chronic diseases risk profiles. (13,14,15)

Under nutrition is also a major public health problem worldwide, particularly in developing countries. (16) Even in countries like India, which are typically known for high prevalence of under nutrition, significant proportion of overweight and obese children now coexist with the under nourished. The children in developing countries presently suffer from double burden of malnutrition- urban children are afflicted with problems of over-nutrition while rural and slum children suffer from effects of under nutrition. (17,18)

Materials And Methods

Study design and sampling method

This was a school based descriptive cross sectional study conducted among school going adolescents over a period of one month June 2011. Sampling was done by multistage sampling method. North Chennai was divided into six clusters and three schools from Perambur cluster were selected by simple random sampling method. Students from class seventh, eighth and ninth were selected by random sampling method using the class register. Sample size was estimated by using prevalence of obesity as 6.23% and with error of 10% and for a 95% confidence level. Thus 158 students studying 7th to 9th were selected for the study.

Data collection

Data was collected through pretested questionnaire which had three parts. Part A consisted of demographic characteristics, height, weight and BMI. Part B was regarding physical activity which includes mode of transport used to go to school, participation in sports, games, aerobics exercise and frequency and duration of activity and time spent for watching TV, computer work and video games. This physical activity questionnaire for children was a 7-day recall instrument. The summary physical activity score derived from eight of the questions was scored on a 5-point scale. Finally part C consisted of questions from NHANES food questionnaire (National Health and Nutrition Examination Survey) for diet pattern assessment. Fully informed consent from parents and oral assent from students were obtained after full explanation of the procedures involved.

Anthropometric measurements

Anthropometric measurements of height, weight of each individual was measured using standard instruments and body mass index (BMI) was calculated as the ratio of body weight to body height squared, expressed as kg/m².

Statistical analysis

The data entry and analysis was done using appropriate software. Mean, Standard deviation and Frequencies were calculated for analysis .Chi square analysis was done to test association between variables and factor analysis was for grouping the variables. A p value less than or equal to 0.05 was considered to be statistically significant for a 95% confidence interval.

Results

The data of a total of 158 adolescents in the age group of 11 to 15 years were analyzed. Out of this 90 (57%) students were female and 67(43%)

were male. The students were from two private schools and one government aided school. The demographic background characteristics are explained in the Table1.

Table 1: Background characteristics of the study population

| Background Characters | Percentage And Frequencies |
|----------------------------|----------------------------|
| Sex of the Children | |
| Male | 57%(90) |
| Female | 43%(67) |
| Caste | |
| Fwd | 15.9%(25) |
| Bc | 56.7%(89) |
| Sc/St | 26.8%(42) |
| Others | 0.6%(1) |
| Income | |
| 2500-10000 | 37.3%(59) |
| 10,000-50,000 | 50.6%(80) |
| 50,000-1,00,000 | 11.4%(18) |
| >1,00,000 | 0.6%(1) |
| Family Size | |
| Nuclear Family | 68.4%(108) |
| Extended Family | 31.6%(50) |
| Class | |
| Seventh | 37.3% (59) |
| Eighth | 38%(60) |
| Ninth | 24.7%(39) |

TABLE 2: Percentage distribution of adolescents according to BMI and sex (male-M, female-F) of the adolescent

| BMI | Underweight | Normal | Overweight | Obese | Total |
|-----|------------------------|-----------|------------|----------|-------|
| M | 12.7%(20) 42.4%(67) | 17.1%(27) | 8.9%(14) | 3.8%(6) | |
| F | 13.9%(22) 57.6%(91) | 24.7%(39) | 15.2%(24) | 3.8%(6) | |
| T | 26.6%(42) 100%(158) | 41.8%(66) | 24.1%(38) | 7.6%(12) | |

TABLE 3: Factors associated with obesity in the study population

| Risk Factor | Risk Category | Body Weight Category | | P Value |
|---------------------------|---------------|----------------------|-------|---------|
| | | Normal | Obese | |
| Monthly Income Of Parents | High | 27.8% | 5.6% | 0.01 |
| | Low | 13.9% | 1.9% | |
| Mode Of Transport | Walking | 14.6% | 6% | 0.001 |
| | Other | 12.1% | 7% | |
| Skipping Breakfast | Yes | 15.8% | 1.9% | 0.0036 |
| | No | 25.9% | 5.7% | |

The prevalence of overweight (BMI 25-29.9) was 24.1% and obesity (BMI equal or greater than 30) was 7.6% among school going adolescent. Over weight was more among females (15.2%) as compared with males (8.9%) and obesity was equally distributed among both gender as shown in table 2. On the other hand prevalence of underweight (BMI <18.5) was 26.4% which is considered as a double burden of nutrition. Chi square analysis showed significant association of BMI with some of the independent variables like monthly income of parents, hours spent in TV (Monday to Friday and Saturday-Sunday), mode of transport, education level of parents and skipping of breakfast with p values less than 0.05 as shown in table 3.

The mean hours spent in watching TV and computers from Monday to Friday was 10.26 hrs (SD-6.6) and on Saturday and Sunday was 6.5 hrs (SD-4.22). Summary of Physical activity was scored in five point scale, which showed mild physical activity was present among 40.5% (n=64) of adolescents, moderate physical activity among 16.5% (n=26) and none reported high physical activity. Moderate physical activity was 20.4% among male compared to 13.4% among females. Skipping of breakfast and BMI was also significantly associated, where among 12 obese children 3 skipped breakfasts and among 38 overweight children 18 skipped breakfast.

Factor analysis helped in grouping the variables in to three groups as mentioned in table 4. All

the variables were positively related with BMI. All the variables in table 4 together contribute 67% to BMI with significant P value less than 0.001. The dietary factors in group one, social factors in group two and physical activity factors in group three were positively related to BMI.

TABLE 4: Factor analysis of independent variables contributing to BMI

| Groups | Variables |
|---------|---|
| Group 1 | Intake Of Fried Items,Nonvegetarian Foods,Junk Foods And Egg |
| Group 2 | Monthly Income Of Parents,Mode Of Transport To School |
| Group 3 | Hours Spent In Watching Tv,Computers,Vedios From Monday To Friday And Saturday And Sunday |

Discussion

Study on obesity among adolescents is important as in pubertal age group of 13 to 15 years, overweight and obesity are marginally higher, perhaps because of increased adipose tissue and overall body weight in children during puberty. In this age group we have the opportunity to identify the problem and prevent disease progression in to adulthood. (19,20,21).

Over all this study showed a prevalence of overweight and obesity as 24.1% and 7.6% respectively among school going adolescent in north Chennai. The overall prevalence of overweight adolescents among the urban group was found to be 9.9%, in a previous study which is consistent with the current study. (22) A similar study in Hyderabad showed the prevalence of overweight as 7.2% among 12 to 17 years of age group. (18) Another study in Delhi's affluent school showed the prevalence as 7.4%. (19) This study also shows the prevalence of underweight as 26.4% in adolescent school children which reflects the double burden

situation and prevalent of under nutrition at a higher magnitude.

Kapil, et al. observed that the overall prevalence of obesity was higher in male than female children. (19) The current study showed no significant difference in overall prevalence of obesity between male and female, but overweight was higher in females than males. One of the major reasons for prevalence of obesity in this study was watching TV and using computers daily. But it was interesting to note that the children were doing less TV watching and computer games during weekends compared to weekdays contrary to intuitive expectation. This is probably because of increased extracurricular activities during weekends. The chi square analysis also showed no significant association between the physical activity and BMI. Similar studies in the past have revealed that regular physical activity was an important factor in reducing the prevalence of overweight and obesity (23,24).

This study has also shown that overweight and obesity was high among children who skipped their breakfast. Therefore there is a need to emphasize good eating practices among children in today's fast paced world.

This study adds evidence to the existing double burden of over and under nutrition among adolescents, which should be considered as serious public health problem. Prevention strategies by enabling environment, promoting healthy lifestyle (physical activity) and diet should be given priority. Health and Nutrition education should be imparted regularly in all the schools.

Acknowledgement

The authors acknowledge the contributions of the Dean- Prof. Satish Kumar Chetlapalli , and, Dr. Bhagwan das for helping in analysis and the

principals of the schools, for giving permission to conduct the data collection for this study.

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Hygiene Behaviour Among Rural Middle School Children In Vandavasi, Tiruvannamalai

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Abstract

Introduction: Good hygiene has been shown to be an essential feature of overall good health. Poor hygiene among children will lead to infections which in turn will hamper their overall growth and development. Therefore good hygiene takes special importance in children. This study was conducted in the rural area of Vandavasi, Thiruvannamalai district to assess the knowledge and practice of hygiene and assessed the association between knowledge and hygiene practices. **Methods:** A cross-sectional descriptive study was conducted among 105 students studying VI, VII & VIII classes using a self-administered questionnaire to assess their level of knowledge about personal hygiene. Each student was individually observed for personal hygiene behaviour & oral hygiene status was examined using mouth mirror and probe as a proxy for overall personal hygiene. **Results:** Approximately 50% students had moderate knowledge and only 12.4% had good knowledge about personal hygiene. About 44% of students practiced good hand washing behaviour and 69.5% followed good hygiene practices such as bathing, nail cutting, brushing and wearing footwear. It was also found by chi-square analysis that students with a good knowledge had good hand washing practices (p value 0.011). **Conclusion:** This study clearly points out the huge gap in knowledge of school children about personal hygiene in a rural area in Tamil Nadu. It emphasizes the need to increase awareness about personal hygiene, which might in turn contribute to reducing the burden of malnutrition and childhood morbidities.

Introduction

The burden of communicable diseases is predominant in developing countries and children are more vulnerable to this. Respiratory infections and diarrhoea are the main cause of more than half of child deaths every year, which is related to poor hygiene practices. Hand-washing especially with soap stops transmission of disease agents and reduce diarrhoea, respiratory, skin, eye and worm infections. Poor oral hygiene may lead to plaque accumulation, gingival bleeding, gingival recession, periodontal infections, caries and eventually loss of tooth at an early age. Apart from maintaining good health good personal hygiene boosts up the self-confidence of children and improves the academic performance of the children.

The UNICEF report, estimated that 591,500 children die from poor hygiene every year in

India, highest in world. One-fourth of deaths among children of age (5-14yrs) in India can be prevented by adoption of hand-washing behaviour. Improper hygiene practices have impact on health, economic and social conditions particularly in children. Diarrhoea and other diseases reduce productivity of the work force and the growth of our country. Hand-washing with soap can be an effective health intervention than any single vaccine. Children weakened by frequent diarrhoeal episodes are also more vulnerable to malnutrition and opportunistic infections such as pneumonia.

This study was conducted in rural middle schools of Vandavasi taluk, Thiruvannamalai district and the objectives of the study was to assess the knowledge and practice of hygiene among middle school children (VI, VII, VIII). In this study hygiene refers to both personal

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hygiene and oral hygiene. Personal hygiene refers to cleaning of all parts of the body (face, hair, body, legs, hand & nails), wearing footwear and oral hygiene refers to keeping teeth and gums clean and healthy.

Methods

This cross-sectional descriptive study was conducted in Vandavasi, Thiruvannamalai during June 20-22, 2011. The study population included 105 boys and girls from VI, VII and VIII classes. The sample size was calculated giving equal chance for prevalence and absence of good knowledge with a confidence level of 95% and 10% error. These classes were selected because communicable diseases are common in young children and it is during this age they begin to do their personal hygiene activities themselves. Study population was selected by multistage sampling, each school was considered as a cluster and three schools were selected randomly and 35 students were selected randomly from each school.

Chief educational officer, Thiruvannamalai district granted permission for the study and informed consent was obtained from the Principals of respective schools, and oral assent from the students was obtained.

Each student was surveyed using a self administered; closed questionnaire which was followed by an oral examination and each student was personally checked for the presence of clean nails, eyes, uniform and footwear. The questionnaire contained questions on background characteristics, knowledge and practice of hygiene and source of information about hygiene. The questionnaire was initially drafted in English and translated to Tamil.

Seven questions were considered from knowledge section, regarding the need to

bath, cut nails, brush teeth, wash hands, wear footwear and clean eyes and ears, choices were scored from 1-4 and was graded as good (20-28), average (15-19) and poor (7-14). Practice of hygiene was obtained in a self reported manner and analyzed separately in two categories, hand washing was one category and other habits such as nail cutting, bathing, brushing and wearing footwear was the second category. Hand washing was assessed based on whether they wash hands always, sometimes or do not wash, it was scored as 2, 1 & 0 respectively. Hand washing before eating, after using toilets and after playing in home and school were considered, 6 questions were considered and it was graded as good (10-12), moderate (6-9) and poor (0-5). Other habits were analyzed based on whether they do it (yes) or don't (no), it was scored as 1 and 0 respectively. Individual hygiene was assessed using a checklist which contained clean nails, clean uniform, clean eyes, wearing footwear. Oral hygiene status was found using OHI-s index, using mouth mirror and probe, six index teeth (16, 11, 26, 36, 31, and 46) were considered. Oral hygiene status was interpreted by summing debris and calculus component and graded as good (0.0-1.2), fair (1.3-3) and poor (3.1-6).

Results

Table 1 shows among the 105 students 48.6% (n=51) were girls and 51.4% (n=54) were boys. Of the total sample 20% (n=21) were in class VI, 42.9% (n=45) were in class VII and 37.1% (n=39) were in class VIII. About 21.9% (n=23) were in the age of 11yrs, 38.1% (n=40) were 12yrs, 38.1% (n=40) were 13yrs and 1.9% (n=2) were 15yrs. Table 2 shows that 12.4% (n=13) had good knowledge about hygiene, 49.5% (n=52) had average knowledge and 4.8% (n=5) had poor knowledge. About 43.8% (n=46)

practice good hand washing, 22.9% (n=24) moderate and 11.4% (n=12) had poor practice of hand washing. Among the students studied 69.5% (n=73) have good hygiene practices, 20% (n=21) moderate practice and 2.9% (n=3) poor practice. Of the students 61% (n=64) wash hands always before meals in school, 36.2% (n=38) wash sometimes. Further 64.8% (n=68) wash hands always before meals at home and 33.3% (n=35) wash hands sometimes. Among the students 45.7% (n=48) wash hands always after using toilets in school, 33.3% (n=35) wash sometimes and 3.8% (n=4) do not wash hands. Among those who wash hands after using toilet at home 61% (n=64) wash always, 31.4% (n=33) sometimes and 4.8% (n=5) do not wash hands. Of the participants 58.1% (n=61) wash hands always after playing at school, 35.2% (n=37) sometimes and 2.9% (n=3) do not wash. About 61% (n=64) wash hands always after playing at home, 35.2% (n=37) wash sometimes and 2.9% (n=3) do not wash. Table 3 shows personal hygiene and oral hygiene which were observed individually. Of the students 62.9% (n=66) had clean nails, 82.9% (n=87) wore clean uniform, 100% (n=105) had clean eyes and 55.2% (n=58) wore footwear. Further 12.4% (n=13) had good oral hygiene, 81% (n=85) fair oral hygiene and 6.7% (n=7) poor hygiene. Table 4 shows that 73% (n=77) said teachers teach them about hygiene, 10.4% (n=11) said parents and 9.5% (n=10) both teachers and parents. Among the respondents 7.1% (n=5) of males had good knowledge, 32.9% (n=23) had moderate knowledge and 1.4% (n=1) had poor knowledge on hygiene. Among females 11.4% (n=8) had good knowledge, 41.4% (n=29) moderate and 5.7% (n=4) poor knowledge on hygiene.

Table 1: Background characteristics of rural middle school children in the study.

| Demographic Variables | n=105 | % |
|-----------------------|-------|------|
| Standard | | |
| VI | 21 | 20 |
| VII | 45 | 42.9 |
| VIII | 39 | 37.1 |
| Age | | |
| 11 | 23 | 21.9 |
| 12 | 40 | 38.1 |
| 13 | 40 | 38.1 |
| 15 | 2 | 1.9 |
| Sex | | |
| Male | 51 | 48.6 |
| Female | 54 | 51.4 |

Table 2: Knowledge & practice of hygiene among rural middle school children in the study

| Characteristics | n=105 | % |
|--|-------|------|
| Knowledge | | |
| Good | 13 | 12.4 |
| Average | 52 | 49.5 |
| Poor | 5 | 4.8 |
| Hand Washing | | |
| Good | 46 | 43.8 |
| Moderate | 24 | 22.9 |
| Poor | 12 | 11.4 |
| Other Habits(bathing, cutting nails, brushing, wearing footwear) | | |
| Good | 73 | 69.5 |
| Moderate | 21 | 20 |
| Poor | 3 | 2.9 |
| Hand Washing before meals at school | | |
| Yes, always | 64 | 61 |
| Yes, sometimes | 38 | 36.2 |
| No | 0 | 0 |
| Hand Washing before meals at home | | |
| Yes, always | 68 | 64.8 |
| Yes, sometimes | 35 | 33.3 |
| No | 0 | 0 |
| Hand Washing after using toilet at school | | |
| Yes, always | 48 | 45.7 |
| Yes, sometimes | 35 | 33.3 |
| No | 4 | 3.8 |

| Characteristics | n=105 | % |
|--|-------|------|
| Knowledge | | |
| Hand Washing after using toilet at home | | |
| Yes, always | 64 | 61 |
| Yes, sometimes | 33 | 31.4 |
| No | 5 | 4.8 |
| Hand Washing after playing at school | | |
| Yes, always | 61 | 58.1 |
| Yes, sometimes | 37 | 35.2 |
| No | 3 | 2.9 |
| Hand Washing after playing at home | | |
| Yes, always | 64 | 61 |
| Yes, sometimes | 37 | 35.2 |
| No | 3 | 2.9 |

Table 3: Distribution of objectively observed personal hygiene characteristics among rural middle school children, Vandavasi, June2011

| Characteristics | n=105 | % |
|----------------------------|-------|------|
| Clean Nails | | |
| Yes | 66 | 62.9 |
| No | 38 | 36.2 |
| Clean Uniform | | |
| Yes | 87 | 82.9 |
| No | 18 | 17.1 |
| Clean Eyes | | |
| Yes | 105 | 100 |
| No | 0 | 0 |
| Wearing footwear | | |
| Yes | 58 | 55.2 |
| No | 47 | 44.8 |
| Oral hygiene status | | |
| Good | 13 | 12.4 |
| Fair | 85 | 81 |
| Poor | 7 | 6.7 |

Table 4: Distribution of source of knowledge among rural middle school children, Vandavasi, June2011

| Characteristics | n=105 | % |
|-----------------|-------|------|
| Teachers | 77 | 73 |
| Parents | 11 | 10.4 |
| Both | 10 | 9.5 |
| Media | 0 | 0 |
| No response | 7 | 6.6 |

Discussion

In this study, middle school children (VI, VII, and VIII) were surveyed to assess their knowledge and practice of hygiene. Among the students surveyed, only 12.4% had good knowledge, 49.5% had moderate knowledge and 4.8% poor knowledge. Of the students only 43.8% had good hand washing habits and other hygienic habits like bathing, nail cutting, brushing and wearing footwear were present in 69.5%. It was also found by chi-square analysis that knowledge was positively associated with hand washing (p value 0.011). From the study we understand only half the population surveyed has good to moderate knowledge on hygiene. Teachers play a major role in promoting knowledge their efforts can still be increased. Role of promoting knowledge and practice by other sources like mass media can also be encouraged and increased. As the study shows there is an association between knowledge and practice therefore improving knowledge will also improve practice of hygiene. The study recommends conducting health programs emphasising the importance and proper practice of hygiene and encouraging the use of soap for washing hands at critical times. Schools can encourage students by providing incentives (prize) for those who adopt good hygienic practices. As most of the hygiene practice depends on resources like availability of water, soap and toilet facilities, steps should be taken to improve these facilities in school. If these targets are met, practice of hygiene among students will be facilitated and thereby the risk of disease will be reduced. Future studies can be conducted for assessing the sanitation and available facilities in schools, relation between morbidity pattern and hygiene practice.

Acknowledgement

The authors acknowledge the contributions and help of Prof. Ch. Satish Kumar, Dr. Anil Kumar

Indira Krishna, the Chief Educational Officer of Tiruvannamalai District, Mrs. Suganya, and the first author's son Rohit Prabhu and their families.

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Assessment of the functioning of the Village Health and Sanitation Committees (VHSCs) in Krishnagiri district.

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Abstract

Background: Village Health and Sanitation Committee (VHSCs) is a village level management structure and its aim is to improve the health status of rural communities by increasing the health system's accountability to the community. **Objectives:** The study was done to assess the health activities performed by VHSC in the previous year in Krishnagiri district, to assess the awareness of VHSC members about their roles and responsibilities and to assess the awareness among the community about the VHSC activities. **Methodology:** This was a descriptive cross sectional study conducted in 5 blocks of Krishnagiri district in Tamilnadu. Totally 15 committees were selected using multi-stage sampling method and 3 committee members i.e., Anganwadi worker (AWW), Village health nurse (VHN) and panchayat president (PP) were interviewed from each committee. From each of the 15 villages 5 community members were interviewed using pre tested- structured questionnaires. **Results:** The awareness level regarding VHSC roles and responsibilities was highest among the VHN followed by Panchayat President (PP) and the least awareness was among the AWW. Almost all of the members were unaware about village health plan. All the VHN were aware of untied fund whereas only few AWW aware of it. None of the VHSC members had received any training regarding constitution of the committees or activities of the committees. There were no monthly meetings conducted regularly and none of the health related awareness programmes and government schemes related programmes were conducted by the committees in past 1 year. The untied fund was utilized mainly for purchasing chlorine tablet, pipeline works in the village. None of the community members interviewed were aware of the committee or its activities. **Conclusion:** The VHSC's need to be improved and supported to achieve the goals of NRHM. Awareness among the community and the committee members themselves is still poor and untied funds are not utilized properly. There is a need for active training of the community and the VHSC members in order to improve the functioning of the grassroots accountability mechanism.

Key words: National Rural Health Mission (NRHM), Village Health and Sanitation Committees (VHSCs), AWW, VHN, Panchayat President (PP), Untied fund, Village health plan.

Introduction

Decentralisation and community participation have been considered important strategies for improving the health status of the population. One of main initiatives of the NRHM is VHSC, to provide funding and power at the community level to make their own plan for providing effective health care.

The aim of VHSC is a local health governance body which comprises of key members of the community and the health system. (1,2) Its main role is to make a participative village health plan for the local administration of the health system at the village level. The government provides Rs 10000/- as untied fund to every village where VHSC is formed for their expenditures and emergency usage. (3) The VHSC works at

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community level which forms a bridge between the community and health system. In India nearly 451,473 VHSC exist of which 15,158 VHSC are formed in Tamil Nadu under NRHM. In 2009-2010 NRHM had spent 1515.8 lakhs untied fund for Tamil Nadu VHSC. (4 ,5,6,7,8)

A study related to VHSC functioning in Orissa found that the awareness about VHSC was highest among the ANMs, ASHAs and the awareness was very low among the Panchayati Raj Institution (PRI) members. None of PRI members or Self Help Group members had received any training regarding VHSC or NRHM. (9)

Another study on utilization of the untied fund of the NRHM to the VHSC done in UP showed that the untied fund was not utilized properly due to lack of guidelines or unavailability of guidelines. Even the medical officer was unaware of untied fund and its usage. The decision regarding expenditure of fund was taken by ANM instead of consulting with other members of VHSC because other members were not aware of possible uses and no training was given to them. (10,11,12)

Tamilnadu is one of the states where NRHM is currently running, but there is no published literature to evaluate the activities and awareness of the community about VHSC. The study was done to assess the health activities performed by VHSC in the previous year in Krishnagiri district, to assess the awareness of VHSC members about their roles and responsibilities and to assess the awareness among the community about the VHSC activities.

Materials and methods

This was a descriptive cross sectional study. Multistage sampling method was used. Out of the ten blocks in the district, five blocks were randomly selected. Out of each of these five

blocks three villages were randomly selected. From each of these three VHSCs the Chairperson of committee (Panchayat President), Secretary of committee (Village Health Nurse) and Convener of committee (Anganwadi Worker) were interviewed using a pretested structured questionnaire. From each of the selected fifteen villages, five community members were selected by purposive sampling with the help of the VHN and they were interviewed with a separate pretested questionnaire. A total of 41 VHSC members and 75 community members responded to the interviews.

Results

The findings of this study have been classified based on designation of the members. The awareness of VHSC functions and its roles and responsibilities was high among the VHN followed by PP and least in AWW as shown in Table 1. The other main VHSC functions like regular monthly meeting, village health plan, untied fund, village health and nutrition day (VHND) , and training programmes was high among VHN followed by PP and AWW.

All the 14 VHNs (100%) were aware of all VHSC functions such as regular monthly meetings, village health plan, untied fund, village health and nutrition day (VHND), and training programmes but only 50 % (7) AWWs were aware of VHSC, only 6 AWWs out of 14 were aware of Regular monthly meeting and untied fund, no AWW was aware of VHP and training programmes and 13 AWWs were aware of VHND. None of the PP were aware of the VHP or the training programmes. Twelve PPs out of 13 (92.3%) were aware of VHSC untied fund and VHND. Ten of the PPs (76.3%) were aware of regular monthly meeting.

The table 3 shows that awareness of community members regarding VHSC activities. More than 90% of the community members were

Table No 1: Awareness of committee members

| Variables | | AWW(14) | PP(13) | VHN(14) | Total |
|--------------------------------|-----|-----------|-----------|----------|-----------|
| Aware of VHSC? | Yes | 7(50%) | 12(92.3%) | 14(100%) | 33(88%) |
| | No | 7(50%) | 1(7.6%) | 0 | 8(22%) |
| Aware of monthly meeting? | Yes | 6(43.2%) | 10(76.9%) | 14(100%) | 30(73.1%) |
| | No | 8(56.2%) | 3(23.1%) | 0 | 11(26.9%) |
| Aware of VHP? | Yes | 0 | 0 | 0 | 0 |
| | No | 14(100%) | 13(100%) | 14(100%) | 41(100%) |
| Aware of Untied fund? | Yes | 6(43.2%) | 12(92.3%) | 14(100%) | 32(78%) |
| | No | 8(56.8%) | 1(7.6%) | 0 | 9(22%) |
| Aware of VHND? | Yes | 13(93.6%) | 12(92.3%) | 14(100%) | 39(95.2%) |
| | No | 1(6.4%) | 1(7.6%) | 0 | 2(4.8%) |
| Training programmes conducted? | Yes | 0 | 0 | 0 | 0 |
| | No | 14(100%) | 13(100%) | 14(100%) | 41(100%) |

Table No: 2 Activities conducted by committee

| | | |
|------------------------------|-----|----------|
| Regular monthly meeting | Yes | 0 |
| | No | 15(100%) |
| House hold survey | Yes | 0 |
| | No | 15(100%) |
| Children and maternal health | Yes | 0 |
| | No | 15(100%) |
| Government programmees | Yes | 0 |
| | No | 15(100%) |
| Birth and death registration | Yes | 0 |
| | No | 15(100%) |

Table No: 3 Awareness of community about activities of VHSC

| | | |
|--------------------------------|-----|-----------|
| Aware of VHSC | Yes | 4(5.3%) |
| | No | 71(94.7%) |
| Aware of nutrition programmees | Yes | 2(2.7) |
| | No | 73(97.3%) |
| Aware of govt programmees | Yes | 4(5.3%) |
| | No | 71(94.7%) |
| Aware of maternal health | Yes | 1(1.3%) |
| | No | 74(98.7%) |

not aware VHSC and its activities. 71(94.7%) community members were not aware of VHSC. Only 2 community members were aware of nutrition programmees, 4 were aware of govt. programmees and only 1 community member were aware of maternal health.

Discussions

The VHSC is formed with the help of community members to increase the accountability of the health system to the community according to NRHM guidelines. (1) The study reveals that the awareness level was very poor among the committee members about its functions and none of the committee members attended training programs regarding the committee constitution and its activities which eventually show low activities carried out by the committees in past one year.

Regarding VHSC committee all VHN (14/14) were aware followed by PP (12/13) where as only half of the AWW were aware of the committee. It was found that non availability of guideline regarding constitution of committee, lack of proper training and orientation programmes, lack of guidelines about untied funds were reasons for lack of awareness among committee members. None of committee members were aware of the village health plan which is the core function of the committee. Similar findings were reported in the study conducted in Orissa. (9)

The present study reveals that, most of committee members were aware of untied funds but they don't have any guidelines regarding utilization of this untied fund. The guideline explains that the untied fund can be used for creating health awareness and for emergency usage whereas it was observed that funds were useful for purchasing chlorine tablet and pipeline works. A study was conducted in Uttar Pradesh regarding awareness and utilization of untied fund, which revealed that the guidelines for untied fund were not available; if available it was not clear. The decision regarding for utilization of untied fund was taken by ANM only (12).

For the past 1 year none of committees conducted any awareness programs because of the inadequate knowledge of the committee roles and responsibilities and lack of proper feedback from higher officials. The reason behind the formation of the committee was to increase the community participation and mobilization and hence to increase the community awareness level. But this study shows that even committee members were not adequately aware of committee activities. The most of members suggest that, PP was not cooperative for getting fund from joint account and they have lot of work and the community people were also not responding properly.

The VHSC is expected to maintain the following registers namely untied grant register, birth and death register, village health register, public dialogue register, and referral register. But only the untied grant register was available in the committee.

The present study showed that, the awareness regarding activities of committee among the community was very poor because of the poor performance of the committee. None of the members from community were aware of VHSCs and its activities.

Community participatory organisations are necessary to improve health status of rural people; unfortunately there is no significant change in awareness regarding health, hygiene and sanitation of people after forming VHSC in villages. The expectation from VHSC is high because it is a community based and decentralized programs but it is failing to deliver the same. This calls for strengthening of committees without much delay.

Abbreviations:

AWW- Anganwadi Worker, **NRHM**-National Rural Health Mission, **PP** -Panchayat President,

PLCC-Panchayat Level Convergence Committee, **VHSC** -Village Health and Sanitation committee, **VHP** – Village Health Plan, **VHN** -Village Health Nurse, **VHWSC**-Village Health Water and Sanitation Committee.

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Transformation of Domestic Violence From Abused Mother to Child

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Abstract

Background: Violence against women is a serious issue in which many studies have been done but transformation of violence from abused mother to child is unexplored where till now not much literature is available. **Objectives:** The study was undertaken to determine the prevalence of transformation of violence from abused mother to child and with what intensity it is transformed. **Study design:** A cross sectional descriptive study was undertaken by interviewing 150 married women in Ooty, Nilgiri district, Tamilnadu using a pre tested structured questionnaire. **Results:** The most prevalent forms of violence experienced by the mothers was violence in the form of control by their husband experienced by 100%, emotional violence by 59%, physical violence by 44%, financial violence by 41%, and sexual violence by 33%. The prevalence of transformation of violence from abused mother to child was 92%. The transformation of violence was in the form of verbal violence contributing to 61% and physical violence to 24%. The power of transformation was mild in 66% and severe in 8%. **Conclusion:** There is high prevalence of transformation of violence from abused mother to child which emphasizes the need for further research studies and need for women's empowerment which would most effectively address the problem of domestic violence and indirectly the problem of transformation of violence from the abused mother to child.

Keywords: Domestic violence, Transformation, Mother to child

Introduction

Women and children are often in great danger in the place where they should be safest within their families. For many, 'home' is where they face violence at the hands of somebody close to them – somebody they should be able to love and trust. Those victimized suffer physically and psychologically. They are unable to make their own decisions, voice their own opinions or protect themselves and their children for fear of further consequences. Their human rights are denied and their lives are stolen from them by the perennial threat of violence.

The prevalence of domestic violence in India is 37% and among the states of high prevalence Tamilnadu has a 42% prevalence rate. (1)

"Estimates are that more than **3.3 million**

women are exposed to physical and verbal spousal abuse each year" (2)

Various studies on domestic violence, its effect, consequences and even children's exposure to violence have been conducted but no research study has been done on transformation of violence from abused mother to child.

Domestic violence against women also has serious implications on children witnessing the violence. Older children are frequently assaulted when they intervene to defend or protect their mothers. Female children are at particular high risk.

It has been found that infants who witness violence not only develop health problems but also suffer behavioral disorders, emotional trauma, and educational difficulties.(3)

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Conservatively, at least 10% to 20% of children are estimated to be exposed every year to domestic violence, with as many as one third of those exposed at some point during childhood or adolescence. (4)

The resilience literature suggests that as assets in the child's environment increase, problems he or she experiences may actually decrease. Protective adults, including the child's mother, relatives, neighbors and teachers, older siblings, and friends may play protective roles in a child's life, as does the child's larger social environment, if it acts to provide support or aid to the child during stressful times.

This study determines the prevalence of transformation of violence from abused mother to child and the intensity of it. It also estimates the forms of violence experienced the most by married women and in what form they transform it to the child.

Materials and Methods

This study was done using a descriptive cross sectional design, in the villages of Ooty panchayat, Nilgiri district, Tamilnadu between June 5th to July 5th 2011. All married women in the Badaga community in Ooty aged 15 to 45 years and having a child of 5 yrs and above were enrolled in the study. A pre-designed, pre tested structured questionnaire was used for the study. The questionnaire comprised of two sections; the first included the descriptive features of the woman and her husband. The second included questions about physical violence, sexual violence, emotional violence, financial violence and husbands controlling behavior within the last one year. The final component was about transformation of the violence to the child.

A stratified sampling scheme was used with 12 blocks under Ooty panchayat. Three strata were formed proportionately including 4

blocks in each stratum. From each block 2 villages were selected randomly thus totally 24 villages were visited. From each village the household selection was done by systemic random sampling in which the first household was selected randomly and then every 5th household was interviewed. The total number of successfully interviewed married women were 150, n=150. Data collected were collated and analyzed statistically. Chi square test has been used having the statistical significance set at $p < 0.05$.

Verbal informed consent was obtained from the women. To ensure privacy the interview was conducted in private in the household in a non judgmental manner.

Results

Background characteristics of the studied women (n=150) are presented in Table 1. Among the married women 29% were from the age group of 26-30yrs and 22% 41-45yrs. The age at marriage of majority of women (71%) was found to be between 15-19yrs and 25% at the age group of 20-24yrs.

All women in the study knew to read and write. Among them 39% had completed their high school and 39% higher secondary school of education. About 31% were self employed and 2% worked in government or private sector. About 67% of women were house wives.

The most prevalent form of violence among the married women was violence in the form of control which was reported by 100% of the women.

The next most prevalent form of violence was emotional violence contributing 59%, financial violence 41%, physical violence 44% and sexual violence 33%. Each form of violence and its percentage distribution are given in Table 2.

Table 1: Demographic characteristic of the respondent

| | |
|---------------------------|-------|
| Age | % |
| 21-25yrs | 16% |
| 26-30yrs | 29.3% |
| 31-35yrs | 16% |
| 35-40yrs | 16% |
| 41-45yrs | 22.2% |
| Education status | |
| Up to primary school | 8.1% |
| High school complete | 39.3% |
| Secondary school complete | 38.7% |
| Any degree | 14% |
| Age at marriage | |
| 15-19yrs | 71.3% |
| 20-24yrs | 24.7% |
| 25-29yrs | 0.7% |
| 30-34yrs | 3.3% |
| Duration of marriage | |
| 5-14yrs | 61.3% |
| 15-24yrs | 28.6% |
| 25-34yrs | 10% |
| Occupation | |
| Self employed | 31% |
| Unemployed | 20% |
| Never worked | 47.3% |
| Govt/private sector | 2% |

Table 2: Percentage distribution of various forms of violence

| | Number | Frequency |
|---------------------------------|--------|-----------|
| Violence in the form of control | 150 | 100% |
| Emotional violence | 88 | 58.7% |
| Physical violence | 66 | 44% |
| Financial violence | 62 | 41% |
| Sexual violence | 49 | 32.7% |

The prevalence of transformation of violence from mother to child was found to be 92%. The forms of transformation were 61% verbal and 24% physical. The intensity of transformation was classified as mild, moderate and severe. About 66% was mild and severe was 8%.

Discussion

The study revealed a prevalence of transformation of violence from abused mother to child of 92% which is too high in the present society. Even though the violence received from the husband differs in various forms the major mode of transformation to the child was either emotional or physical.

The transformation of violence from mother to child was obtained by asking the mother directly that immediately after receiving the abuse from their husband what was their reaction and if they carry it over to the child in what form do they express it, which clearly brought out whether it was due to the abuse received from the husband and not due to any other reasons.

The transformation might be due to the reason that the mothers had no other choice other than expressing their emotions out to their children. It may be also that the mothers react to their children immediately after receiving the abuse from their husband because they are the only ones who stay close to them during the act of violence.

Transformation of violence to the children is a public health issue which affects the children physically and emotionally which brings about changes in the behavior and lead them to depression and other behavioral problems which in turn pave way for indulging in anti social activities.

It is clear from the findings of this study that domestic violence is not only a problem affecting the women but also affects the children both directly and indirectly transformation of the violence to the children can be detrimental to the physical, psychological and emotional health of the children. Thus there is a need to address the domestic violence issue at large and the issue of transformation of violence to the children.

Conclusion

Many civil society organizations, women welfare organizations and media must undertake important activities by means of campaigns and training program in order to demonstrate the positive impact of reducing violence against women on individuals and the society as a whole and also create awareness of the fact that each individual has responsibility in this subject matter.

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Assessing the Health Status Among IT Professionals in Chennai

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Abstract

Objective: To assess the health status among IT professionals in Chennai. **Study Design:** Descriptive cross-sectional study of 91 sample of IT professionals aged 20 – 50 years. **Materials and Methodology:** This is a descriptive cross sectional study conducted among IT professionals over a period of one month June 2011. Sampling was done by multistage sampling method to get a sample size of 131. A pretested self administered questionnaire on morbidity among the IT professionals was used for data collection. **Results:** Over all this study showed a 52% prevalence of musculoskeletal problems, 31.9% eye problems and 52.2% stress among IT professionals in Chennai. **Conclusion:** Based on the present study it was evident that high morbidity attributed to computers is found among IT professionals and is a matter of significant concern.

Key words: IT, Stress, Musculoskeletal problems, Eye problem

Introduction

The rapid development of information technology has entailed changes in working life during the recent decades. It is estimated that more than half of the working population in Western societies currently use personal computers at work. Additionally, the relative time spent in front of the computer and the use of a computer mouse has increased rapidly over the years (1). It is likely that these developments may have contributed to the increasing burden of disease. Wide range of complaints among information technology professionals are musculoskeletal problems, eye problems and stress which can differ in severity from mild, periodic symptoms to severe, chronic and debilitating conditions.(1) They are thought to be associated with both physical and psychosocial risk factors. The identification of the various risk factors for these complaints is an important step to develop targeted and effective intervention plans to reduce these complaints. From a cohort of university students on the basis of reporting high computer (n = 28) or mobile phone (n = 20) use at baseline a high reporting of mental symptoms was observed at the end of one-year follow-up (2).

A cross sectional study was done among 200 Information Technology (IT) professionals in the National Capital Region (NCR) to study the

computer related health problems and role of ergonomic factors. The computer related morbidity was present in 93% of the study subjects. The visual problems were seen in 76% and musculoskeletal in 77.5% while 35% felt stressful symptoms. (3) The purpose of the present study is to assess the prevalence of health problems among IT professionals in Chennai.

Materials and Methods

The study was conducted in south Chennai and study organizations were selected randomly. The study design is descriptive cross sectional study. A total of 131 individuals were invited to participate and only 91 responded. The non response rate was 30%. The study subjects were drawn from Cognizant Technology Solutions (51), Civil System Corporation (CSC) (20) and Zylog System Ltd. (20). The inclusion criteria for participants to be considered for the study were they should be working in the current job for at least 3 months. He/she should be working on the computers for at least 3 h/day or 15 h/week. The study subjects were administered, a pre designed, pre tested semi structured questionnaire covering details like age, working hours, working environment, experiencing of any problem while working on computers and the type and kind of problems perceived. The questionnaire also focussed on domains

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of health problems such as musculoskeletal problem, visual problem and stress. The musculoskeletal pain was assessed by visual analog scale. Stress was measured using depression Zinks self training scale (1). The working environment of each individual was assessed separately through questions about position of monitor, distance of monitor from the user, type of chair, use of foot rests, arm rest, back and thigh support, number of breaks, and manner of holding the mouse(4).

Statistical Analysis

The data were analysed using appropriate statistical packages. Percentage and Frequencies were calculated for analysis. Chi square analysis was done to find association between variables. A p value less than or equal to 0.05 was considered to be statistically significant for a 95% confidence interval.

Result

The study involved 91 participants who were selected from three IT organizations of which 62(68.1%) were males and 29(31.9%) females.

Table-1 Background Characteristics

| Background Characteristics | Frequency(n) | (%) |
|----------------------------|--------------|---------|
| Age | | |
| 20-30 | 75 | 82.4% |
| 30-40 | 9 | 9.9% |
| 4. 40-50 | 7 | 7.7% |
| Sex | | |
| 1.Male | 62 | (68.1%) |
| 2.Female | 29 | (31.9%) |
| Working Hour | | |
| 1.Less Than 8 Hour | 5 | 5.5% |
| 2.8Hours | 13 | 14.3% |
| 3.More Than 8 Hours | 73 | 64.8% |
| Experience | | |
| 3-6 Month | 22 | 24.4% |
| 6 -12 Month | 9 | 9.9% |
| 3 .More Than One Year | 59 | 64.8% |

Table-1 shows the characteristics of the study population. The age of the professionals varied from 20 to 50 years and majority of the subjects

were in the age group between 20- 30 (82.4%), 9.9% were in 30-40 years age and 7.7% in 40-50 years age. The duration of computer usage was 22(24.4%), 9(9.9%) and 59(64.8%) in the range of 3-6 months, 6-12 months and above 1 year respectively. Also, the proportion of people using the computer for less than 8hrs, 8hrs and more than 8hrs was 5(5.5%), 13(14.3%), 73(80.6%) respectively.

Table-2 Distribution of Musculoskeletal Problems Among The It Professionals

| Background Charac- teristics | Frequency(n) | | (%) | |
|---------------------------------|--------------|----|-------|-------|
| | Yes | no | yes | no |
| Age | | | | |
| 20-30 | 41 | 33 | 45.1% | 36.3% |
| 30-40 | 3 | 6 | 3.3% | 6.6% |
| 4. 40-50 | 4 | 3 | 4.4% | 3.3% |
| Sex | | | | |
| 1.Male | 39 | 23 | 42.9% | 25.3% |
| 2.Female | 9 | 19 | 9.9% | 20.9% |
| Experience | | | | |
| 3-6 Month | | | | |
| 6 -12 Month | 2 | 2 | 2.2% | 2.2% |
| 3.More Than One Year | 10 | 3 | 11.0% | 3.3% |
| 36 37 39.6% 40.7% | | | | |
| Working Hour | | | | |
| 1.Less Than 8 Hour | 8 | 14 | 8.8% | 33.3% |
| 2.8Hours | 8 | 1 | 8.8% | 1.1% |
| 3 . M o r e Than 8 Hours | 32 | 27 | 35.3% | 27.9% |

Table-2 shows that 52.7% among 91 participants experienced pain at work. The percentage of subjects experiencing pain was higher in males (81.1%).The sites of pain perception among 48 computer users was found to be: pain in neck (27%), back (36.6%), shoulder (29.7%) and others (7.7%). Also, 48 (52.7%) participants opined that having musculoskeletal pain was due to the long hours of work. The results also showed that 82.6% of the subjects who experienced pain gave history of working more

than 8hrs. The pain percentage was higher in experienced professionals who reported to have been working more than 1yr (75.0%).

Table-3 shows that 31% of the whole group experienced eye problem at work while using the computer. The percentage of eye problem was higher among males (68.1%) compared to females (32.9%). Also, 29 (31%) participants opined that having eye problems was due to the long hours of work. 55.2% who had eye problem were reported to be working more than 8hrs per day. The percentage of eye problems was also higher in experienced professionals who have been working more than 1yr (82.8%).

Table-3 Distribution of Eye Problems among the IT Professionals

| Background Characteristics | Frequency(N) | | (%) | |
|----------------------------|--------------|----|-------|-------|
| | yes | no | yes | no |
| Age | | | | |
| 20-30 | 25 | 49 | 27.5% | 53.8% |
| 30-40 | 2 | 7 | 2.2% | 7.7% |
| 4. 40-50 | 2 | 5 | 2.25 | 5.5% |
| Sex | | | | |
| 1.Male | 19 | 43 | 20.9% | 47.3% |
| 2.Female | 10 | 18 | 11.0% | 19.8% |
| Experience | | | | |
| 3-6 Month | 0 | 4 | 0% | 4.4% |
| 6 -12 Month | 5 | 8 | 5.5% | 8.8% |
| 3.More Then One Year | 24 | 49 | 26.4% | 53.8% |
| Working Hour | | | | |
| 1.Less Then 8 Hour | 8 | 14 | 8.8% | 15.4% |
| 2.8Hours | 5 | 4 | 5.5% | 4.4% |
| 3.More Then 8 Hours | 16 | 43 | 17.6% | 47.4% |

The stress status of participants was measured by Zung's self rating scale. Stress levels are classified as normal, mild, moderate, and severe. This study shows 3% mild stress level, 45% moderate stress level, 52% severe stress level among 91 respondents. The high stress level was in 40% of males as compared to female. The stress level was higher among those who have been working more than 1yr (34.1%).

The computer ergonomics was also the part of questionnaire which included details about foot rest, arm rest, back support, thigh support and neck position. The details are shown in table 4.

Table-4 Ergonomic Facilities not Provided for the IT Workers

| Facilities | Not Provided |
|---------------|--------------|
| Arm rest | 14.3% |
| Foot rest | 71.4% |
| Back support | 6.6% |
| Thigh support | 17.6% |
| Neck position | 18.5% |

Discussions

Over all this study shows prevalence of musculoskeletal problems (52%), eye problem (31.9%) and stress (51.2%) respectively among IT professionals in Chennai. A similar study conducted in Delhi revealed common problems seen as musculoskeletal (77.5%) and visual (76%) followed by stress (35%).

Prevalence rates of computer related problems in various studies depended upon factors like computer ergonomics, experience, and working hours. It was observed that occurrence of visual problem is related more to number of hours spent in front of the computer screen, experience and gender of the professionals . On the other hand, musculoskeletal symptoms are related to computer ergonomics, improper posture of workers. The problem of musculoskeletal pain was higher among males compare to females.

Even though the computer workstations observed in this study had chairs and tables with proper heights and angles, they were still not up to standard in literature because most of the stations did not have facilities like

arm rest 14.3%, foot rest 71.4%, back support 6.6%, thigh support 17.6%, neck position 18.5%, which are basic parts of proper computer chairs and tables. Another study opined that levels of ergonomic knowledge and the priority given to ergonomic computer use were low in IT industry irrespective of location. Good posture according to that study is one, which most naturally suits the body, and it is the basis of good workstation ergonomics and the best way to avoid a computer-related injury.

Musculoskeletal complaints in particular, were more common among men (42.8%) than among women (25.5%). This gender difference was observed even though women and men were working in the same institute and had the same job titles. This might be because a lot of the men probably assumed bad postures when working on the computer as evidenced by the poor common computer working environment observed in this study. Even though all of the computer workstations observed in this study had chairs and tables with proper heights and angles, they were still not used properly. Another study confirmed our findings, showing the prevalence of among men 72% compared to women. In the present study the level of stress was higher in male participation compare to female. This result was confirmed by another study on occupational stress among IT professionals (5). The prevalence of visual fatigue was 31% in present study. A previous study found the prevalence of visual symptoms (75%) in Information Technology professionals in India (1). The association between long working hours, experience and stress were highly significant and a previous study from Cincinnati also found the same result (3).

Based on the present study it is evident that very high morbidity attributed to computers has already taken roots in IT professionals and is a matter of great concern. This study has also focussed on ergonomic factors contributing to the occurrence of these problems. The study has also brought forth that all aspects of workstation appear to be acting in cohesion in relation to computer related health problems.

There is an immediate need for the concerned agencies to collaborate and enforce suitable preventive measures. Almost all the subjects were not aware about the correct ergonomics and preventive aspects of these problems. There is a need for constant monitoring and periodic appraisal of health Problems in IT professional to take appropriate remedial measures at the earliest.

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Immunization Status of Children Visiting A Health Centre in Uri-Sector Jammu & Kashmir: Reasons for Drop-Outs From Immunization

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Abstract

Background: Immunization is one of the most powerful tools available to improve public and global health. It is one of the most cost-effective methods in preventing fatal diseases in children, influencing the reduction of Infant Mortality Rate (IMR). **Objective:** The objective of the study was to estimate the immunization status and factors effecting drop-outs from immunization in children residing in Uri-sector, in Baramula district, Jammu & Kashmir. **Method:** It was a facility based cross-sectional descriptive study design, with a sample size of 160 children between 12 to 23 months of age. The study included all the mothers visiting the health centre with children between the above given age. The immunization status was assessed depending upon the coverage of four important vaccines given during primary immunization (i.e.) BCG, OPV, DPT and measles. **Results:** The study showed that the total primary immunization status of Uri-sector was 58.12% with 91.2% OPV, 88.1% BCG, 72.5% DPT and 58.8% measles immunization. The main factors effecting drop-outs from immunization were distantly located health centre (27.9%), poor motivation (33.12%), lack of awareness (9.77%), and parental refusal (in case of OPV was 5.35%). Factors like antenatal care and information provided on immunization during antenatal visits enhanced the rate of complete immunization of the child. The study also revealed that literate parents (especially mothers) were more likely to get their children completely immunized. Gender discrimination towards complete immunization of children was not observed in the study. **Conclusion:** The findings suggest that immunization status needs to be improved by focussing on vaccines having low prevalence (DPT and measles), and people need to be made aware of the importance of completely immunizing their children against the fatal yet preventable diseases. Drop-outs from immunization need to be reduced by making available outreach camps in distant places and motivating the public to get their children completely immunized with the help of community workers.

Key words: immunization, health, Jammu & Kashmir.

Introduction

Immunization forms a critical component of primary health care, and ensures nation's health security. It is a cost effective means of ensuring sound health of the community against many vaccine preventable diseases. This study focuses on the coverage of four important vaccines- BCG (Bacille Calmette-Guerin), DPT (Diphtheria, Pertussis, and Tetanus), OPV (Oral Polio Vaccine), and measles vaccine. Studying the status of immunization against these six dreadful, yet preventable diseases can help understand the level of knowledge, awareness of the public,

availability and acceptance of these vaccines in the community. Although international agencies such as the World Health Organization (WHO), the United Nations Children's Fund (UNICEF) and now the Global Alliance for Vaccines and Immunization (GAVI) provide extensive support for immunization activities, the success of an immunization program in any country depends more upon local realities and national policies. Reasons for the low coverage of immunization vary from logistic ones to those dependent on human behaviour.(1) A study done on the children admitted to the paediatric ward of a

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hospital in Delhi showed that lack of knowledge regarding complete immunization is the main cause of drop-outs from immunization.(2) India, is according high priority to immunization, however, results remain far from satisfactory and regional imbalances are quite sharp.(3) Jammu and Kashmir State generally, and its backward areas especially, are considered poor performers in the health sector. This study was carried out on a small population residing in Uri-sector (district Baramula), Jammu & Kashmir, which is one of the most terrorized districts of the state. It has an altitude of 4471 feet with a population of more than 60,000 (census 2001).

Previous studies have shown that the likelihood of immunisation increases with urban residence, mother's education level, mother's age, mother's exposure to mass media, mother's awareness about immunisation, antenatal care during pregnancy, SLI or wealth index, household electrification, mother's empowerment index, and caste/ tribe hierarchy.(4) In Kashmir, the government hospitals, private clinics and the Military hospitals provide immunization facilities for children.

The main objective of this study was to assess the immunization coverage of the children visiting a health centre in Uri-sector and to assess the factors causing drop-outs from immunization.

Method

This study was done in the military hospital (ADS Rampur), based at Rampur (Uri-sector). The hospital is responsible for the health of all the residents of Uri-sector; which comprises of 50 villages and nearly 30,000 population. The study was done by a cross-sectional descriptive design. A systematic sampling technique was used. Around 100-120 patients visited the military hospital's paediatric ward for various ailments each day, out of which about 60 were

mothers having children between 12-23months, 12 out of these, 60 mothers were chosen for the sample by picking every 5th mother out of the 60 from the paediatric clinic. This procedure was carried out for 14 consecutive days to attain a sample size of 160. The mothers who were resident of villages in Uri-sector and had children between the defined age limit, were included in the study, rest were excluded. Demographic, literacy, and social factors were recorded using a questionnaire, which had been pretested at SRM paediatric ward, Chennai. Questionnaire was used to assess the immunization level in the region. The immunization status of the enrolled participants was assessed as per the national immunization programme and the primary respondents to the questionnaire were the mothers. Mothers were asked about the vaccines and the number of times the vaccines were received by the child, and the record was verified by cross-checking the vaccination cards of the children. Children, who had received one dose of BCG, three doses of DPT, four doses of OPV and one dose of measles, were classified under the category of fully immunized. Those who had missed any of the above doses were labelled partially immunized and those who received no vaccines at all were labelled non-immunized. If the child was partially immunized or not immunized, reasons were noted by free listing and IPC (inter personal communication). Maximum number of children in the sample frame was between 21-23 months as shown in table I.

Table 1 : Age related percentage distribution of sampled children (n=160)

| Age (in months) | Number of Children | Percentage(%) |
|-----------------|--------------------|---------------|
| 12-14 | 31 | 19.2 |
| 15-17 | 19 | 11.8 |
| 18-20 | 49 | 30.5 |
| 21-23 | 61 | 38.1 |

Results

Immunization Coverage

The total immunization coverage in the sampled population was 58.12%, with OPV being the highest 91.2%, BCG being 88.1%, DPT was 72.5% and measles being the lowest 58.8%.

Factors effecting immunization drop out

The main factors effecting drop-outs from immunization were poor motivation (33.12%), distantly located health centre (27.9%), lack of awareness (9.77%), and some combined reasons were, poor motivation and distantly located health centre (22.25%), lack of awareness and distantly located health centre (3.4%), and parent refusal (in case of OPV was (5.35%). These details are shown in table II.

Table 2: Most frequent reasons for partial immunization/non-immunization

| Reasons | Number of Non/Partially Immunized children | Percentage of Non/Partially Immunized children |
|---|--|--|
| Poor motivation | 45 | 67.16% |
| Distantly located health centres | 39 | 58.20% |
| Lack of awareness | 18 | 26.86% |
| Poor motivation & distantly located health centre | 33 | 49.25% |

Gender

The study interestingly revealed that there was no gender discrimination in immunization of children and male and female children had nearly the same immunization level as can be seen in table III.

Table 3: Relation of gender with immunization coverage (n=93)

| Sex | Total number immunized | Percentage immunized |
|--------|------------------------|----------------------|
| Male | 47 | 50.53% |
| Female | 46 | 49.46% |

Table 4: Comparison of evaluated coverage of immunization between J&K State and Uri-sector

| Vaccines | Uri-sector (%) | J&K (%) (NFHS-III) |
|----------|----------------|--------------------|
| BCG | 88.1 | 90.9 |
| DPT | 72.5 | 82.2 |
| OPV | 91.2 | 84.5 |
| Measles | 58.8 | 78.3 |

Discussion

It was found that coverage of immunization in the Uri-sector was low. The National Family Health Survey 3 (NFHS-3) revealed immunization coverage of 67% in Jammu and Kashmir which is much better than the national average of 44%.⁽⁵⁾ But regional disparities do exist within Jammu and Kashmir. Distance played a major role in lowering the motivation for immunizing the child, and poor motivation was the most common reason for incomplete immunization among children in Uri-sector. Distance and motivation have been a major factor influencing the immunization level in the entire state and a study done in Kargil, revealed the same results.⁽⁶⁾ The area of study being a hilly terrain, has a lot of constraints such as the absence of proper transportation to the near-by health centres, and hence reduces the motivation among parents to get their children immunized. Terrorism may also be one of the reason leading to low motivation among local people in seeking health facilities and immunizing their children. Places secluded and distantly located may be under the threat of terrorism and Uri and places around Uri (Uri-sector) are located very close to the PoK (Pakistan occupied Kashmir) and hence, a lot of militant activities and ambush occur in

the region, leading to poor access to health facilities by the locals.

It was interesting to know that gender did not play any role in immunization of children in Uri-sector region and was contradictory to the result of the study done on the EAS and North Eastern States, where gender discrimination resulted in lower immunization rate among girls than boys. The finding was similar to the results of the study on immunization status done in Kargil, which clearly indicated no gender discrimination among children while administering vaccination.⁽⁶⁾ Awareness and knowledge among mothers regarding source of immunization and the right age of immunization for their children was found to be considerably low. This may be due to low availability of outreach programs in the region due to difficult terrain and distantly located villages, leading to low awareness among the local population. This factor needs to be assessed by carrying out research on the general population of the region, as lack of awareness and knowledge about vaccines has been another major cause for drop-outs from immunization, in previous studies done in a tertiary care centre as well as in slums of Delhi, where low immunization rate among children was mainly due to poor awareness among mothers regarding the right schedule and age of vaccine administration.⁽²⁾

The total primary Immunization level came quiet below the State's Immunization level of 67% as stated by the NFHS-3 report (Table IV).⁽⁵⁾ All the vaccines have a lower record than the NFHS-3 data, except OPV, which is nearly 92% in Uri-sector (as assessed by the current study).

The main suggestion from the study is the need to improve the status of immunization in the region by outreach health camps and by IEC

activities to spread awareness regarding the importance of immunizing a child, which invariably will improve the motivation among the public. Outreach camps need to be organized especially in villages located remotely from health centres. The study was conducted in a facility and therefore it is highly likely that the immunization coverage reported is spuriously higher than the other children who do not access health facilities. A community based survey would probably reflect the true picture of immunization coverage in this area.

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The Tamil Nadu Government Health Insurance Scheme “Kalaingar Kapitu Thittam” : Perception & Experiences Among Beneficiaries

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Abstract

Background: The government health insurance scheme of Tamil Nadu named as Kalaingar Kapitu Thittam (KKT) has converted the dream of access to quality medical care into reality and provided financial protection against high medical expenses for the below-poverty-line (BPL) population. **Objectives:** To determine the KKT user's perception about the scheme and the benefits gained through it, to identify the experiences of the beneficiaries while utilising the insurance scheme and also to elicit recommendations and suggestions for improvement of the KKT user's. **Materials and methods:** A cross-sectional descriptive study was done among beneficiaries of the scheme in Chennai by snowball sampling. A total of 67 respondents answered the self administered questionnaire. The data was entered and analysed using EPI info and SPSS software. **Results and Analysis:** Analysis showed that among the beneficiaries in the sample 67% had good experiences and 58% had a good perception followed by 37% of people having moderate perception about the scheme. About 32% of user's felt that the program is good and helpful and 22% suggested that full insurance should be given for expensive surgeries, whereas currently only part of the amount was insured. **Conclusion:** More than half the beneficiaries of the scheme had satisfaction and good perceptions about it. There are several areas of improvement for the program and any further health insurance schemes for the people below poverty line.

Introduction

Healthcare industry in India is growing at a rapid pace. Health insurance as a tool to finance health care has very recently gained popularity in India. The upsurge in breadth of coverage can be explained by a serious effort by the Government to introduce health insurance for the poor in last four years. This marks a major milestone in the financing of health care in the country. In India, currently any form of insurance cover approximately 302 million individuals or 25 percent of India's population in 2010.

Kalaingar Insurance Scheme of the erstwhile Tamil Nadu government, (commonly called as Kalaingar Kapitu Thittam) for Life Saving Treatments has converted the dream of access to quality medical care and providing cashless insurance protection against high medical expenses into a reality for the below-poverty-line (BPL) population of Tamil Nadu.

Totally 1.4 crore families were enrolled and smart cards provided. This scheme was implemented on a public private partnership mode involving the insurance company, the network of empanelled private sector hospitals and the state agencies.

Kalaingar insurance scheme was launched in June 2009 for the entire state of Tamil Nadu. As per the scheme documents and reports KKT covered 84% of the health insurance usage in Tamil Nadu. The target/eligible population included the BPL families having annual income less than Rs.72,000 and also families of members of 26 welfare boards. Total number of beneficiaries was found to be about 30 million until Sep 2010 and total expenditure for 2010-2011 was found to be around 750crores. The unit of enrolment under the scheme was the whole family and maximum insurance money covered is Rs.1,00,000 for four years per family. The benefit package included 642 surgical

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procedures for various treatments under 51 categories of diseases were covered. The criteria of hospital empanelment was having minimum of 50 beds. The total number of hospitals covered were 663 which included 20 government hospitals and hospitalization per year was found to be 1,53,410 in (2009-10). Estimates revealed that the average cost per hospitalization was Rs.33,720 and the premium rate is Rs.469. The executing agency is Star health and implementing agency is TN health systems society.

There were no studies done earlier based on the functioning of Kalaingar insurance scheme. The present study was done to know the degree of satisfaction of the beneficiaries on the health care services received through Kalaingar insurance scheme.

It was further designed to know the user's perception about the scheme and the benefits gained through it. Another objective was to identify the experiences faced by the beneficiaries while utilising the insurance scheme and to elicit recommendations and suggestions of the KKT user's which will be helpful to improve the effective functioning of the scheme and future health insurance schemes for people below poverty line.

Methodology

This is a cross-sectional descriptive study done in Chennai and the study population includes only the beneficiaries of Kalaingar insurance scheme. The study period was one month i.e. June 2011. The sampling methodology followed was snow ball sampling as there was no accessible list of beneficiaries of this scheme from the Government or the

Star health insurance company. Out of a total of 96 individuals identified, 67 responded to the questionnaire.

The study tool included a self-administered questionnaire which contained 3 and 5 likert scale questions which were pre-tested before finalising the questions. During data collection informed consent was obtained from the respondents of the survey.

The questions were classified as perception and experiences related ones. The perception questions were on usefulness of camps conducted, effectiveness of issuing smart card to people, and the beneficiaries' opinion on the process.

Their perceptions regarding the health care system improvement by the T.N. Govt in the upcoming years were noted and the new government's decision of dropping KKT and their opinion on it.

The experience related questions were on the enrolment process, hospital admission procedure experiences, their satisfaction with the hospital services and whether their health needs have been met or not. Their satisfaction regarding the allocation of money for the family members, for the period of four years was asked and then the timeliness of access to care was seen among the beneficiaries.

For analysis the questions were converted into 3 likert scale by using negative scoring method. The experience questions were classified as good, neutral and bad and the score ranges from 6-18 in it. Perception related questions were classified as good, moderate and bad perception with the scoring range from 5- 18.

Results

The basic characteristics of the study were shown in the Table 1 which reveals that more than half of the beneficiaries were female 55% (37). Among those beneficiaries 24% (16) belonged to one or other of 26 welfare boards.

Table 1: Background characteristics of the Respondents:

| Background Characteristics | Frequency(n) N= 67 | Percent(%) |
|--|-------------------------------------|-------------------|
| Sex | | |
| Male | 30 | 45% |
| Female | 37 | 55% |
| Age | | |
| <20 years | | |
| 20-40 years | 16 | 24% |
| 40-60 years | 22 | 33% |
| >60 years | 17 | 25% |
| | 12 | 18% |
| Annual Income of the beneficiaries family | | |
| 20,000-40,000 | 5 | 8% |
| 40,000-60,000 | 11 | 16% |
| 60,000-80,000 | 15 | 22% |
| 80,000-1,00,000 | 22 | 33% |
| >1,00,000 | 14 | 21% |
| Members of the Welfare board | 16 | 24% |
| Duration of the hospital stay | | |
| 1-4 days | 13 | 20% |
| 4-7 days | 27 | 40% |
| 7-10 days | 17 | 25% |
| > 10 days | 10 | 15% |

About 40% of the beneficiaries stayed in the hospital a minimum of 4-6 days which was followed by 25% staying 7-10 days. The results on the money insured to the beneficiaries shows that 61% of them had got the whole money spent on the surgery and the remaining 39% had received only limited amount from the insurance company.

About 20% of the beneficiaries had an annual income greater than 1,00,000. Surgeries

undergone by beneficiaries were grouped into different categories such as therapeutic 37% (25), palliative 33% (22) and reconstructive 30%(20) surgical procedures.

The source of knowledge of beneficiaries about the scheme was mainly from friends and relatives (36%) and through hospitals (24%) and the hospital selection was mainly done by doctor's recommendations (46%) and through past visit experiences (22%). This is shown in Figure 1. Figure 2 explains the way the beneficiaries got the smart card. The card was applied and obtained by 28% and 6% got it through some influence.

Figure 1: Beneficiaries mode of Selection of hospitals to undergo surgeries: (n=67)

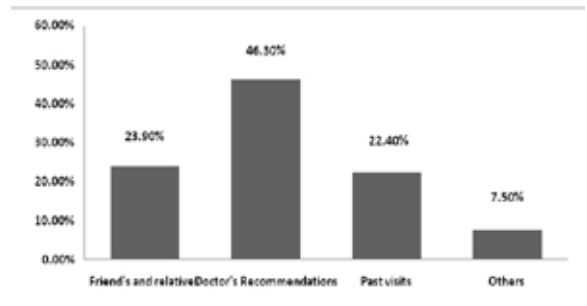


Figure 2: Beneficiaries mode of obtaining smart card: (n=67)

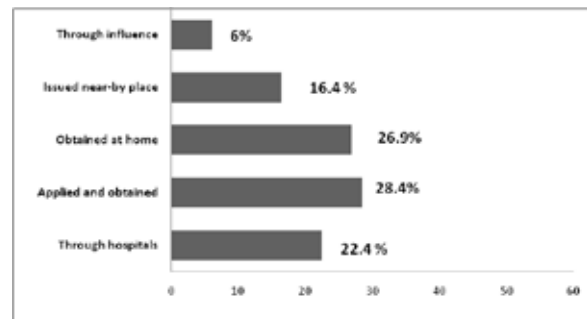


Table 2 reveals that 67%(45) of beneficiaries had positive experiences and 9%(6) of beneficiaries had negative experiences. 74.6% (50) of them felt that their health needs were satisfied and

65.7% (44) of them are satisfied with the money allocated for the treatment.

Table 2 : Scoring of Perception and experience level of beneficiaries

| Scoring of perception and experiences | | Frequency (%) N =67 |
|---------------------------------------|---------------------|------------------------|
| Perception level | Good perception | 39 (58.2%) |
| | Moderate perception | 25 (37.3%) |
| | Bad perception | 3 (4.5%) |
| Experience level | Good experience | 45 (67.2%) |
| | Neutral experience | 16 (23.8%) |
| | Bad experience | 6 (9%) |

The perception about the overall usage of the scheme among beneficiaries were found to be good in 58% (39) of them and only 4.5% (3) of them felt that it was bad. Perception about the smart card usage reveals that 71.6 % (48) of them felt it is effective.

The beneficiaries' were asked about the decision of dropping KKT and 57% of them were dissatisfied with the decision, 33% agree to it and 10% of the beneficiaries neither agreed nor disagreed with the statement. About 64% of beneficiaries felt that covering only surgeries under the scheme will not satisfy the health needs of their family and 60% of beneficiaries felt that services will be improved by including the private hospitals under the scheme.

Of the respondents 32% of beneficiaries felt that the program is good and helpful and 29% said that it is useful to all poor people for use of medical facilities. One of the suggestion for improvement of the scheme was "whole money spent should be insured for expensive surgeries."

Discussion

The results about perception and experiences of beneficiaries reveals that there is overall good experience and perceptions about the scheme.

Since this is an interview survey conducted through snowball sampling method there is a likelihood that only people with positive experiences were referred and hence sampled. This is a limitation of the study. Further, it is not clear how much the program has actually reached the community and the people living below poverty line. Such data will further strengthen the review of this scheme.

It was observed that about 20% of the respondents were persons living with an annual income above Rs. 1,00,000 per year. This reflects on the failure of the targeting of the scheme. This could be one of the reasons for high level of satisfaction observed by this study.

Rashtriya Swasthaya Bima Yojna is a Central Government insurance scheme (2) which covers the below poverty line (BPL) households from major health shocks that involve hospitalization.

In RSBY scheme the data relating to BPL families in the selected districts has been entered into prescribed software and they are used by the Insurance Company for the purpose of enrolment and thereafter for the purpose of transaction at the hospitals and data transmission there from shall be the ones approved by the Central Government. This kind of enrolment process could have been carried out in Kalaingar insurance scheme to focus mainly on the intended target population.

A rapid evaluation of the Rajiv Aarogyasri community health insurance Scheme, of Andhra Pradesh (1), a scheme very similar

to the KKT, was done previously and it was observed that with increasing distance to these major cities, the utilization rate of the scheme declined. The beneficiary satisfaction survey elicited the highest scores for doctors, nurses and cleanliness. The lowest scores were for health camps and information provided about the scheme. Nearly 60% beneficiaries incurred a median of Rs. 3600 out of pocket expenditure with transport, medicine and pre-diagnostic investigations being the major reasons. Thirteen percent of beneficiaries had no follow up visit and 28% had only one follow up visit.

A survey of this kind done in Tamil Nadu might have given a more representative picture of the KKT scheme.

In conclusion, the KKT was an effective scheme, but was poorly targeted. Future such schemes in Tamil Nadu should focus on better targeting and improved equity in access.

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Road Traffic Noise Pollution and Associated Health Problems among Hawkers in Kolkata

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Abstract

Introduction: Road Traffic Noise Pollution in urban cities is becoming a serious problem day by day with increase in urban development and transportation. This has direct and indirect health effects on people exposed to it. **Objectives:** To determine traffic noise induced health effects on hawkers, to compare health effects of traffic noise among the hawkers working along the side of a heavy traffic road and comparatively less noisy interior streets and to determine noise induced hearing impairment among hawkers with respect to their position of hawking. **Materials and Methods:** Data on traffic frequency (average traffic per hour) was collected from five traffic points along the side of Diamond Harbour Road (NH117) of Kolkata. 20 hawkers from each spot were surveyed conveniently to fill out total 100 questionnaires on self reported hearing status and noise exposure associated health problems. Among these 100 samples 60 had shops by the side of the main road and 40 had shops 300-400meters (approx.) away from the main road. Out of these 100 hawkers 20 people were conveniently chosen for audiometric test. **Results:** Traffic frequency on an average per hour was found most in 3rd spot that was 1361 vehicles per hour (avg). Mean age, mean daily working hours and mean service period were 37.28±8.4 years, 11.74±3.2 hours and 17.42±6.8 years. Major health problems associated with traffic noise exposure reported from roadside as well as interior streets are noise hampers mood(75%) and hampers concentration (60%), noise causes fatigue (72%) and headache (67%). 46% mentioned tinnitus more than once a day. Audiometric results showed 8 people out of 20 people have some level of hearing impairment. **Conclusion:** Hearing Impairment due to traffic noise pollution increases with increasing vehicular frequency. All the major health problems reported and hearing problems are higher among the hawkers along the roadside in comparison to the hawkers in interior streets.

Introduction

Noise is derived from the Latin word 'nausea' which means 'unwanted sound' or 'sound that is loud and unpleasant or unexpected'. In the major cities of the world, noise is becoming an increasingly omnipresent, yet unnoticed form of pollution due to increase in population, transportation, congestion and associated industrial and commercial activities. (1)

Noise mainly originates from human activities, specially the urbanization and the development of transport and industry. Noise from transportation has vastly increased due to

growth of various types of vehicles on the road in recent years. Some studies on noise pollution in Nepal by Khanal et.al have predicted that significant factors responsible for increasing noise level were traffic flow rate, the proportion of heavy vehicles and nature of road surface.(2) According to their studies old vehicles like heavy buses and three wheelers contribute in raising traffic noise level. Due to lack of vehicle maintenance regulation; old vehicles and three wheelers that freely run in urban cities are responsible for high traffic noise pollution in the city.(3)

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Road traffic noise is the major source of noise pollution in an urban environment which gives an impact to more people than any other noise source. (4) Exposure to traffic noise has a number of acute and chronic effects on humans. It disturbs sleep and may cause insomnia. It can cause annoyance, hearing loss, mental disorders and adverse physiological and psychological impacts as well as increase in the activity of endocrine glands produce high blood pressure, affects heart rate and cause changes in blood composition. (5)

Adult onset of hearing loss due to noise pollution has been described as the 15th most serious health problems in the world and it is the second most common type of hearing loss after presbycusis (old age associated hearing loss). Some audiologists have adopted the term as Sociocucis. (6) Estimates of people affected worldwide by Noise Induced Hearing Loss increased from 120 million in 1995 to 250 million worldwide in 2004 (WHO 1999; WHO 2001,2002,2004). (7,8,9)

Noise induced hearing loss (NIHL) is a significant social and public health problem. Noise induced hearing loss is of a sensory neural type involving injury to the inner ear. Hearing loss usually refers to hearing impairment that is causing difficulties or to a hearing threshold level that has deteriorated. Hearing loss can be caused in number of ways due to rupture of eardrum, breaking of the bones in the middle ear etc. Prolong noise exposure to high intensity sound can damage the hair cells of the inner ear leading to permanent hearing loss. NIHL is usually bilateral and shows a similar pattern in both eras. It is generally accepted that noise levels below 80 dB(A) do not present a risk to hearing. (6)

Noise is such an unwanted sound that may cause some physiological and physical stress

to the living objects exposed to it. (10) The high level of noise from the vehicles can have an impact on the hearing of the persons subjected to it. The persons most affected are the traffic policemen who work continuously on duty and the ones who are working near these noise areas like vendors and shopkeepers. (11)

though a lot of work has been reported from other countries on this, reports from India are very few. Moreover, there is no evidence of work on noise pollution and its effect on the inhabitants in the city of Kolkata; which is one of the noisiest metropolitans in India. This study will help to find out traffic noise induced health effects on people working along the side of a road exposed to noise pollution in respect to their position nearer to the road.

Methodology

Selection of spots: Considering the number of vehicles passing by and the heavy traffic load on the roads in the city of Kolkata; five traffic points are selected viz. Kidderpore bazaar (spot1), Behala thana (spot2), Behala tram depot (spot3), Shimultala bazaar (spot4), Shakherbazar (spot5) along the side of the Diamond Harbour Road (NH117). Diamond Harbour Road is one of the busiest roads in Kolkata. The traffic intensity of each spot is measured twice a day for one hour to get an average of traffic load per hour in a regular day. Times are selected depending on traffic rush hours in a day – in morning (9 a.m to 10 a.m) and in evening (7 p.m to 8 p.m) All measurements are done on weekdays. Noise levels on these spots are obtained as secondary data (on an average).

Selection of subjects: On average 20 hawkers from each spot were surveyed conveniently. Total 100 questionnaires were filled for the environmental noise pollution survey by the subjects. Close supervision was followed so as to avoid the influence of one's result by other

subject. Out of 100 subjects 60 had shops beside the heavy traffic Diamond Harbor road and 40 had shops in the interior (300-400 mt from D.H road) relatively less noisy streets. All were asked to the same set of questions. All respondents were male. Age of the respondents was between 20-50 (both inclusive) to avoid error due to presbycusis. Service period of hawking was >5 years and daily working hours was ≥ 8 hours.

Audiometric test: The manual audiometers (AC33 classic two channel) were applied for the audiometric test. The screening examination was performed. The site for audiometric testing was selected in most quiet area as far as possible excluding all the extrinsic noise factors like traffic, commercial, households noise etc. The audiometric threshold data was recorded on an audiogram form as recommended by ASHA (American Speech Language Hearing Association) in 1974 and as adopted by ANSI (American National Standard Institute) in 1978. Only 20 subjects selected conveniently, who have gone through questionnaire test, are subjected under this test; 10 are from roadside and 10 from interior streets.

Result

Mean age of hawkers was 37.28 ± 8.4 years, mean daily working hours was 11.74 ± 3.2 hours and mean service period of hawking was 17.42 ± 6.8 years. Vehicular frequencies of each of the five spots were 657, 1104, 1361, 807 and 1098 per hour respectively. Vehicles taken into account were motorcycles, auto, bus, taxi and private cars. Out of 20 hawkers at each spot, on third spot 11 reported that they had problem with hearing, which is the maximum among all the spots. From other spots; 7, 10, 8 and 10 people out of every 20 people respectively reported some hearing problems. Major health problems associated with noise reported were noise

induced mental stress, noise hampers mood as well as concentration, and noise caused fatigue and headache. Among all the hawkers 45% had reported noise induced mental stress, 75% had reported that noise hampers their mood and 60% had reported that noise hampers concentration, 72% had reported of noise causing fatigue and 67% had reported of noise causing headache. While contrasting health problems associated with noise between roadside hawkers and interior street hawkers, it has been found that; where 51.67%, 78.33% , 63.33%, 80% and 70% hawkers from roadside had reported of noise causing mental stress, hampering of mood, hampering of concentration, causing fatigue and headache respectively on the other hand , 35%,70%,55%,60%and 62.5% of hawkers from interior streets had reported the same problems respectively; which, clearly showed that hawkers from the roadside are more affected with these health problems than hawkers from the interior streets. 60% of hawkers from roadside had informed that they had some problem with proper hearing while only 25% of the hawkers from interior streets had reported of hearing problem. Moreover chi-square results had shown association between position of hawking and hearing status reported ($p < 0.05$). Among hawkers who worked more than 15 hours in a day, 61.20% had reported of impaired hearing which is much more than others working below 15 hours. Chi-square also showed association ($p < 0.05$) between daily working hours of hawkers and their self reported hearing status. 46% of hawkers reported of tinnitus more than once a day, 20% reported tinnitus almost all the day, 17% reported work related or recreational tinnitus and 17% reported that they never had tinnitus.

The hawkers selected for audiometric test had mean age of 37.4 ± 8.01 years, mean daily working hours of 11.8 ± 3.7 hours and mean service period of 18.95 ± 6.40 years. Among 20

total subjects 8 had hearing problem and 12 had normal hearing. Among 10 hawkers by the roadside 6 had hearing problem and 4 had normal hearing and among 10 from interior streets only 2 had some kind of hearing problem and rest 8 hawkers had normal hearing as far as audiometric reports are concerned.

Discussion

There are studies which indicate that the level of traffic noise pollution is dependent on the frequency of vehicular traffic in that particular area. (3) In this study; it has been found that when the vehicular frequency at each spot has increased the noise related hearing problems and associated health problems were also increased as with increasing vehicles the noise level also increases.

There is a definitive risk of health impairment to the population, particularly for the shopkeepers and permanent residences in and around the bus park where the noise is more than 80 dB(A). (3) In this present study, it has been found that the hawkers as well as the residents who stays along the side of a busy road are at more risk of getting noise related health and hearing problems than those who are at little interior from that busy road.

The present study revealed that the study subjects were in economically productive age groups and they were suffering from some kind of hearing problems and noise associated health problems. This fact has been correlated by other studies also. Previous studies have shown that traffic noise could give rise to psychological and psychosomatic symptoms in the form of mental stress, irritability, lack of concentration, fatigue and headache, which is also present in this study.(13,14)

Sleep disturbance is a major effect of environmental noise. Exposure to noise can

induce disturbance of sleep in terms of difficulty to fall asleep, alteration of sleep pattern etc. (15,16) After effects of noise induced sleep disturbance are increased fatigue, depressed mood, decreased performance.(17) These symptoms have been reported in the current study also.

As an effect of continuous noise exposure, presence of tinnitus has been found in similar studies. (18) Tinnitus has also reported by the participating hawkers in this study.

In this study, two groups from two different points have been chosen to compare between the hearing status and noise induced health effects of those who were working by the side of the busy main road (0 mt. from D.H Road); where the noise level was around approx. ≥ 75 dB(A) with those who were working a little interior (approx. 300-400mts. From D.H Road) where the noise level was much less around approx. ≤ 60 dB (A). The study showed significance difference of reported hearing status and associated health problems between these two groups of respondents.

According to this study, hearing impairment and noise induced health effects both were more prevalent among those hawkers having shops by the side of the road rather than those hawking a little interior as road sides were much noisier than interior streets. Moreover, those working more than 15 hours a day on average are more prone to these problems was evidenced by this study.

No previous studies on noise induced hearing loss and associated health problems have been done in Kolkata on people who were directly exposed to the traffic noise more than 12 hours on average daily. Several studies from different countries proved association between noise pollution and noise induced hearing loss but studies particularly on traffic noise induced

health effects is less. Moreover, comparison with such studies is of limited value because of potential in environmental exposure between different countries.

A similar study done in Bangkok city, which included four different categories of occupational people, i.e., drivers, street vendors, traffic officers and dwellers revealed that among the occupational population who were living in the urban monitoring sites, the driver groups were found to have the highest risk of traffic noise induced hearing loss.(19)

A potential limitation of this study is self reporting bias. But, the results of audiometry done validated a part of the results of questionnaire survey. Before the questionnaire survey, detailed noise level measurement of each and every spot should be taken to know the exact noise exposure to those working in these areas.

This study was confined to a limited area with a very few people. Further study must be done on larger population with proper noise exposure history of every individual respondent. The study demonstrates a need of a base line and follow up systematic audiometric test of every individual for accurate result.

Conclusion

Noise is emerging as a major environmental problem in many of the cities of the world, city Kolkata is not an exception to that. This can cause tremendous negative impact on public health and welfare. Considering the above points proved, we can conclude that traffic noise dominates the spectrum of environmental noise. This is the first study on traffic noise exposure and its effects in Kolkata. Although, this study shows an increased risk of noise induced hearing loss for the traffic noise exposed subjects, the diagnosis of NIHL could

not be confirmed because of various limitations of the study. However, the findings of highly significant effect of traffic noise on the public health despite of the low number of cases in this study should be considered as an alarming finding.

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Nutrition assessment among Toda tribal children aged 0-5 years in Nilgiris district, Tamilnadu, India.

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Abstract

Background: Nutritional status of tribal children in Nilgiris has not been investigated adequately. The present study was undertaken to determine the prevalence of underweight, feeding practices, utilization of health & nutrition services of the children, and food pattern of the women in the Toda tribals of Nilgiris district, Tamilnadu. **Methods:** A descriptive cross sectional study was undertaken in two blocks of Nilgiris district. Of 84 children aged 0-5 years, 30 boys, 54 girls were studied. Weight for age measurement was done by standard technique. Children were considered as underweight if their weight for age Z score <-2.0 SD of the National Centre for Health Statistics (NCHS) reference standards. About 84 women were studied to understand the food pattern of the Todas, using 24 hour recall method. **Results:** The study found 26.2 % children suffering from underweight and more than 90% of women following good feeding practices for their children. Only 14% of children were utilizing services given by the nutrition and health providers. Only 25% of women still following their traditional food practices and many of the families were economically well developed. **Conclusion:** The study provides evidence of the nutritional and feeding practices of the Todas tribal children. It shows that these children are better off than some of the other tribal populations of northern India. Appropriate intervention needed to fill the gap in utilization of health services.

Key words: Tribes, underweight, feeding practices and Traditional food.

Introduction

Nutritional status of any community is influenced by interplay of various factors including beliefs, customs, and food availability in their region. It is more relevant in the context of tribes as they have more bondage with their traditional food practices and values. Certain traditional food beliefs, poor sanitation, non utilization of available food resources, poverty, illiteracy and poor hygienic condition can have a detrimental effect on the nutritional status in tribal populations. (1)

Generally three anthropometric indicators are widely used to assess nutritional status during childhood underweight (low weight-for-age), stunting (low height-for-age), and wasting (low

weight-for-height). (2) Underweight is the most important cause of death in this age group in developing countries. The majority of deaths associated with undernutrition occur in children who are marginally undernourished. About 50% of the children under the age of 5 years in India are moderately or severely undernourished. Moreover, several studies have shown that the degree of undernutrition is higher among the underprivileged communities such as the tribals. (3)

Many of the tribal communities of India have their own geographically isolated life style. Certain inadequate food habits along with traditional and socio-cultural beliefs may lead to under nutrition. (4) On the other hand prolonged breastfeeding which is widely practiced in these

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areas can have a positive effect on weight and growth of babies. (5) In most tribal areas the gender difference in breast feeding practices which favours the male child in rural and urban locations, is not found.(6,7,8,9,10) This is another positive nutritional practice observed among the tribals.

The government of India provides nutrition and health services to reach the children below 6 years of age through the ICDS program. But the reach and utilization of these services remain poor according to NFHS – 3 report.(11) This poor reach is likely to be more pronounced in tribal areas.

Todas is one of the primitive tribes in Tamilnadu. According to the 2011 census the total population of Toda is 1940, which is lowest population in the Nilgiris primitive groups. Todas speak Toda language and Tamil.

The present study was undertaken to determine the prevalence of underweight, feeding practices, utilization of health and nutrition of the children, and food pattern of the women of this tribe.

Methodology

A descriptive cross sectional method was undertaken for the study. The study population which is distributed in the three blocks of the Toda tribes in Nilgiris district was covered. Two blocks were selected randomly and of the twenty hamlets in these two blocks ten hamlets were selected randomly. In these hamlets all the children aged 0 to 5 years were enumerated and included in the study. A total of 105 children were enumerated and 84 children participated in the study. For the food pattern assessment the corresponding 84 mother were interviewed. A 24 hour recall method was adopted to understand about Todas food pattern.

Data was collected through pretested questionnaire that had five areas. *First* part contained household characteristics, mother's age, occupation and age at marriage. *Second* was about feeding practices of the child including breastfeeding practices. *Third* was child assessment which included weight for particular age of the children. *Fourth* part was morbidity, utilization of the nutrition and health services, mainly supplementary food from the Anganwadi and vaccination. In the *fifth* part the sample women were questioned about food patterns including number of meals per day, preparation of meals etc.

The data were entered and analyzed using appropriate software. Mean, standard deviation and frequencies were calculated for analysis. Chi square analysis was done to find association between variables. A p value less than or equal to 0.05 was considered to be statistically significant for a 95% confidence interval. For nutritional status analysis Epi Net was used.

Results

Totally 84 children in the age group of 0-5 years were examined using weighing scale to determine the nutritional status of Toda children. The demographic background characteristics are explained in the *Table 1*. About 59.5% mothers who responded were in the 22-25 years age group. Of the women interviewed 83.3% had completed their secondary level education. It was also noted that 8.3% of the women were working in government departments, half of the women were home makers and the rest were labourers. Of the women 57.1% had been married in the 19-21 years age group and only 13% of women were married before 18 years of age. Among the children 36% were boys and the remaining girls.

The prevalence of underweight of the studied children is presented table in *Table 2*. The

prevalence of underweight was 26.2 % and it was similar in both sexes (boys Vs girls: 26.6% Vs 26%).

Table:1 Background Characteristics Of The Study Sample.

| Background Characteristics | Frequency | Percentage |
|-------------------------------------|-----------|------------|
| Age of the mother: | | |
| 18-21 | 5 | 6 |
| 22-25 | 50 | 59.5 |
| above 26 | 26 | 34.5 |
| Education qualification of mothers: | | |
| Primary level | 8 | 9.5 |
| Secondary level | 70 | 83.3 |
| Graduation and above | 6 | 7.1 |
| Occupation: | | |
| Government | 7 | 8.3 |
| Private | 6 | 7.1 |
| Daily wages | 12 | 14.3 |
| Agriculture | 17 | 20.2 |
| Housewife | 42 | 50 |
| Monthly income: | | |
| Below 5000 | 42 | 50 |
| 5001-10000 | 38 | 45.2 |
| above 10001 | 4 | 4.8 |
| Proportion of women married: | | |
| Below 18 | 11 | 13.1 |
| 19-21 | 48 | 57.1 |
| above 22 | 25 | 29.8 |
| Age of the child: | | |
| <6 months | 12 | 14.3 |
| 7-36 months | 52 | 61.9 |
| 37-60 months | 20 | 23.8 |
| Sex of the child: | | |
| Male | 30 | 35.7 |
| Female | 54 | 64.3 |
| Total | 84 | 100.0 |

Table: 2 Nutritional Status Of The Children

| Nutritional Status | Male | Female | Total |
|--------------------|----------|----------|----------|
| Normal | 26.2(22) | 47.6(40) | 73.8(62) |
| Underweight | 9.6(8) | 16.6(14) | 26.2(22) |

Table 3 shows the mother's knowledge and practice of breastfeeding. As high as 98% of woman had knowledge that they have to give exclusive breastfeeds for the first six months. Among the mothers all of them had given breast milk to their babies and 98.8% of mothers had initiated breastfed to their children within 24 hours. Among them 60.7% completed exclusive breastfeeding. A significant 28% of the mothers breastfed their babies for more than one year. The main reasons for not completing six months of exclusive breastfeeding included mother's insufficient milk, child's demands and mother's opinion that supplements were required for child's proper growth. The feeding practices were the same for both boys and girls, without gender discrimination.

Table 4a shows the utilization of health and nutrition services by the children. It is seen that only 4 children were receiving eggs (which is the nutritional supplement given to children through the ICDS in Tamil Nadu) from the Anganwadi centre and overall only 14.3 % children access all the health and nutrition services. Of the children 43% completed all the dosage of vaccinations appropriate for the age of the child. Table 4b shows the morbidity status of the children.

The study of food pattern of the mothers revealed that 47.6% of the women had breakfast (Idly, Dosa, Pongal, Uppuma, Chappathi), only 16.7% of woman skipped their breakfast, Todas added dairy products in their food pattern. During lunch time 70% of women added rice with gravy in their food pattern as shown in Table 5. Only 24% of the women had their traditional food which is rice porridge. Tea and coffee was popular among the women. It was

notable that about 22% of the women reported cooking by the gas stove

Table: 3 Knowledge & Practice Of The Breastfeeding.

| Variables | Knowledge | | Practices | | | |
|-----------|------------|--------------|-------------------------|-------------------------|---------------------------|--------------|
| | Colostrums | Exclusive BF | Knowledge of Colostrums | Knowledge of Colostrums | Breastfeed with in 1 hour | Exclusive BF |
| Yes | 82.1 | 97.6 | 65.5 | 100 | 72 | 60.7 |
| No | 17.9 | 2.4 | 34.5 | 0 | 28 | 39.3 |

Table: 4A Utilization Of Health & Nutrition Services.

| Utilization Of Services | Yes | No |
|-------------------------|------|------|
| Sathumavu | 20.2 | 79.8 |
| Egg | 4.8 | 95.2 |
| Vaccines | 42.9 | 57.1 |

Table: 4B Morbidity Status Of The Under 5 Children.

| Type Of Disease | Frequently | Occasion-ally | Never |
|-----------------|------------|---------------|-------|
| Diarrhoea | 0 | 15.5 | 84.5 |
| Pneumonia | 0 | 5 | 95 |
| Fever | 21.5 | 25 | 53.5 |
| Cold/Cough | 40.5 | 48.8 | 10.7 |
| Others | 0 | 1.2 | 98.8 |

Table: 5 Percentage Distributions Of Woman Having Type Of Food In A Day.

| Meal Time | Type Of Food | Frequencies | Percentage |
|-----------|------------------|-------------|------------|
| Breakfast | Tiffen | 40 | 47.6 |
| | Rice Porridge | 15 | 17.9 |
| Lunch | Rice With Gravy | 59 | 70.2 |
| | Traditional Food | 17 | 20.2 |
| Dinner | Rice With Gravy | 38 | 45.2 |
| | Traditional Food | 24 | 28.6 |

Discussion

Childhood undernutrition is a major threat to the health and well-being of any population. This problem is not only associated with serious long-term consequences for the child but also adversely related to the economic development of a nation. (3) Undernutrition continues to be a cause of ill health and premature mortality among children in developing countries including India. (17) In general, the prevalence of underweight in tribal preschool children of India ranged from 37.4% to 93.9%. The prevalence of underweight in the present study (26.8%) was closer to the Tamilnadu prevalence and very much lower than the national prevalence.

In the current study only 14% of children received the health and nutrition services, only 43% children completed their required vaccination which is very low. The Todas who were studied seemed to be economically and socially much better developed as against expectations, given that they are a primitive tribal community. This development as well as higher educational status of the women, has led to greater expectations of the community from health and nutrition services. This could be the probable cause for the children not accessing the health and nutrition services provided by the government, which is perceived as poor quality.

It was also observed that the level of knowledge about breast feeding and child care was very

high among the Toda women. This could be an effect of the higher educational achievement of these women as well as overall development. The study showed that only 2.4% of women were unaware of exclusive breastfeeding. Further in our study 84.5% of children never got diarrhoea in their life. Nearly 90% of the children had upper respiratory infections which are probably due to the cold weather conditions which favour viral infections.

Another key finding of the study was the changing food patterns with development and modernization, it has been observed that most of the Todas have changed over to modern meal patterns and only about 25% are still following traditional food practices.

Conclusion

Thus the study provides evidence of the low prevalence of the underweight among Toda tribal children. It further throws light on the high knowledge and good practices of the breastfeeding among the Toda mothers. But appropriate interventions are needed to fill the gap regards utilization of good quality health and nutrition services of the government. This can lead to further improvement of their nutritional status and general health.

Acknowledgement

The authors would like to acknowledge the contributions of Prof.Ch.Satish Kumar, the Toda tribal leader Mrs.Vasamalli and friends and colleagues for their support.

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A Study on Knowledge, Attitude and Practice Regarding HIV/AIDS Among Migrant Construction Workers in SRM University, Chennai

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Abstract

Background: India is third largest country housing persons living with HIV / AIDS (PLWHA). Migrant workers are considered as bridge population between the high risk group and general population. Mainly male unmarried workers are the bridge population. Good knowledge, attitude and practices regarding HIV/AIDS among migrant workers are important to break the chain of transmission. **Objectives:** The objective of this study was to understand the level of knowledge, attitude and practice of construction migrant workers on HIV/AIDS at SRM University, Tamil Nadu. **Methodology:** This is a cross sectional study done using a semi structured questionnaire. The sample population was 120 and they were selected by simple random sampling method. **Results:** The study showed that 77% of the workers had heard about HIV/AIDS and 37% had good knowledge on HIV/AIDS. The attitude towards HIV/AIDS was good among 66% of the workers. Condom usage was very low at 6.5% and sexual relationship with someone other than the regular partner was 21%. **Conclusion:** The finding of poor knowledge and practices is worrisome but the good attitude of majority of the workers regarding HIV/AIDS is encouraging. Strong health education can improve the knowledge levels as well as safe practices.

Introduction

It is a known fact that HIV/AIDS among migrant workers is a major public health issue. India is a country with high HIV prevalence, and it has the third largest number of people living with HIV/AIDS (PLWHA). As per HIV estimates 2008-09, there are an estimated 23.9 lakh people living with HIV/AIDS in India with an adult prevalence of 0.31 percent in 2009 and 83 percent of the people living with HIV/AIDS are in the age group 15-49 years which constitute economically active group.(1)

The epidemic is concentrated among high risk group populations which includes migrant workers and is heterogenous in its spread. Most infections occur through heterosexual transmission which accounts for 87 percent of HIV cases detected. However, in certain regions, injecting drug use, men who have sex with men and single male migrants are contributing for the spread of HIV epidemic.(1)

Due to significant urbanization in several parts of the country there is large scale migration of workers from rural areas in construction sites. These migrant workers, often single male migrants, are prone to high risk sexual behavior and hence transmission of HIV/AIDS. More than 90 million males (i.e., more than 25% of adult males) in India are migrants. About 51 million males migrate from rural areas, and nearly a quarter of them migrate from one state to another. (2,3) The most rapid and well-documented spread of HIV has occurred in Mumbai city and the state of Tamil Nadu and studies have proven that migrant workers are more vulnerable to get HIV infection with odds of 2.1 times than the odds for a non-migrant. (4,5) Moreover, separation from family and socio-cultural norms, isolation/loneliness, a sense of anonymity that offers more sexual freedom, and availability of some disposable income in hand, make migrants more

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vulnerable to adopting high-risk behavior such as alcohol and drug-use and unprotected sex with the person with unknown sexual history and often feel insecure and isolated at the place of destination making them vulnerable groups for HIV infection. (6,7,8,9,10) The problem gets multiplied if these migrants have poor or no access to health care as well poor information about the health care facilities at the place of destination.(4)

The existence of a wide network of labour contractors and a structured infrastructure of the contract system provides opportunities for effective and sustained worksite HIV prevention programs among contracted male migrant workers in India.(2)

This study was done to assess the knowledge, attitude and practice of migrant workers on HIV/AIDS which will improve the understanding of the status of the bridge population. Information about the bridge population is necessary to improve the services and plan accordingly.

Methodology

This is a cross sectional study done among the migrant construction workers at SRM University. This university is spread over 300 acres of land in which construction work is in process all around the year. All the six construction sites in university were covered and 25 samples from each construction site were taken. Male workers working more than one month at SRM University were considered for this study.

A semi structured questionnaire was prepared adapted from the NFHS-3 India report as baseline and pretested in adjoining construction sites near university and appropriate corrections made before data collection. The questionnaire constituted back ground characteristics including age, marital status, literacy and age at

marriage. Rest of the questionnaire was divided into knowledge, attitudes and practices.

Alcohol consumption and smoking were added as variables to understand the relationship between these habits and sexual practice. Moreover, they were questioned if they knew anyone suffering from HIV/AIDS to comprehend its relation with their respective knowledge on the same.

The response rate was 80% (120) and informed consent was obtained from all the workers before the administration of the questionnaire.

Results

The sample consisted of 42.5 percent inter district construction migrant workers from Tamil Nadu and 16.7 percent were from Andhra Pradesh and the rest were from other states of India mostly West Bengal (13.3%), Orissa (12.5%), Madhya Pradesh (6.7%) and very few percent were from Jharkand, Uttaranchal , Bihar and Uttar Pradesh (5, 2.5 and 0.8 percent respectively).

The age of the migrant workers was between the economically active groups of 18-49 years and was positively skewed. Of the workers, 20 percent were in the age group 25-30 years of age, 15 percent 30-35 years, 12.5 percent 35-40 years and 5 percent above the age of 40 years.

The duration of stay at the construction site which is an important background characteristic was also analyzed and it was found that more than 39 percent were working from 3 months prior to the survey. About 32.5 percent for more than 3 years, around 6 percent for 3-6 months and about 20 percent from 6months to 2 years prior to study period.

About 49 percent of the migrant workers were unmarried and the rest were married. Out of

51 percent of married people, 44 percent were living single at the work site and the rest were living with their family.

The sample population constituted 25 percent who could not read or write. Among the literates two person i.e. 1.7 percent had obtained a college degree, 5.8 percent had passed HSC, 33.3 percent were educated between 8th std to SSLC and 44.2 percent were educated between 1st to 8th. These characteristics are described in Table 1. About 77 percent of the sample population had heard about HIV or AIDS in their life time.

Table 1: Background Characteristics of Migrant Workers

| | | Number | Percent- age |
|-----------------------------|------------------------|--------|-----------------|
| Native place of migrants | Tamil Nadu | 51 | 42.5 |
| | Andhra Pradesh | 20 | 16.7 |
| | West Bengal | 16 | 13.3 |
| | Orissa | 15 | 12.5 |
| | Madhya Pradesh | 8 | 6.7 |
| | Jharkand & Uttaranchal | 6 | 5 |
| | Bihar | 3 | 2.5 |
| | Uttar Pradesh | 1 | 0.8 |
| Age | 15-20 | 17 | 14.1 |
| | 20-25 | 40 | 33.3 |
| | 25-30 | 24 | 20 |
| | 30-35 | 18 | 15 |
| | 34-40 | 15 | 12.5 |
| | 40 & above | 6 | 5 |
| Duration of stay | 1-3 months | 47 | 39.2 |
| | 3-6 months | 7 | 5.8 |
| | 6months -3 years | 27 | 22.6 |
| | <3 years | 39 | 32.5 |
| Marital Sta- tus | Single | 59 | 49.2 |
| | Married | 61 | 50.8 |
| Now staying with | Single | 58 | 48.3 |
| | Family | 62 | 51.7 |
| Literacy | Literate | 90 | 75 |
| | Illiterate | 30 | 25 |

Out of people who have heard about HIV/AIDS (n=92) only 37 percent had knowledge about HIV/AIDS. Of those who had heard about the disease 31.5 percent believed that HIV/AIDS does not spread through mosquito bites and similarly 32.6 percent of people believed there is no cure for HIV/AIDS. Almost 56.5 percent ruled off the idea that HIV/AIDS spreads through sharing food with the infected person and 61 percent said that it can be transmitted from mother to child but only 35.9 percent said that mother to child transmission can be prevented during pregnancy. When asked if HIV is caused due to supernatural powers about 10 percent agreed that HIV can be caused by them. The level of knowledge of the workers is depicted in table 2.

Table 2: Knowledge of HIV/AIDS among migrant workers

| | Yes | No | Did not Re- spond |
|---|------|------|----------------------|
| Can Mosquitoes spread HIV infection | 34.2 | 24.2 | 18.3 |
| Does Supernatural power cause HIV infection | 10.9 | 70.7 | 18.5 |
| Does sharing food causes HIV infection | 27.2 | 56.5 | 16.3 |
| Transmitted from mother to child-no | 60.9 | 17.4 | 21.7 |
| HIV infection spreads through breastfeeding | 53.3 | 20.7 | 26.1 |
| Prevention of MTCP is not possible | 35.9 | 7.6 | 56.5 |
| There is cure for HIV infection | 40.2 | 32.6 | 27.2 |

Knowledge of the respondents was compared among people from various background characteristics and it was found that only duration of the stay was evidently significant with p value of 0.022. The knowledge was similar in categories of marital status, literacy and staying conditions.

The attitude posed by the respondents was positive in nature. About 89% of them responded that if any family member got the disease, they

would take care of them. Of the respondents 63 percent had a positive attitude towards buying vegetables and eatable from anyone infected with HIV/AIDS. But among those who said they will take care of their family members in case they get infected, only 65 percent responded positively for buying eatables from anyone infected with same disease. Of them, 74 percent had an attitude of allowing the teacher to continue teaching even if he or she is known to be suffering from HIV/AIDS.

Table 3: Attitude towards HIV/AIDS among migrant workers

| | % |
|--|------|
| Percentage of people willing to take care of relatives if they get infected with HIV | 89.1 |
| Percentage of people willing to buy vegetables from person infected with HIV | 63 |
| Percentage of people willing to allow teacher to continue teaching even if infected by HIV | 73.9 |
| Percentage of people who are willing to keep it as secret if they are willing | 48.9 |

Table 4: Sexual Practice of Migrant workers related to HIV/AIDS

| | Yes | No |
|---|------|------|
| Sexual contact with a person other than regular partner | 21.7 | 78.5 |
| Use of condom | 6.5 | 93.5 |

Surprisingly almost half of the respondents had an attitude of keeping it as a secret if they themselves or their family members are suffering from HIV/AIDS, depicting the stigma and discrimination towards HIV/AIDS in the society. These attitudes are shown in table 3. Relationship between knowledge and attitude showed that care giving and day to day transaction was significantly associated with good knowledge about the disease (p value 0.050 and 0.015 respectively). Sexual practices of the migrants were also analyzed and were found that 21.7 percent had a sexual affair other than their regular partners at work place of which 7 were unmarried single migrants and 13

were married men. The condom usage among those who had sex other than regular partner was very low i.e. 6.5 percent ($n=6$). These practices are depicted in table 4. Addictive habits such as smoking and alcohol and sexual contacts other than regular partner had no relationship.

There was no relationship between knowledge and the fact that the respondent knows someone (friends, villager, friend's friend) currently suffering from HIV/AIDS or had died from HIV/AIDS.

Discussion

This study found that knowledge about HIV/AIDS among the migrant construction workers was not very high. Practices such as high risk sexual contact was high and condom use was low. But the attitudes of the workers regarding the disease were positive. Almost 86% of the respondents heard about HIV/AIDS in a previous study whereas in this study only 77 percent have heard about the disease. A study in China, on KAP regarding AIDS among migrant workers in railway construction sites revealed that only 37.5% have heard about HIV/AIDS which is very less compared to the current study. An Indian study Cross sectional population based study of KAP regarding HIV/AIDS in Dakshina Kannada district of Karnataka revealed that 54% people have knowledge about HIV/AIDS whereas in this study only 37% have knowledge about the same.

The knowledge level is low among the construction migrant workers and the attitude is much higher than expected. A relationship study between Knowledge and attitude from Japan shows that as the knowledge increases the attitude towards HIV/AIDS also gets better. In our study 75 percent of the people having knowledge had positive attitude towards buying vegetables from HIV/ infected person.

When the mode of transmission of the virus is better understood there is positive attitude seen among them.

The practice of condom usage is also very low among married as well as unmarried workers.

Combination of low knowledge level, and a positive attitude is difficult to explain. The role of culture and general attitude about sick people takes a lead role to explain this phenomenon. Another factor to be considered is that some studies have found no relationship between knowledge, attitude and practice regarding HIV/AIDS.

Knowledge levels and condom usage are not significantly related. This phenomenon goes along with a study done on knowledge, attitude and practice among Myanmar migrant in Thailand which showed that there was no statistically significant association between knowledge of respondents and condom use; therefore improving knowledge alone would not be enough to change practice. As discussed by Maslow (1970) and Norwood (1996), apart from knowledge, personal needs and values are important to change attitude and this, in turn, may change a person's practice.

Two Mumbai studies further found that men who consumed alcohol on a regular basis were more likely to engage in extra-marital sex. But in this study this phenomenon was not true but among the people who had extra marital sex condom usage was very low.

Conclusion

This study throws a light on the fact that the knowledge level and good practice levels are significantly low among migrant workers. There

is a cultural and value factor which might play a role in the positive attitude that they had despite the low knowledge. Hence, more understanding is needed on what are the factors that play a role in bringing up positive attitude other than knowledge of HIV/AIDS. There is a need to educate migrant workers at the worksite in their native language and condom promotion should also be done along with education.

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An Assessment of Stress, Fatigue and Coping Strategies Among Airline Engineers and Pilots

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Abstract

Background: Airline engineers and pilots are responsible for the lives of hundreds of people because of which there is no room for mistakes in their occupation. Stress and fatigue result in deterioration in physical and mental strength which might affect an individual's work. The aim of the study was to assess the stress and fatigue levels with respect to their lifestyle and to understand their coping strategies. **Objective:** To measure the levels of stress and fatigue among airline pilots and engineers, to study the effect of lifestyle on their health, to understand their perception of the causes for stress and fatigue and to understand their stress coping mechanisms. **Methods:** Pilots and engineers completed 4 questionnaires each, one on lifestyle, The professional Life Stress Scale, The Piper Fatigue Scale and a NIMHANS coping scale. The questionnaires were administered and completed online. A total of 151 responses were received. **Results:** Pilots and engineers both were found to be more fatigued than stressed on the whole. The most common cause for the stress and fatigue among engineers was lack of exercise (OR-0.37, p value- 0.01) and a physically demanding work profile. Sleep and spending time with family was found to be the best method of relieving stress and fatigue. The problem solving approach of coping with stress was most frequently used by all respondents. **Conclusion:** The results suggest that regular eating habits, exercise, adequate sleep and breaks during work hours would lead to reduction in fatigue among both pilots and engineers. Positive coping strategies among the respondents reveal appropriate training and follow up by the airline industry.

Introduction

The airline industry is one that consists of a host of people involved in work that revolves around the effective planning and management of flying passengers across the world safely and satisfied. In order to ensure safety, two important cadres of people are directly involved, i.e. pilots and aircraft maintenance engineers. The pilots are on the forefront and have the responsibility of actually transporting/flying the passengers safely to their destination. On the other hand, engineers are responsible for the physical condition of the aircraft itself. Long haul flights involve flying across time zones that disturb the circadian rhythm, eating schedules, etc. Several studies have looked at stress and fatigue

among pilots. A study showed that an addition of a layover resulted in significant reduction of fatigue among pilots and that an extra night's layover had different effects depending on the type of duty.(1) In another study it was seen that during two consecutive night flights and a short layover, sleep was shortened by 2 hours during the layover and the consecutive night duties resulted in loss of 9.3 hours of sleep. Fatigue was seen to be much more pronounced during the return flight where the pilots scored their fatigue at a critical level.(2) It was seen that sleep in the prior 24 hours and flight sector were significant predictors of self rated fatigue.(3) In another study it was revealed that fatigue increased with the length of duty and was higher at the end of a two sector

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duty compared to a single sector duty (4). On a similar note, a study showed that prolonged duty periods and successive early wake ups were the causes of perceived fatigue in pilots. It was revealed that rest and sleep management were the major strategies used by the pilots to cope with fatigue (5). It was also seen that 24 hour operations create non standard and altered work schedules that lead to cumulative sleep loss and disruption of the circadian rhythm. It was also seen that these factors can lead to fatigue and sleepiness and affect the effectiveness and productivity on the job (6). In one study, it was observed that corporate instability was related to stress in pilots. It was seen that those pilots employed by an airline having a history of instability were reported to have a significantly higher level of stress and depression symptoms than those employed by stable airlines (7). Coping with stress by resting at home in comparison to resting away from home was found to be more effective since it highlighted the factors related to mental health and mood shifts. It was found that pilots away from home were able to rest effectively but not relax (psychologically) (8). Coping with stress and its manifestations is important especially in this Industry. This was studied, where it was revealed that 78% of the pilots suffered from professional stress. It was also seen that majority of them (77%) used emotion focused strategies of coping with stress. Problem solving (18%) and social support (5%) methods of coping were also used by pilots effectively (9).

The objective of this study was to measure the levels of stress and fatigue among airline pilots and engineers, to study the effect of lifestyle on their health, to understand their perception of the causes for stress and fatigue and to understand their stress coping mechanisms.

Methods

This descriptive cross sectional study was conducted among study subjects consisting of airline pilots and engineers. These study

subjects were sampled by convenient sampling. The inclusion criteria for the study population was that only commercial airline pilots were studied and only those engineers involved in on ground aircraft maintenance were included. Pilots and engineers were not from only a single airline. They were those working with Air India, Jet Airways, Kingfisher, Lufthansa, Spice Jet and Indigo.

The tools used for the purpose of this study were a set of Questionnaires. The set consisted of 4 questionnaires covering the following domains:

A general questionnaire on lifestyle

This was a general questionnaire that included 7 questions on personal details such as sex, age, marital status, designation, number of working years, etc. It also had a set of questions on lifestyle, where 6 questions were focused on their dietary habits (type of food, frequency of meals, etc) and 8 questions on personal habits (smoking, alcohol, exercise).

The Professional Life Stress Scale

This scale developed by David Fontana has been adapted from the British Psychological Society and consists of 24 questions. These questions address common features in one's life (physical and emotional aspects), family life versus professional life, relationship with peers, satisfaction and value of work.

The Piper Fatigue Scale

This is a scale consisting of 22 questions with 10-point scales spanning 4 major domains/subscales. They were, behavioral/severity (6 questions), affective meaning (5 questions), sensory (5 questions) and cognitive/mood (6 questions).

NIMHANS Coping Scale

This coping scale has been developed by NIMHANS for Stress Management Workshops.

The version used here was a short version consisting of 6 statements/strategies which the respondents had to rank according to how frequently they follow a particular coping strategy (emotion focused, social support, problem solving).

Scoring of the scales was done for each individual respondent according to the standardized format.

The data collection methodology was such that the above Questionnaire set was sent to the respondents via email and was completed by them online.

Data Analysis Methods:

The data collected using the tools mentioned above was tabulated, coded and analyzed statistically. Descriptive statistics such as frequencies, percentages and cross tabs were used. Also, odds ratio and significance were determined for the necessary relationships between the variables involved.

Results and Analysis

A total of 600 questionnaires were sent out to airline pilots and engineers via email out of which 151 responses were received in return which is a 25% response rate. The questionnaires were administered online and many of them were sent to the subjects on their email addresses obtained from the airline office and some personally. This low response rate may be due to the fact that many people do not check their emails often. Another reason could be the fact that the email addresses obtained from the airline authorities might not be valid, i.e. they might be old and not in use at present by the individual.

It was seen that among the 151 total respondents, 43 of them were pilots and 108

of them were engineers. 45% of the total respondents had been working in the industry for more than 20 years. Among the engineers, around 43 of them were in the age group 41-50 whereas among the pilots, majority of them aged 21-40. Also, over a 100 engineers were married and among the pilots, a little over half of them were unmarried.

Dietary Habits

Engineers overall, seemed to have more regularity when it came to healthy eating habits. They mostly ate home cooked food and that too every day. On the other hand, pilots ate in-flight food and most of them ate at home only thrice a week. Also almost 3/4th of the respondents' meal timings varied on a regular basis.

Personal Habits

When it came to exercise, it was observed that most engineers do not exercise regularly whereas pilots do. 73% of the total respondents were not involved in a regular exercise program. Almost 90% of the engineers exercise in the form of walks alone. But, pilots on the other hand do more rigorous forms of exercise such as working out in the gym, running, yoga, swimming, etc.

81% of the total respondents do not smoke; whereas 60% of them drink which they also mentioned helps them relax.

When questioned about some common features in their life, including physical and emotional manifestations, 5 features received the maximum responses. It was seen that 45% of them complaining of tiredness and lack of energy, 57% had the inability to say 'no' when asked to do something, 26% suffered indigestion, 22% had the inability to stop thinking about the day's problems or the day's events and 23% were reluctant to meet new people and attempt new experiences.

Stress

This study revealed that a certain level of professional *stress* was there among both pilots and engineers. But for both the groups, mild stress was more prevalent than moderate forms of stress. 76.2% and 68.5% of pilots and engineers respectively were *mildly stressed* and 23.8% and 31.5% of pilots and engineers respectively were *moderately stressed*. Hence, it can be seen that although stress was present more in milder forms for both the groups, the percentage of mild stress was more among pilots and that of moderate stress was found more among the engineers.

Fatigue

As for *fatigue*, it was a similar case where milder forms of fatigue was more among pilots and moderate forms was more among engineers. 76.2% and 40.5% of pilots and engineers respectively were *mildly fatigued* and 23.8% and 53.1% of pilots and engineers respectively were *moderately fatigued*. Also, among pilots, it was seen that milder forms of fatigue was present in younger respondents and fatigue increased with age where moderate forms was more among older Pilots (ages 41-50). Among engineers, both mild and moderate forms of fatigue were highest among ages 41-50. Although, here as well, the level of fatigue was observed to *increase* with age. The most common reasons cited for fatigue were work related reasons, lack of system at workplace, scenario of the aviation industry, shift duty, lack of sleep/rest and stress. Other reasons were physical environment, age, lack of exercise, insecurity and commute to the workplace. The best thing they found to relieve their fatigue was found to be good sleep (31%). Others cited were spending time with family (23%), Yoga or exercise (21%), socializing (14%) and drinking (11%).

Pilots who did exercise had a 0.13 (95% CI 0.02 – 0.84) times odds of developing fatigue

compared to pilots who did not exercise ($p = 0.01$). Engineers who were stressed had a 6.81 (95%CI 2.28 – 21.27) times greater odds of being fatigued compared to those who weren't.

Coping Mechanisms

Management of stress was assessed by using a coping scale which identified three types of coping methods, emotion focused, social support and problem solving. This study showed that 71.9% of the respondents most frequently used a *problem solving* method (The statement in the scale was-When things get difficult in my life, I find out the cause of the problem. I take positive action based on our understanding of the problem) which is a positive coping strategy. And 44.3% most frequently used an emotion focused method (The statement in the scale was-When things get difficult in my life, I try to reduce tension eg. , I cry, smoke or eat. I become involved in other activities to keep my mind off the problem) which is a *negative coping* strategy. This showed that stress has been managed quite well by pilots and engineers by means of positive coping strategies on the whole. The above positive results reflect in the effective training in stress management given to the engineers and pilots during their initial training.

Discussion

Fatigue

The present study revealed that good sleep was the best thing that the respondents found that relieved their fatigue. This was also seen in a study conducted by *Samira et al, 2001*. In our study, it was seen that around 20% of the pilots said that their duty periods and lack of layover period were important causes for fatigue. This could be due to 20% of Pilots having short haul back to back flights more often than others rather than those having long haul flights. This has been previously established in studies done

by Powell et al., 2010 and Samira et al., 2003 (1)(5) Also, our study showed that shift duty (involving night flights, travel across time zones, etc) was one of the reasons for fatigue given by the respondents. This has been previously shown by a study done by Samira et al. where it was seen that night flights and jet lag was the complaint given by 59% and 45% of the respondents respectively (5).

It has been seen in our study that pilots have reported adequate sleep to be the best thing that relieved their fatigue. And shift duty as one of the causes of their fatigue. This has been revealed in a study by Powell et al. and they found that an addition of layover between two flights resulted in reduction of fatigue (1). In another study conducted by Rosekind MR et al. it was seen that 24 hour operations creates nonstandard and altered work schedules leading to sleep loss and circadian rhythm disturbances (6).

Staying home with family and resting at home was a common answer given by the respondents when it came to relieving stress. This has been established by a study comparing pilots resting at home and away from home by Cooper et al., 1987(8).

Stress

In our study, the respondents revealed that the scenario of the aviation industry and hence insecurity were 2 of the reasons for stress. This has been previously established in a study by Little et al. where it was found that corporate instability was related to the airline pilots' stress symptoms. It was found that the pilots group employed by an airline having a history of corporate instability had significantly more stress and other symptoms than those with stable airlines (7).

In other studies, it has been seen that the causes of stress are mainly other emotional/mental reasons and fatigue is more due to physical problems, such as lack of sleep, job profiles, etc. In our study, it has been seen that the respondents reported stress to be one of the causes of fatigue. This could be due to mental stress causing sleep disturbances and affecting the respondent's rest periods and hence overall taking a toll on their physical health by leading to fatigue.

Age as a determining factor

A study done by Tenney DP et al. revealed that age is an important factor in determining the rate and probability of the occurrence of accidents in aviation (10). In our study, it has been shown that fatigue increased with age which is a determining factor in accidents due to physical and emotional manifestations of fatigue such as, lack of concentration, slow reaction time, tiredness, sleepiness and reduction in alertness.

A study conducted by Ariznavarreta et al. showed that circadian rhythms got disturbed due to the certain types of flights (duty type). It was seen that there was resynchronization between body rhythms and the environments due to jet lag. This was also seen to be dependent on age where, it was observed that there was a greater influence of the related stress and fatigue on younger pilots (11). In our study, the results were consistent in that, shift duty/work period and hence lack of sleep was an important determinant of fatigue. But unlike the above mentioned study, it has been seen in our study that younger pilots were less fatigued and stressed than older ones and that fatigue increased with age. This difference is probably due to the fact that younger pilots are still getting accustomed to the erratic schedules and loss of sleep whereas older pilots have been

experiencing this for many years. But on the other hand, in general, older people are more likely to get affected by fatigue caused by the 24hr operations and hence the reason why the results of our study and earlier studies vary.

Coping Mechanisms

Our study showed that the respondents used problem solving methods to cope with stress (71%). On the other hand, a study done by *Leo et al.* revealed that pilots used emotion focused methods most frequently (77%) (9). This difference could be due to the difference in pre-employment training given to the two groups of respondents since both emotion focused and problem solving have some positive aspects.

A Public Health Perspective

From a public health perspective, this study sheds light on the fact that the health of airline pilots and engineers is not given a lot of importance by the airline industry. The mental health of engineers and pilots must be attended to in order to keep them alert during their duty times. A healthy lifestyle and good personal habits are two important aspects that affect their lives and thousands of others they are responsible for. This particular set of people in the airline industry all over the world must be taken care of and provided the necessary health services.

Limitations

In this study, the response rate is low, being administered online. The number of responses received from pilots and engineers varied. The number of pilots here is almost half as that of engineers. It was difficult to get pilots to participate in the study due to their job profile since they are travelling most of the time.

Further research delving into the area of the health services provided to the two groups in

various countries and what can be learned from other countries could be helpful in bringing about some changes in the health services in the airline industry. For example, for both the groups, it is important to have one type of shift duty and not one that is ever changing causing disturbance in their circadian rhythm. This is important in order to get settled in one particular sleep cycle. For engineers, it is important for them to have breaks in between work hours in order to rest and eat so as to be alert, fresh and lead to reduction in errors. Also, for pilots, it is important to have additional layover between flights so as to get enough sleep, recover from any sleep deficit and be better prepared physically and mentally for the following flight.

Conclusion

In this study, it was seen that both pilots and engineers suffer from mild to moderate levels of professional stress and fatigue. While mild levels of stress are more predominant than moderate levels, engineers have been found to be more fatigued than pilots. This could be due to the lack of exercise amongst the engineers and the varied meal timings among all respondents. Most of the respondents dealt with stress through positive coping strategies which indicates good pre-employment training. But, considering their overall physical and mental health, more relaxed schedules leading to adequate rest, regular medical monitoring and stress management programs will improve the operational efficiency of both airline engineers and pilots.

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Assessment of Knowledge and Perceptions of ICDS Activities Among Anganwadi Helpers In Tamilnadu

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Abstract

Background: The anganwadi helper plays a significant role in the integrated child development scheme (ICDS) and act as a strong link between the community members and the scheme. She enables the child to understand various issues, develop positive attitude to nature and child to child interactions. There is dearth of relevant and wholesome studies on the role and abilities of the anganwadi helpers. It is perceived that being a grassroots level worker, performing the daily chores of the anganwadi she is underestimated, under paid and neglected in the community and remains the weakest person in the ICDS. This study was done to assess their knowledge and perceptions on the ICDS and to initiate discussions about improving their roles in the scheme. **Objectives:** To assess the level of knowledge and perception of ICDS activities among anganwadi helpers in the Kanyakumari district of Tamilnadu. **Methodology:** A qualitative exploratory study was conducted among 30 anganwadi helpers in Kanyakumari district using in-depth interview technique. **Results:** All the interviewed anganwadi helpers were well aware of their roles and responsibilities, 28/30 of the anganwadi helpers knew the importance of supplementary nutrition, exclusive breast feeding and iron and folic acid tablets. All helpers knew well how to maintain personal hygiene among themselves and the children. Half of them knew to identify "At Risk" pregnant woman. None could tell about growth monitoring and referral services, only 1/3rd of them knew about oral rehydration solution (ORS) and the method of administering ORS. None of the anganwadi helpers knew about immunization. **Conclusion:** Thus in-service training of helpers should attempt to improve knowledge on various aspects of woman and child health and nutrition in the village. This would add additional support to improve the reach and utilization of ICDS services for child survival growth and development

KEY WORDS- ICDS, Anganwadi helpers, knowledge, perception

Introduction

India's challenge of providing pre-school education and breaking the vicious cycle of malnutrition, morbidity, reduced learning capacity and mortality is addressed by the Integrated Child Development Scheme (ICDS), which is the flagship child health and nutrition program of the central government of India running across the country with significant budget allotment and program planning. Though it is a very resourceful program it cannot be said to reach all children from disadvantaged groups so that each of them would realize their

full learning potential in early childhood. Among the key staff of the program are the anganwadi worker and helper. Both of them are woman who are the local residents. The anganwadi worker helps the Village Health Nurse (Auxiliary Nurse Midwife in other states) in all activities of mother and child care apart from taking care of the preschool education, preparing and feeding the children and other beneficiaries.

She performs all domestic tasks and daily chores and is capable of managing the centre in the absence of anganwadi workers. They are not only helpers but are also coordinators,

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implementators, organizers, communicators, even educators. They have a good understanding of the needs of the community and interact well with the community, being the pillars of system. Though they play a crucial role in providing child care in rural India, they remain underpaid, underestimated and neglected in the community.

ICDS being a community based program, partnership between community and frontline workers can make the vision reality. Therefore all the grassroots workers need to have a high level of knowledge and perceptions of the activities of the scheme in order to induce interest in the community.

This study was done to understand the knowledge and perceptions of the anganwadi helpers about the ICDS and to understand how the role of the helpers can be enhanced to make the program better.

Methodology

Study Design

The study was a qualitative exploration using in depth interview methodology.

Study Population

In-depth interview was conducted among anganwadi helpers from 30 anganwadi centres. The study was conducted in the month of July in Kanyakumari district

Sample Selection

The study population comprised of anganwadi helpers working in the anganwadi centres.

The sampling procedure adopted was multistage random sampling. Of the nine blocks in Kanyakumari district 2 blocks were chosen randomly and 15 villages from each block were taken. Thus a total of 30 anganwadi helpers

from 30 centres were chosen as study samples.

Data Collection

Knowledge of anganwadi helpers on various components of the anganwadi activities was assessed by in-depth interview technique of each helper separately by means of pre-tested check list in local language (Tamil). The check list was related to supplementary nutrition, maternal care, breast feeding, hygiene/ sanitation and perception regarding their work.

Exclusion Criteria

Helpers whose job period was less than one year were not included in the study.

Ethical Considerations

A formal permission letter was obtained from the ICDS office in Chennai. A written fully informed consent was obtained from the participants. Participation in the study was voluntary and the participants were assured of confidentiality of the collected information.

Results

Of the 30 anganwadi helpers interviewed 17 were in the age group 40-59 and 13 were in the age group 20-39. 22 had higher secondary education and 8 primary level education. Of the helpers 21 had minimum of 5 years of experience in the same anganwadi.

Twenty six of the anganwadi helpers were widows and 10 helpers were unmarried due to financial constraints. Most of the anganwadi helpers belong to Christian community and few were Hindus. None could tell the full form of ICDS but all of them mentioned the name of the scheme in the local language Tamil.

All helper's could enumerate all the six components of ICDS and could list all the tasks to be performed by them. All of them were

aware of attendance register, stock register, visit records, weight records but they could not mention other registers.

Only 4 helpers were going to children houses everyday to bring them to centres. All were aware that they have to open the anganwadi at 8am and close at 3.30pm. All helper's take weight of the child every month but did not know about growth charts.

Observations During The Interview

The anganwadi helpers were in uniform during the time of interview. They had kept the premises of the anganwadi clean. Some of the helpers went and brought the children from their home to the anganwadi centre. They checked the children for the cleanliness. They assisted the children when they passed urine or motions and cleaned them afterwards. They also cleaned the anganwadi utensils after cooking and serving. They washed their hand before cooking and also before serving food to children. The Children are very much attached to helpers rather than the workers. The helpers helped and Assisted anganwadi worker in all her activities. They knew how to weigh children. They had good relationship with the community.

Knowledge of the Helpers on Supplementary Nutrition

Of the 30 helpers interviewed 28 had knowledge about the quantity of food given to each child. The helpers knew about supplementary feeding and the beneficiaries of the feeding scheme. They also know about the iron and folic acid tablets and vitamin A solution.

Of the 30 helpers interviewed 26 knew the importance of sathumaavu but only 6 knew the ingredients and 18/30 mentioned the correct dose to be given to children and pregnant woman. Rice, fruits, vegetables, egg, dhal, idly, fish, pulses are the nutritious weaning foods

suggested by all the anganwadi helpers to the pregnant woman and mothers.

Knowledge of The Helpers on Maternal Health

Of the 30 helpers interviewed 27 of the helpers were aware of their role and services provided at the anganwadi centre for the maternal care, 27 were aware of the importance of ante natal care but only 6 mentioned that two doses of tetanus toxoid should be given for the expectant mothers. Half of them knew to identify "At Risk" Pregnant woman.

Only 15 of them knew about the mother child card and 21 mentioned the minimum number of antenatal checkups to be three. Regarding IFA tablets 29 of them know that it is meant for "pregnant woman, helps to prevent anaemia" but only 11 of them knew the duration and actual constitution of the tablets.

Knowledge of The Helpers on Breast Feeding:

Of the 30 helpers interviewed 22 of them knew the age group of breast feeding and the importance of breast feeding. All helper's mentioned that it helps to prevents illness and provide immunity to the child. Eighteen of them said that breast feeding should be initiated within half an hour after birth. Only 6 of them said that breastfeeding should be initiated within one hour after birth. Only 19 could define exclusive breast feeding. Twenty six were aware of proper time and methods of weaning.

Knowledge of The Helpers on Oral Rehydration Solution

Only 8 helpers could correctly write the constituents of ORS powder and proportions in which they are mixed and the way to give them. Twenty of them of them knew to prepare homemade solutions.

Knowledge of the Helpers on Hygiene/ Sanitation

All but one of them maintained good hygiene among themselves and the children by washing their hands with soap and water after using toilet and before serving food.

Perception

Opinion about the Scheme

These are some of the opinions given by anganwadi helpers about the scheme:

1. *"It is a boon for people with low economic status"*
2. *"It provides good employment opportunities."*
3. *"I feel very happy working here as I like to do social service looking after children."*
4. *"Though government gives many benefits we are not getting what we should be getting."*
5. *"I feel looking after children is my important responsibility among all my works as I treat them as my own children."*

Suggestion by the Helpers to Improve the Quality of the Scheme

1. Most of the helpers suggested that minimum one hour should be spent in outdoor activities.
2. They suggested that English medium of teaching should be introduced.
3. They also suggested monthly exhibition for the public to create awareness regarding various activities taking place in the ICDS.
4. They suggested active participation and interaction from community members so that the scheme functionaries can understand their problems and expectations.

5. They demanded contribution and support from the local government.

6. They felt that job opportunities for young mothers can be opened up.

7. Some of them also emphasized the need for a permanent building for the anganwadi.

Type of support they expect to perform their work

These are some of the opinions given by anganwadi helpers:

1. *"Need salary to be increased and need holiday."*
2. *"Good interaction from the community members."*
3. *"Need training programmes so that we can also involve in all activities that is taking place"*
4. *"Happy if we get compliments based on the performance."*
5. *"Need separate space for cooking with good place."*
6. *"We need job security."*

Discussions

Though the level of practical knowledge of the various activities of the anganwadi centre was so good among the helpers, they had only average knowledge on the details of various services. Previous studies have concentrated on the anganwadi workers. In fact in most states the training and capacity building also focussed on the anganwadi workers alone. The anganwadi helpers are often left out of the picture.

Though the helpers knew the beneficiaries and what amount of nutritious food should be given to whom, they were not aware of the constituents of the nutritious supplement.

This extra knowledge is very important as it will enhance the reach and acceptability of the service if she is able to convince the mothers of the importance of the supplementary nutrition.

The helpers showed enthusiasm in knowing and providing antenatal care to pregnant woman, but their knowledge in the area was poor. Some of them could not mention the number of visits, the number of TT injections or the number of iron and folic acid tablets to be given to the pregnant woman. There is need to improve knowledge and awareness in this area also.

The level of knowledge on breast feeding practices was comparatively higher. Though most of them could correctly mention about the initiation of breast feeding, many did not know what is exclusive breast feeding. Therefore if the anganwadi helpers are empowered to give support and counselling on exclusive breast feeding to the mothers, it would improve the rates of exclusive breast feeding.

It was observed that many of the anganwadi helpers were woman from poor background, unmarried woman or widowed woman. Thus this scheme was seen as providing support and encouragement to the vulnerable women in the community. It gave these women a sense of importance and purpose.

Though the scheme did give the woman a support and encouragement the helpers did feel that there was a lack of cooperation and participation from the community. This could be attributed to the low respect given to these helpers. Further improving their capacity and knowledge will increase the level of respect in the community. As in most interviews of workers in any system, the woman did report a need for better working conditions, more salary and other benefits of the government system. These need to be addressed at the program level.

This study revealed that the anganwadi helpers were an important link in the ICDS scheme, but their level of knowledge on various activities of the anganwadi is not high. The village health nurse should make regular visits to centres to supervise the work of helpers, solve their problems and guide her in the management of all activities.

This would help them to develop their capacity in all areas. Re-orientation training programs in frequent interval of time should be organized for anganwadi helpers to update their skills and knowledge.

Acknowledgement

The authors acknowledge the help of Ms. Geetha veliah for her help and inspiration and Ms Uma Maheswari, District project officer (DPO) of Nagercoil for her support in data collection.

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Study of knowledge and practices on reproductive health among higher secondary students of Biratnagar Morang, Nepal.

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Background: Reproductive tract infection is the leading cause of ill health and death among Nepalese women of childbearing age. **Objectives:** The study aimed to assess reproductive health knowledge and practice among the higher secondary student of Biratnagar, Morang. **Method:** This was cross sectional study involving 170 respondents selected by multistage random sampling among girls of higher secondary school of Biratnagar, Nepal. The study instrument was a self administered questionnaire. **Result:** Overall knowledge on reproductive health was only 2.4%. However the knowledge regarding preventive measures of HIV was 58.8%, menstrual hygiene 58.2%. But it is worrisome that only 35.9% knew about emergency contraception and only 11.8% has knowledge on reproductive tract infection. **Conclusion:** Respondents had an average level of knowledge on the menstrual hygiene but their overall knowledge on reproductive health was below average. It is therefore recommend there should be intervention programs on increasing adolescent's knowledge on reproductive health since they are the most vulnerable group.

Introduction

The international conference on population and development (ICPD) in Cairo in 1994 for the first time introduced the concept of reproductive health through a life cycle approach. Reproductive health is a state of complete physical, mental and social well beings, and social well beings, and not merely the absence of reproductive disease or infirmity, in all matters relating to the reproductive system, and to its function and processes. Reproductive health includes sexual health, the purpose of which is the enhancement of life and personal relations and not merely counseling and care related to reproduction and STD. (1)

According to WHO, aged group 10 to 19 are considered as adolescent and the age between 15-24 years considered as youth, while ages from 10-24 are considered as young people. Many of the problems adolescents experience are inter related problems and should be regarded in a comprehensive manner. However,

adjusting to sexual development and protecting their reproductive health are major challenges for adolescents.(1) Adolescence is a challenging phase of life, within which the individual attains physical, sexual and social maturity. Adolescents are vulnerable because they lack knowledge and skills to avoid risky behavior and do not have access to acceptable, affordable and appropriate reproductive health information and services. Each day 25,000 girls are married and anticipated 100 million girls will be married in 2012. In the publication of WHO 2008, it was mentioned that adolescent girl who give birth each year have a much higher risk of dying from maternal causes compared to women in their 20s and 30s.

One third of the Nepal's population is aged 10-24 (Ministry of Health, New ERA and ORC macro 2002).(3) In Nepal adolescents often face severe poverty, limited access to education and health services and cultural taboos. Even though it has the highest literacy rates in South Asia include it also has large gender based differences. (3) The

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median age at first marriage is 18.1 years (NDHS 2006) hence child reproduction in Nepal starts early age. It is estimated that if the marriages were postponed from the age of 16 to 20-21, the number of births would decrease by 20-30% which eventually reduce the risk of maternal complication₁₈. Study conducted in India west Bengal by Bratati Banerjee and etl (14) revealed that the prevalence of anemia was significantly higher ($p < 0.05$) in the women in the teenage group (62.96%) than in women in the control group (43.59%).

Methods

Study site

The study was conducted among the students of higher secondary level in the Morang district of Nepal in sub metropolitan city Biratnagar. The district includes 27 higher secondary, 20 private and 5 public schools.

Study design: The study was descriptive cross sectional observational in nature. The study included only girls of higher secondary school.

Sampling and sample size: - A multistage random sampling technique was adopted. Sample size was calculated using the formula $n = z^2pq/L^2$, where p is the prevalence of knowledge about menstrual hygiene (0.406) with 15% allowable error at 95% of confidence interval. The sample size calculated was 170. The data was collected 85 from public and 85 from private. All the schools were divided into public and private higher secondary schools. Required sample size was collected separately from each public and private school. And questionnaires were distributed among respondents in the presence of researcher herself and collected after response.

Questionnaire development: The questionnaire was developed through literature review based on findings of a quantitative study conducted

in the same setting. Question was divided into four domain knowledge on menstrual hygiene, knowledge on RTI, knowledge on HIV and AIDS and knowledge on emergency contraceptive. Each domain consist of three question carrying equal marks, if respondent obtained 0 it was considered as poor knowledge, 3 was considered as complete knowledge and if respondent obtained 1 or 2 it was considered as poor knowledge.

Inclusive criteria: All girls student of 11 and 12 classes were taken.

Ethical issues: Permission was taken from the respective higher secondary school and then briefed to the respondent about the purpose of the study and that they have a right to participate, or withdraw from the study.

Data collection and analysis: The study was conducted in the month of July 2011. The data was collected by self administered structured questionnaire under the supervision of researcher herself. On the day of administration of the questionnaire, students who were found in the campus were requested to gather in the one class room of the campus. They were then informed of the research, its objective, and procedures and assured that the information collected would be treated as confidential and used only for research purposes. Students who gave their verbal informed consent were provided with self administered questionnaire. They were also asked to request for clarification if any item in the questionnaire was not clear. The respondents took 25 minute to half an hour to complete the questionnaire.

Results and analysis

Demographic characteristics of respondents

Table 1 shows the demographic characteristics of the respondent. Since respondents were from same class most of the respondent 62.9%

were of 17 years age group. Majority of the respondent were unmarried 98.2%, 94.7% were Hindu and 77.6% were living with parents and relatives. Almost all respondents 91.8% weren't involved in health related job or campaign till the data collection time.

Table 1: Demographic Characteristics

| Background Variables | Percentage % |
|---|--------------|
| Age | |
| 15 | 1.8 |
| 16 | 22.4 |
| 17 | 62.9 |
| 18 | 12.9 |
| Religion | |
| Hindu | 94.7 |
| Muslim | 2.9 |
| Buddhist | 1.8 |
| Kirati | 0.6 |
| Father's occupation | |
| Farmer | 8.8 |
| Business | 40.6 |
| Civil servant | 20.6 |
| Pensioner | 4.7 |
| Others | 25.3 |
| Mother occupation | |
| Farmer | 2.9 |
| Business | 5.3 |
| Civil servant | 8.2 |
| House wife | 72.9 |
| Others | 10.6 |
| Do your any relatives is in health job | |
| yes | 44.7 |
| No | 55.3 |
| Have you ever worked in health related job/campaign? | |
| No | 96.5 |
| Yes | 3.5 |

Knowledge and practice

Table 2 shows extent of knowledge of respondents on each domain. Among all domains, preventive measures of HIV and

AIDS domain was the highest known domain i.e.58.8% of respondents were able to answer correctly. And least was the knowledge regarding reproductive tract infection 11.8%.

Table no 2. Knowledge of respondent on each domain:

| Domain | % of complete knowledge |
|---|-------------------------|
| Menstrual hygiene | 58.2% |
| Reproductive tract infection | 11.8% |
| Preventive measure of HIV and AIDS | 58.8% |
| Emergency contraceptive | 35.9% |
| Over all knowledge on reproductive health | 2.4% |

Regarding the mode of RTI transmission only 21.2% gave the correct answer i.e. through unhygienic behavior during menstruation and similarly only 30% of the respondent were able to identify any two of the signs and symptoms of RTI. But 58.2% of the respondents had a good knowledge regarding menstrual hygiene. However, 35.9% of the respondents only had complete knowledge regarding emergency contraceptives. Among emergency contraceptive knowledge 8.8% gave the answer that emergency contraceptive doesn't cause the termination of the pregnancy which was the least percentage for the correct answer. However, it is encouraging that 58.8% of the respondents were able to give the correct answer about the route of transmission of HIV and AIDS.

With respect to menstrual hygiene, only 41% of the respondents dry their washed napkin in sunlight. And also they have some kind of stigma related to menstruation in their home.

Discussion:

The most important finding in this study was the average to poor level of knowledge regarding reproductive health. The study done in China among unmarried migrant also shows that

participants do not have sufficient knowledge on all reproductive health components, specially the girls between the ages 15 to 19 years. The overall percentage of this study of complete knowledge was only 2.4%. There were relatively low proportions of respondent, who could correctly answer about the all domain i.e. about menstrual hygiene, reproductive tract infection, preventive measures of HIV and AIDS, and emergency contraceptives. Among all domains, there were relatively low proportions of respondent who could answer about symptoms, causes, and preventive measures of RTI. White offensive discharge, an important symptom was answered incorrectly by the majority of respondents, and majority of the girls did not report knowledge of transmission of RTI through unhygienic behavior during menstruation. Meanwhile, majority of the respondents couldn't mention whether RTI is a curable disease or not. This is of particular concern in developing countries like Nepal, as STIs such as Chlamydia, Trichomoniasis, Syphilis and Gonorrhoea are second only to maternal morbidity and mortality as the cause of death, illness and 'years of healthy life lost' among women in their child bearing years. (9) Comparison of findings is difficult as there are no published studies in Nepal investigating the RTI knowledge (other than HIV/AIDS) of adolescent schoolgirls.

The knowledge regarding HIV and AIDS prevention was high as Nepal government has been using wide range of IEC material regarding HIV and AIDS prevention. The study done in Nigeria also mentioned that the level of knowledge about the preventive measure of HIV and AIDS was appreciable.(10) Whereas, studies show that 92% of young people in Ho Chi Minh city know that the use of condoms protects against HIV and that there is existence of adequate knowledge of HIV but little concern for STI among female sex workers. (6)

Most of the students knew that females normally experience monthly / cyclical flow of blood per vagina; they knew correctly that age of menarche ranged from 11 to 14 years. These findings are similar to the study done in Nigeria by Lawan UM, Nafisa Wali Yusuf, Aisha Bala Musa.(5)

Unsafe abortion is a major public health problem in low and middle income countries. Young and unmarried women constitute a high risk group for unsafe abortions. It has been estimated that widespread use of emergency contraceptive may significantly reduce the number of abortion related morbidity and mortality.(7) .In my studies, minority of respondent only gave correct answer and among knowledge on emergency contraceptive most of the respondent couldn't identify the correct timing to administer emergency contraceptive pills. Only 49.4 % respondents know at least one method of emergency contraceptives. The study done in Ethiopia about knowledge, attitude and practice among female university students, in which the age of study participants ranged from a minimum of 17 years to a maximum of 41 years revealed that knowledge and practice of emergency contraceptives is very low. (7)

Conclusion and recommendation

Respondent had a high level of knowledge on the menstrual hygiene but their overall knowledge on reproductive health was on average especially on RTI and Emergency contraceptives. It is therefore recommend there should be intervention programs on increasing adolescent's knowledge on reproductive health since they are the most vulnerable group of reproductive health because they are future mother.

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Assessment of Menopausal Symptoms Using Menopause Rating Scale Among Middle Aged Working Women in Central Chennai

Sharanya GRG¹, Kalpana B²

Abstract

Background: A natural life stage-menopausal transition is a stormy time with fluctuating hormones, which leads to various physical and psychological symptoms. The health issues of women during the menopausal transition affects not only their quality of life but also leads to the heightened risk of many chronic diseases and disabilities, which have hardly been the interest of research. **Objectives:** This cross sectional descriptive study aims to determine common reported health problems in three stages of menopause among middle aged working women by using menopause rating scale, and also to assess the level of lifestyle followed in the three stages. **Methods:** Ninety six working women aged 40-55 years, were selected using simple random sampling with replacement from working place in five areas of Central Chennai, not including those with surgical menopause, hormone replacement therapy and pregnancy. They were surveyed by using Menopausal Rating Scale questionnaire consisting of 11 symptoms (divided into somatic, psychological, and urogenital). **Results:** Results revealed that most common symptoms reported were joint discomfort (94.8%) physical and mental exhaustion (87.5%), followed by psychological symptoms like depression (78.2%), anxiety (76%), hot flushes (77%) and insomnia (60%). Other complaints noted with less frequency were chest discomfort (58.2%), sexual problems (45.9%), vaginal dryness (38.6%), and bladder problems (28.1%). About 62.5% of middle aged working women followed moderate life style practices. The women in the premenopausal stage (n=40) had the most significant somatic and psychological symptoms compared to women in peri menopausal stage (n=20) and post menopausal stage (n=36), while post menopausal women had significant urogenital symptoms when compared to pre and peri menopausal stage. **Conclusion:** There is a need to address the health needs of women undergoing menopausal transition. There are significant amount of symptoms associated with menopause and addressing these can improve the quality of life of the women

Key words: Menopause, Lifestyle, Menopause Rating Scale.

Introduction

As per the World Health Organisation, the term natural menopause is defined as the permanent cessation of menstruation resulting from the loss of ovarian follicular activity, as it is recognized by 12 consecutive months of amenorrhea (without menstrual bleeding). (1) Menopause is a universal phenomenon as recognized by all women in all cultures as the

cessation of menstruation for one year. (2) With the increasing life expectancy, a woman spends almost a third of her life in transition, the hormonal changes taking place during this phase contributes numerous physical and psychological symptoms. This reproductive landmark is not always the same for all women in all cultures. (3) The prevalence of menopausal symptoms varies widely not only among individuals of the same population but also

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between different ethnic populations.

Mean age of menopause in India ranges from 40.32 to 48.84yrs.(3) The IMS (Indian menopausal society) has conducted a study across the country and the data showed that the age of menopause is about 47 years (source-Times of India,Oct 18th,2010) and in developed countries it ranges from 48.0 to 51 yrs.(3)

It is expected that 130 million Indian women live beyond menopause by 2015.(4,5) Current demographic trends clearly point out that menopausal and postmenopausal health has emerged as an important public health concern in India owing to improved economic conditions, rapid lifestyle changes, and increased longevity.(6) The onset of the psychological and physiological symptoms not only marks the end of women's reproductive function but it is followed by other health problems including cardiovascular diseases, breast cancer, osteoporosis and so on.

There are very few studies which have looked at the prevalence of menopausal symptoms among women in India. There are even lesser studies which have focused on life style.This study was planned to evaluate symptoms among working women above the age of 40, as well as to evaluate the lifestyle of these women.

Methods and Materials

This is a cross sectional descriptive study, conducted in the month of June 2011, and was carried out among women between the ages of 40 to 55 years who were working in central Chennai.The inclusion criteria consisted of women between the ages of 40 to 55 years,who had given consent to participate in the study. Pregnant and breast feeding women, women who underwent surgical menopause, women with uncontrolled medical conditions like diabetes, hypertension and women on

hormone replacement therapy were excluded from the study.(10)

Central Chennai comprises of five areas out of which one working institution was selected randomly from each area. From the list of eligible women in each of these work institutions, a sample of 110 women were selected by simple random sampling. This sample size was calculated by assuming a prevalence of menopausal symptoms as 50%, and the allowable error with 10% and confidence level of 95%.

A semistructured questionnaire was used for this study.It was divided into four parts

1) Socio demographic details including age, occupation, marital status, educational level.

2) Menopausal status was classified according to STRAW (Stages of Reproductive Aging Workshop) classification that divided menopause staging into pre menopausal, peri menopausal and postmenopausal.

- Pre- menopause : women who had regular periods, within the previous year.
- Peri- menopause : women who had irregular menstruation, but the last menstrual period less than 12 months ago.
- Post-menopause:women who had cessation of menstruation for at least12 months.

3) The Menopause Rating Scale (MRS) was used to assess the menopausal symptoms experienced by the working women, the scale composed of 11 symptoms which were further divided into 3 groups a) somatic symptoms consisting of hot flushes, insomnia, joint discomfort, heart discomfort b) urogenital symptoms consisting of sexual problems, bladder problems, vaginal

dryness c) psychological symptoms consisting of depression, irritability, anxiety, physical and mental exhaustion.(2,10,11,12)

4) In this study lifestyle was categorized into good, moderate and poor using range of positive scoring method of components considered. The component on lifestyle consisted of health responsibility, nutrition, stress management, exercise, self-actualization, and interpersonal relationship based on Walker, Schist and Pender instrument.

Results

The study population comprised of 96 respondents with 28.1%, 35.6%, 34.5%, in the age group of 40-45yrs, 46-50yrs and 51-55 yrs. Out of total women involved in study 46.9% were graduates, 89.6% were married, 7.3% were widowed, which is shown in Table -1. Among these women 40 (41.7%) of women were in pre menopausal stage, 36 (37.5%) were in the post menopausal stage, and 20 (20.8%) were in the peri menopausal stage.

Table-1- Background Characteristics Of Women Who Participated In The Study

| Background Characteristics | Number | Percentage |
|----------------------------|--------|------------|
| Age | | |
| 40-45 | 27 | 28.1 |
| 46-50 | 35 | 36.5 |
| 51-55 | 34 | 35.4 |
| Education | | |
| High School | 6 | 6.3 |
| Higher Secondary | 24 | 25.0 |
| Under Graduation | 45 | 46.9 |
| Post Graduation | 21 | 21.9 |
| Marital Status | | |
| Single | 1 | 1.0 |
| Married | 86 | 89.6 |
| Separated | 2 | 2.1 |
| Widowed | 7 | 7.3 |

Table-2 shows the frequency of menopausal symptoms, assessed by MRS. The most commonly reported symptoms were joint discomfort (94.8%), physical and mental exhaustion (87.5%), irritability (86.5%), hot flushes (77%) followed by psychological symptoms like depression (78.2%), anxiety (76%) and insomnia (60%). Other complaints noted with less frequency were heart discomfort (58.2%), sexual problems (45.9), vaginal dryness (38.6%), and bladder problems (28.1%).

Table 2- Frequency Of Menopausal Symptoms Among Middle Aged Women Assessed By Modified Menopause Rating Scale

| Menopausal Symptoms | Number | Percentage |
|--------------------------------|--------|------------|
| Joint discomfort | 91 | 94.8 |
| Physical and mental exhaustion | 84 | 87.5 |
| Irritability | 83 | 86.5 |
| Depression | 75 | 78.2 |
| Hot flushes | 74 | 77.1 |
| Anxiety | 73 | 76 |
| Insomnia | 58 | 60.4 |
| Heart discomfort | 56 | 58.2 |
| Sexual problems | 44 | 45.9 |
| Vaginal dryness | 37 | 38.6 |
| Bladder problems | 27 | 28.1 |

Table-3 shows the frequency of menopausal symptoms assessed by menopause rating scale in participants according to the menopausal status. The most of the somatic and psychological symptoms were more in the pre menopausal stage than in peri menopause and post menopausal women, whereas urogenital symptoms occurred more in post menopausal women.

Table 3 –Frequency Of Menopausal Symptoms According To The Menopausal Status

| Subscale (Menopausal Symptoms) | All N=96 | Pre Meno- pause | Peri Meno- pause | Post Meno- pause |
|-----------------------------------|-------------|-----------------------|------------------------|------------------------|
| Somatic | | | | |
| Hot flushes | 74 | 32 (43.2%) | 15 (20.3%) | 27 (36.5%) |
| Insomnia | 58 | 26 (44.8%) | 9 (15.5%) | 23 (39.7%) |
| Heart discomfort | 56 | 22 (39.3%) | 12 (21.4%) | 22 (39.3%) |
| Joint discomfort | 91 | 39 (42.9%) | 20 (22%) | 32 (35.2%) |
| | 83 | | | |
| Psychological | | | | |
| Irritability | 75 | | | |
| Depression | 73 | 38 (45.8%) | 18 (21.7%) | 27 (32.5%) |
| Anxiety | 84 | 34 (45.3%) | 14 (18.7%) | 27 (36%) |
| Physical and mental exhaustion | | 32 (43.8%) | 15 (20.5%) | 26 (35.6%) |
| | 27 | 36 (42.9%) | 18 (21.4%) | 30 (35.7%) |
| | 37 | | | |
| Urogenital | | | | |
| Bladder problems | 44 | | | |
| Sexual problems | | 9 (33.3%) | 4 (14.8%) | 14 (51.9%) |
| Vaginal dryness | | 15 (34.1%) | 9 (20.5%) | 20 (45.5%) |
| | | 7 (18.9%) | 8 (21.6%) | 22 (59.5%) |

Table 4 shows life style changes practiced by women. About 62.5% of the women fell under moderate level of lifestyle, 15.7% had good and 21.4% poor lifestyle. About 47.6% of women in post menopausal stage followed poor lifestyle practices, and 48.5 % of women in pre menopausal stage follow moderate lifestyle practices.

Table 4 –Life Style Patterns Followed In The Stages Of Menopause

| Lifestyle Level | Premeno- pause | Perimeno- pause | Post Meno- pause |
|-----------------|-------------------|--------------------|------------------------|
| POOR | 5 (23.8%) | 6 (28.6%) | 10 (47.6%) |
| MODER- ATE | 29 (48.3%) | 10 (16.7%) | 21 (35%) |
| GOOD | 6 (40.0%) | 14 (26.7%) | 5 (33.3%) |

Discussion

The mean age of menopause in this study was found to be 46±3 years, which is slightly higher than the mean age of menopause in India - 44 years and three months(13). However, sedentary lifestyle and diet rich in nutrition and fat has pushed the age of menopause among urban women. Since larger number of women experience menopause in their forties, they have a longer period of estrogen deprivation and its consequences. ‘Experts say that the average menopause age in urban women is rising’.(source-TOI,oct18th,2010) The data in a multi-centric study conducted by the Indian Menopause Society (IMS) across the country shows that the menopausal age among urban women is now between 47 and 52 years as against the previous 40-45 years. Lifestyle changes, improvement in nutrition and increasing obesity are the reasons for rising in the mean age of menopause.

There are no documented/published studies regarding menopausal health problems in Chennai, whereas in India there are few studies on menopausal health problems. The assessment tool that was used in this study was based on standard Menopause Rating Scale (MRS) questionnaire. Menopause Rating Scale (MRS) questionnaire has been used in this study as this has been widely accepted in many research studies. In this study major symptoms were found to be joint discomfort which has been similar to the studies conducted previously on Malaysian women (9,10,12) and also done among rural women in Pakistan(11). A previous study done among Malaysian women found that physical and mental exhaustion follows after joint discomfort. Whereas sleeping problems were prioritized among Malaysian women, insomnia in the current study was marked with least importance. Moreover other differences identified from previous published studies done on Malaysian women is that somatic and psychological symptoms are more in peri menopausal stage, where as the present study results showed that those symptoms were higher in pre menopausal women compared to peri menopausal and post menopausal women, but urogenital symptoms occurred more in post menopausal women in both the studies. The previous similar study from Pakistan also showed that somatic, psychological and urogenital symptoms were higher in peri and post menopausal women compared to the premenopausal women. This difference is probably due to the arbitrariness of the classification of pre and peri menopausal state as it is part of a single continuum.

In this study somatic and psychological symptoms were prevalent in pre menopausal stage when compared to other two stages and this was also statistically significant as shown in Table 3. This can be explained by the fact that in the premenopausal women estrogen

fluctuations occurs the most, hence women experience more of psychological and somatic symptoms in this stage.

An increase in the life expectancy of women in India will lead to a larger population of women in postmenopausal women in upcoming years. (11) Hence physical and psychological symptoms arise due to fluctuating hormones during transition phase can be managed effectively if healthy lifestyle patterns are adopted by middle aged women. The study found that good life style was not practiced by most of the women. If the life style is improved, it can lead to significant improvements in the quality of life.

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Injuries and its Management among Primary School Children, Tamilnadu

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Abstract

Background: Very little is known about the first response to childhood injuries at the school level and the preparedness of schools to respond to these injuries. **Objectives:** The objectives of the study are, to assess the common childhood injuries in primary schools, to assess the knowledge of teachers on first aid for injuries, to assess the quality of first aid care given by primary school teachers and to assess the level of preparedness for first response to childhood injuries in primary schools. **Methods:** A cross sectional descriptive study was done with the help of a structured self administered questionnaire to 166 Primary School Teachers (PSTs) selected by stratified random sampling method. **Results:** About 35.5% PSTs have handled cut injuries, 32.5% head injuries and 31.9% fractures. Only 15% Primary school teachers had good knowledge on first aid and 5.4% were giving good first aid care. Three schools out of 24 had no first aid material. **Discussion:** There is much scope for improvement of knowledge and skills of primary school teachers in Tamil Nadu on first aid for childhood injuries. This should be taken up as a priority under the school health program.

Introduction

As per UNICEF "Injury is the principal cause of mortality in children in all developed countries accounting for 40% of deaths in the age group 1 to 14 years" (1) This is also true of developing countries, where there is significant amount of injuries caused due to accidents. As per Junior Red Cross (JRC), first aid is the help given for a person injured accidentally or suffering from acute onset of illness, before proper medical assistance. As children spend a significant part of their lives in schools, it is important for schools to be prepared to provide first aid for childhood injuries.

In a previous study based in Chandigarh, only 6 % of schools had health care/first aid kits and 65% of schools were referring their sick and injured children to Govt. health centres(2).

Another study from Turkey showed that 65.1% of teachers gave incorrect answers regarding epistaxis, 63.5% for bee stings, and 88.5% for abrasion. It was found out that as the age of

the teachers increases, appropriate first-aid practice becomes more and more unlikely (3).

In such a setting this study was conducted to assess the common childhood injuries happening in primary schools, to assess the knowledge of teachers in first aid, to assess the quality of first aid care given by primary school teachers and to assess the level of preparedness for first response care in primary schools in Tamil Nadu.

Methodology

The study was conducted in (please enter the name of the district here) district of Tamil Nadu. For a prevalence of good awareness about first aid among primary school teachers taken to be (enter the prevalence that you used for sample size calculation here) and a relative precision of 10% with a 95% confidence level, the sample size calculated was 166. From six randomly selected blocks in the district, stratified sampling of schools was done stratified based on urban or rural location as well as government aided

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or private management. All the primary school teachers in the selected schools were included in the study. A structured questionnaire was given to the teachers and they were asked to respond to them. In this questionnaire the knowledge of the teachers regarding the necessary contents of a first aid kit as recommended by the JRC was asked as well as certain basic guidelines for providing first aid to children with injuries.

For assessing the level of childhood injury first response preparedness, the presence and quality of the materials and medicines available in the first aid kits in the schools were observed. If a particular material was appropriately present in the kit and was of good quality a score of 5 was given to it. Medicines which were not part of the essential list but were not harmful were given a score of 2. Medicines and materials which were not in the list and which were harmful and restricted, expired medicines and materials were given negative scores. Total scoring for each school was calculated and categorized.

To assess the quality of first aid given by teachers, they were asked to narrate the last episode during which they delivered first aid to child with injury. An independent nurse evaluated these narratives and gave a score on a scale of 1 to 5 based on the competence that they teachers demonstrated in providing first aid for injuries.

Results

Out of 24 schools which were covered in the study, 3 schools didn't have any first aid material at all. Among the other six were well prepared with good first aid kits, 9 were moderately prepared and 6 other ill prepared with a first aid kit.

Table 1 gives the background characteristics of PSTs who participated in the study. About

46% were from urban areas, 36% were from government schools, 30.7% from government aided schools and the rest from private schools. Among the PSTs 40% had less than 5 years of experience and 27% had 10 to 15 years of experience.

Table 1: Background characteristics of the respondents

| Based on Location | Number of teachers | Percentage |
|--------------------------------|--------------------|------------|
| Urban | 89 | 53.6 |
| Rural | 77 | 46.4 |
| Based on type of school | | |
| Government | 61 | 36.7 |
| Aided | 51 | 30.7 |
| Private | 54 | 32.5 |
| Based on Experience | | |
| Less than 5 years | 66 | 39.8 |
| 5 – 10 years | 26 | 15.7 |
| 10 – 15 years | 46 | 27.7 |
| 15 – 20 years | 11 | 6.6 |
| 20 and above | 17 | 10.2 |

Among the injuries handled by the teachers, 35.5% were cut injuries, 32.5% minor injuries in head, 31.9% fractures, 25.3% wounds, 7.2% injuries to eyes, ears and nose and 23.5% others like insect bite, burns etc.

Regarding the knowledge of teachers about what materials that need to be present in the first aid kit, it was found that not even 1 told more than 6 materials recommended for first aid kit by JRC. 15% had shown good knowledge reporting 5 to 6 materials. 13.5% of urban teachers and 15.6% rural teachers had poor knowledge. 21.3% of government teachers, 19.6% of government aided school teachers and 37% of private school teachers had good knowledge. It was found that knowledge of the teachers increased with experience. This is shown in Table 2.

Table 2: Knowledge level of teachers

| Characteristics | Good | Average | Poor |
|--------------------------------|-------|---------|-------|
| Based on Location | | | |
| Urban (89) | 12.4% | 74.2% | 13.5% |
| Rural (77) | 18.2% | 66.2% | 15.5% |
| Based on Type of school | | | |
| Government (61) | 21.3 | 65.5 | 13.1 |
| Aided (51) | 19.6 | 74.5 | 59 |
| Private (54) | 37 | 72.2 | 24.1 |
| Based on Experience | | | |
| Less than 5 years (66) | 6.1 | 77.3 | 16.7 |
| 5 – 10 years (26) | 11.5 | 73.1 | 15.4 |
| 10 – 15 years (46) | 19.6 | 65.2 | 15.2 |
| 15 – 20 years (11) | 36.4 | 45.5 | 18.2 |
| More than 20 years (17) | 29.4 | 70.6 | 0 |

One of the teacher reported, “Managing the students in class itself is stressful. Apart from that, managing wounds are beyond reach.” It was also noted that few teachers said kerosene was an essential material to be present in the first aid kit.

The study revealed that 28% of the teachers had not done first aid even once before in their life. Teachers, who had never done first aid, reported that they were not confident in providing first aid, which shows the need for training. Many of them had fear of blood.

No one knew how to give mouth breathing or any emergency procedures in need. Only 8% of those who had given first aid before were giving good quality care. 49.2% of urban and 48.2% rural teachers were giving improper care or wrong medicines. It was also noticed that private school teachers were given lower quality care compared to the government and government aided school teachers. Table 3 depicts these details.

Table 3: Quality of first aid care

| Characteristics | Good | Average | Poor |
|---------------------------------|------|---------|------|
| Based on Location | | | |
| Urban (63) | 7.9 | 42.9 | 49.2 |
| Rural (56) | 7.1 | 44.6 | 48.2 |
| Based on Type of schools | | | |
| Government (49) | 8.2 | 42.9 | 49 |
| Aided (37) | 5.4 | 51.4 | 43.2 |
| Private (33) | 9.1 | 36.4 | 54.5 |
| Based on experience | | | |
| Less than 5 years (39) | 5.1 | 35.9 | 58.9 |
| 5 – 10 years (21) | 4.8 | 52.4 | 42.9 |
| 10 – 15 years (37) | 10.8 | 40.5 | 48.6 |
| 15 – 20 years (8) | 12.5 | 37.5 | 50 |
| More than 20 years (14) | 7.1 | 64.3 | 28.5 |
| Based on Training | | | |
| Trained (25) | 4 | 8.5 | 38 |
| Not trained (94) | 40 | 44.7 | 46.8 |

Some first aid practices noticed during the study were : Using talcum powder to stop bleeding from injuries, Asking the child to blow the nose in case of bleeding, Applying castor oil on the abdomen for stomach pain etc. The students were asked to continue in class and attend classes even if they had injuries or were sick.

Only 18.7% had training in first aid. Among them, 16.1% had good knowledge and 4% were able to give better quality of care. The study also revealed that 28% of teachers even though they have good knowledge, they were unable to give first aid.

The other findings of the study are, 51.2% of the teachers are dependent on two wheelers for transporting the injured child. 42.2% of teachers wait for parents of injured child to pick their ward. 60% do not have any contacts of the hospitals or doctors nearby and 16.9% of the teachers made the injured child to attend their classes. 85% of teachers were taking their students to government services only.

Discussion

The results found in this study shows that not many teachers have good knowledge on first aid coincides with the study done by Muruvvet Baser RN et al, in Turkey, which showed that 65.1% of teachers gave incorrect answers regarding epistaxis, 63.5% for bee stings, and 88.5% for abrasion.

As per the intervention study done by V. Bhatia et al, in Chandigarh, reveals that only 6 % of schools had health care/first aid kits in pre-intervention phase and 65% of schools were having facility for referring sick children to Govt. health centres coincides with the study findings which shows 85% of primary school teachers are getting referred to government services only.

The percentage of teachers well versed in first aid is very low. This may be because of the lack of training for school teachers. In few places though training programs are arranged, teachers are not motivated to attend. The reluctance may be due to the work load of teachers. Many trainings are being conducted on weekends and also teachers need to travel far for the training. So, many are found to be avoiding the training program.

Many teachers have not given first aid in their life. On finding out the reasons for this, it was found that many were neither confident in delivering care nor had confidence to deal with blood. This shows the need for training to teachers due to which they may deliver proper care with confidence.

Most of the schools were not prepared in terms of first aid. This may be because of the absence of strict laws supporting this issue. This may be even due the cost factor behind maintenance or due to lack of knowledge on first aid.

If first aid is taken care of, many deaths and permanent damage to children like loss of vision, hearing etc., can be reduced to minimum. Many the times first aid given immediately is the treatment for preventing further damage.

First aid is important for everybody in our day today life because it might save many lives. It is most important in schools because, the kids who are very playful may fall anytime and get hurt. They will not be able to express what they are going through and seek for help. Many times they may not understand the consequences of any accident, so they will not report even if it is a grave injury. As a parent away from home, teachers should have the capacity of diagnosing the condition and do the proper first aid. So it is very important to include First aid training program as a part of school health program.

A training program on first aid must include the training on various type of injuries, and the Dos and Don'ts for that. It should also develop confidence for teachers in delivering care. A program should also enhance the knowledge of teachers on how to use appropriate medicines and materials in appropriate time. It should also give training on how to maintain every thing in the kit. Above all , it should emphasise the importance of first aid in life.

It is equally important to motivate the teachers on participating in the training program. This may be done by conducting the program close to their schools, giving them compensatory holiday. Training must be informal involving everybody and encouraging team work. It is very important to conduct refresher training until teachers are becoming well versed in all the life saving techniques.

Program can also include doctors staying close to the schools through which the teachers

might get to know them personally and will call them for help in case of emergencies. And also organisations like Red Cross and Scouts will also help schools to get sponsors for their first aid kit which reduces cost burden.

These doctors can be given responsibility to visit the schools regularly. The first aid kit will be maintained properly by the teachers, if somebody is checking on the quality and maintenance. This helps the schools to have all the necessary materials supposed to be there in schools. Most importantly keeps children away from harmful drugs which are given in most instances without doctor's prescription.

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The role of exercise in regularizing menstrual pattern in women with Polycystic ovary syndrome.

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Abstract

Introduction:- Polycystic ovarian syndrome is the presence of anovulation, androgen excess and a heightened risk for cardiovascular diseases and diabetes. The aim of the study was to assess whether polycystic ovary syndrome (PCOS) patients following lifestyle modification along with medicine had regularization of menstrual pattern and weight loss compared to patients following only medicines. **Methods:** - The study was done in Mumbai (Maharashtra). A convenient hospital based sample of 33 PCOS patients who were diagnosed by Gynaecologist and Endocrinologist were included in the study in a non-randomized and unblinded manner. The main outcome measures were (i) Change in menstrual pattern. (ii) Change in weight pattern. **Results:** - There were no significant changes in menstrual pattern between patients following lifestyle modification and medication rather than patients following only medicine (p-value= 0.731). There was a significant difference in weight loss between patients following lifestyle modification and medication rather than medication alone (p-value= 0.015). The study did not show any association between weight loss and menstrual pattern of the patients following lifestyle modification along with medication rather than medication alone (p-value= 0.357). **Conclusion:** - The result suggests that patients who have followed lifestyle modification have seen change in weight loss which is a positive indicator for the improvement in the condition.

Introduction

Polycystic ovary syndrome is a common endocrine disorder affecting 5- 10 % of women in their reproductive age group (15-49 year old age group).(1) The article which was published in Delhi's Times of India mentioned that 35% of women in India in their reproductive age group suffer from PCOS and the reason why they are suffering is because of increasing obesity.(2) Also the article which was published in Bangalore's DNA has stated that adolescent girls are falling prey to PCOS due to sedentary lifestyle and increased obesity. (3)

Polycystic ovary syndrome is an emerging hormonal disorder because of which women are finding it hard to conceive. According to National Institute of Child Health and Human Development, PCOS is characterized by chronic absence of ovulation because of which women have menstrual irregularities, high level of

androgens causing hirsutism and acne and cyst on one or both the ovaries.(4)

Many of the researchers have found association of PCOS with insulin resistance, impaired glucose tolerance, metabolic syndrome, obesity, diabetes, cardio-vascular disease (heart disease and high blood pressure) obstructive sleep apnea and ovarian cancer. (5) The study done in Australia by Moran LJ et al, have shown that weight loss leads to improvements in cardio-vascular and reproductive parameters potentially mediated by improvements in surrogate measures of insulin resistance.(6)

Lifestyle modification is considered to be most effective in improving the status of treatment as it induces weight loss. Weight loss alone through lifestyle change improves menstrual frequency. Many researchers have recommended that through weight loss there is a possibility

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that women can conceive and also other reproductive problems can be averted. Through weight loss obesity and insulin resistance can be averted which are the leading factors for cardiovascular disease (7). In another in Australia it was shown that in overweight and obese women with PCOS, the addition of aerobic or combined aerobic- resistance exercise to an energy-restricted diet improved body composition but had no additional effect on improvements in cardio-metabolic, hormonal and reproductive outcomes relative to diet alone.(8)

Therefore, the main aim of this study is to assess whether regular exercise helps in weight reduction in women with PCOS, to assess whether weight reduction helps in regularizing menstrual cycles of women with PCOS and to assess whether lifestyle modification helps in regularization of menstruation in women with PCOS.

Method

This is a cross-sectional descriptive study which was conducted in Mumbai, capital of Maharashtra. The patients who were diagnosed and confirmed by either Gynaecologist or Endocrinologist to have PCOS were included in the study. The patient who were confirmed and diagnosed of PCOS should at least have 2 conditions out of 3 i.e. the patient should have either chronic absence of ovulation (menstrual irregularities), high level of androgen or cyst on one or both the ovaries. Lifestyle modification was defined as long held habits of diet or physical activity that has been modified or eliminated and continued for 3 or more months.

The tool used for study was a self-administered questionnaire. The questionnaire consisted of their general information, their family history if their mother, suffered from polycystic ovary syndrome, information on menstrual pattern, medicines which they followed and information

was collected if they followed diet and exercise modification. The questionnaire was pre-tested and accordingly changes were made in the questionnaire.

An informed consent was filled by each participant. The questions were read out to patients and they answered the questions.

Results

Most of the patients who were interviewed were students and unmarried, 11 patients were married and 1 was divorced as shown in Table 1. The menstrual pattern for one year after first menstruation was regular for 15 patients and rest 18 had irregular menstruation. Twenty four patients were diagnosed with PCOS at the age group of 15-25 and remaining others were diagnosed at the age of 26-36. None of the patient's mothers had irregular menstruation and none of the patient's mothers had polycystic ovary syndrome. Also, they were asked whether they knew if their first cousin had polycystic ovary, 6 out of 33 told that their first cousin who had Polycystic ovary syndrome.

Twenty-six of the women had menstrual irregularities and either abnormal pain, acne or hirsutism. Twenty four patients followed allopathy medicine, 6 followed homeopathy and 3 followed both the types of medicine. Sixteen patients suffered from side effects after consumption of medicines. Immediately after the diagnosis, patients who followed diet as well as exercise along with medicines were 5, exercise with medicine were 15, diet with medicine were 2 and the patients who followed only medicine were 11. Out of 33, 7 were obese, 7 had thyroid problems, 1 had developed insulin resistance and 2 had thyroid problem as well as they were obese and 16 patients did not have any other health problem. There were 20 patients who followed exercise and majority of them were involved in dancing, weight training,

Table 1: The table showing demographic characteristics of PCOS patients

| Demographic characteristics | Age | | Marital Status | | | Educational Qualification | | | |
|-----------------------------|-------|-------|----------------|---------|----------|---------------------------|-------|------|-----|
| | 16-30 | 31-45 | Unmarried | Married | Divorced | S.S.C | H.S.C | Grad | P.G |
| Frequency | 28 | 5 | 21 | 11 | 1 | 1 | 1 | 18 | 13 |

Table 2: The table showing patients following medicine and lifestyle modification immediately after the diagnosis of PCOS.

| | Medicine | |
|----------------------|-----------|------------|
| | Frequency | Percentage |
| Diet + exercise | 5 | 15.2 |
| Exercise | 15 | 45.5 |
| Diet | 2 | 6.1 |
| No diet+ no exercise | 11 | 33.3 |
| Total | 33 | 100 |

yoga or any sport activity. Table no. 2 shows that after diagnosis of PCOS patients followed lifestyle modification.

Life style modification was statistically significantly associated with weight loss (p-value = 0.015). There was no significance between weight loss and change in menstrual frequency (p-value=0.357). The patients who followed lifestyle modification along with medicine showed no significance with the change in menstrual frequency (p-value=0.731).

Discussion

The main aim of the study was to assess whether regular exercise helps in weight reduction and the study gave significant association between exercise and weight reduction, whereas other objective of the study that is whether weight reduction helps in regularizing menstrual pattern did not show any significant association in this study. Also, association between lifestyle modification and menstrual pattern was not established, the reason might be due to small

sample size In this study, due to small sample size there was no significant change between weight loss and its impact on menstrual frequency whereas the study conducted in Leeds by Thomas Tang et al showed that weight loss alone through lifestyle changes have increased menstrual frequency.(7) In the study conducted in Australia by Robert J Norman has mentioned that short term weight loss has been consistently successful in reducing insulin resistance, restoring ovulation and fertility. (10) In this study, there is an association with the patients following lifestyle modification along with medicine with the weight loss but no association can be shown with reduction in insulin resistance or restoring ovulation or fertility as these parameters were not considered in this study.

Also, in another study conducted by Farshchi et al stated that use of drugs to either improve insulin sensitivity or to promote weight loss are justified as a short term measure, and are most beneficial when used early in combination

with diet and exercise.(9) Among the study population, 22 patients along with medicine followed lifestyle modification and showed regular menstrual pattern as well as weight loss but due to small sample size the relation between weight loss and its impact on menstrual frequency could not be studied.

The study done in Adelaide in Australia by Thomson RL et al showed that in overweight and obese women with PCOS, the addition of aerobic or combined aerobic- resistance exercise to an energy- restricted diet improved body composition but had no additional effect on improvements in cardio-metabolic, hormonal and reproductive outcomes relative to diet alone.(8)9) In this study, patients were not categorized on the basis of their exercise as the sample size was less. The same was concluded by the study done in New York which had allotted patients in intervention groups one with metformin, one with metformin with lifestyle modification and lifestyle modification with placebo the results which they obtained was modest weight reduction was found in all treatment groups, with the most significant reduction occurring with the combination of metformin and lifestyle intervention and ovulation rates did not differ significantly between groups.(5)

It has been known that PCOS is associated with many other health problems like cardio-vascular disease which has been indicated in the study done by Meher-un-Nisa in Buraida that the Saudi females have high frequency of obesity which is the most important risk factor for PCOD.(11) All manifestations of PCOD are more frequent and severe in obese patients making PCOD with obesity a big medical as well as a social issue and a real challenge to manage. The study stresses on the need to control weight as the cornerstone of management of obese patients with PCOD. In this study, 9 out

of 33 patients are suffering from obesity which indicates that these patients are more prone to cardio-vascular disease.

As this condition is getting more common in adolescent girls, if the promotion of healthy food and regular exercise is done in schools the girls prone to this condition will be reduced. The promotion of healthy food and regular exercise is necessary as PCOS is due to change in lifestyle and mainly due to sedentary lifestyle as most of the students sit at home in front of computer or television. The comprehensive counseling should be given to patients about the line of treatment available, their side effects, the pros and cons of the polycystic ovary syndrome and the importance of regularity of menstruation should be given to patients.

The limitation of the study was sample size as to reach a conclusion was difficult with such small sample size. Also, the other limitation of the study was recall bias as they had to recall their mother's menstrual pattern, also the time period for which they followed exercise and diet was based on how much they recall.

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Quality Assessment of Female Laparoscopic Sterilization in Government Camps in Districts of Tamilnadu

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Objective : To study the quality of care provided during Pre, Intra, Post operative procedures at a Female Laparoscopic sterilization services in government camps in Districts of Tamilnadu. **Methods and Design :** A Descriptive cross sectional, in depth interview based survey was conducted in June 2011. Systematic random sampling was applied for 75 Samples of post operative clients from three districts of Tamilnadu. Frequency analysis was conducted to describe the quality of the camps. **Outcome Measures :** Counseling to clients, Pre health check up, Clients waiting time before surgery, Toilet facility, Changing OT Clothes to the Clients, Adequate privacy during examination & procedure, Examination by the Doctor before discharge, Written instructions about post operative care, Clients staying time in camp after sterilization, Post Surgical problems, Hospital Staff visit to client's house **Findings :** The clients of Tiruppur district didn't get proper counseling (0%), enema before surgery (0%), proper waiting place before surgery (4.3%), adequate privacy during examination (8.7%), privacy during procedure (0%), changeover to OT dress to clients (0%), post operative check up given by the doctor before discharge (0%), written instructions about post operative care (0%), House visit by Hospital Staff (53.2%) when compare to Namakkal and Nagai districts. 47.8% (11/23) clients of Tiruppur district, 31% (9/29) clients of Nagapattinam district, 21.7%(5/23) clients of Namakkal district had post surgical problems like lower abdominal pain, lower back pain, lower abdominal pain with lower back pain, leg pain and pus collection. **Other Findings :** In Tiruppur district 78.3% of clients were not given proper bed after surgery and they were made to lie down on floor. **Conclusion :** On overall assessment of family planning camps in the 3 districts, Tiruppur was found to have very poor service delivery. For the best practice in government camps proper counseling, adequate privacy, post operative check up by doctors before the discharge, post operative house visit by health workers should be provided to the clients.

Keywords : Laparoscopic sterilization, Quality assessment, better practice.

A Study on assessment of dietary pattern and nutritional status among elderly Malayali tribes of Vellore District

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Objectives: This study aims to assess the dietary pattern and the nutritional status of the elderly Malayali tribals of Vellore district of Tamilnadu. **Design and Methodology:** Cross sectional descriptive study was carried out during July 2011 in the four tribal villages of Vellore district of Tamilnadu State. In Vellore district two blocks (Ambur and Thirupattthur) were selected for this study. Elderly men and women belonging to the Malayali tribes were included in the study. Each prospective respondent was required to have attained the minimum age of 60 years and must be a permanent resident in the study area. Complete enumeration of the four villages (two villages of Ambur block and two villages of Thirupattthur block) was done and eligible respondents were selected for the study. Village mapping was done with the help of key informants and households with elders 60 years and above were considered for study. **Result:** Out of the one hundred elderly Malayali tribals studied, 53% were male and 47% were female. Fifty five per cent of the subjects were between the ages of sixty and sixty-nine and fourteen per cent of the subjects were at least eighty years old. In terms of marital status, 73% were married and 24% were widowed. Majority of the farmers were either illiterate or with only primary school education. The result showed that most of them (72%) ate three times a day. Fifty three percent eat between meals and very less (20%) skipped meals. 43% of them ate fruits daily and 32% ate fruits occasionally. The types of food eaten were mainly cereals, pulses and millets in the form of Ragi porridge. 67% of them were non-vegetarian. 53% took dairy products daily in the form of milk and cup of curd. 18% consumed alcohol. The elderly tribes' daily caloric intake as calculated from food composition table ranged from 1210 to 3,305 calories in both sex. The Body Mass Index (BMI) showed that 60.4% males and 48.9% females are on normal nutritional status and 39.6 % males and 34% females categorized as malnourished. **Conclusion:** The present study indicates that elderly Malayali tribe's calorie intakes are 1210 to 3,305 calories per day. The Body Mass Index (BMI) showed that 60.4% males and 48.9% females are on normal nutritional status and 39.6 % males and 34% females were categorized as malnourished. Mid arm circumference in all male and female were found under normal category. The nutritional status of elderly can be improved by providing supplementary nutrition at day care center, creating nutrition awareness, along with nutrition screening, education and nutrition assessment and counseling.

Keywords- Elderly Malayali Tribes, Dietary pattern and nutritional status.

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A Study On Job Induced Stress Among Pharmaceutical Sales Representatives in Jaipur City of Rajasthan

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Stress is a most persisting factor in professional & modern life. The concept of stress was first introduced by the late Canadian-Hungarian medical scientist Hans Selye (1907-1983). It's an equivocal word, for some it means excitement and challenge ("good stress or eustress") for many others it reflects an undesirable state of chronic fatigue, worry frustration and inability to cope ("bad stress or distress"). Job stress is defined as harmful physical and emotional responses that occur when the requirements of a job do not match the capabilities, resources, or needs of the worker and can lead to poor health and even injury. Pharmaceutical Sales Representatives (PSRs) are that cadre of people who are mainly involved in the sales promotion of the drugs or pharmaceuticals and work under stressed conditions. It is evident by a research that PSRs are at increased risk of ill health due to the nature of their work. This study was done to capture the level of stress and various factors responsible for the existence of the job induced stress among PSRs. This study was a descriptive cross-sectional study involving 68 PSRs (pharmaceutical sales representatives) working in different pharmaceutical organization. Convenient sampling was used in selecting PSRs to participate in this study. The questionnaire consisted of four parts first part was about the socio-demographic characteristics, second part tried to assess the job induced stress with the help of Work-Stress questionnaire, the third part was to capture some of the factors responsible for the job induced stress among PSRs and lastly the fourth part tried to explore some physical and emotional responses. Most of the PSRs are in 25-29 years of age i.e. 55.9 % followed by 20-24 yrs (39.7%) and 4.4% are from >30 years of age. Majority of them (39.7 %) had work experience of less than 2 years 29.4 % had work experience of 2-4 years followed by 16.2% having experience of 4-6 years and those with >6 years of experience only contributing 14.8%. The main reasons for the dissatisfaction among subjects regarding their job included unpleasant task reported by 82.5 %, no job security by 77.5%, lack of variety by 75%, 75% reported inadequate incentives, 72.5% said that they have to stay away from their home followed by 70% who found their job profile of low social value, 67.5 % said they have to travel a lot, 67.5% said that they have unclear /unfair performance system and 65% found lack of opportunity for promotion. According to the work stress questionnaire majority i.e. 55.9% of the PSRs were scored between 46-60 which indicates that they were often under pressure and felt some form of stress. Given this high prevalence of job induced stress, any development in the nature of job profile and working hours need to be considered in the context of the well being of the PSRs. Further research is necessary to delve deeper into the various reasons for job induced stress and the solutions.

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Assessment of complete immunization status among In-migrant people in Hosur

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Abstract

Background: Migration is a common phenomenon in almost all countries and communities. Hosur is one of the major industrial area which employs large number of seasonal migrants. Children among migrant parents have low immunization status and need specific care. Therefore the present study was under taken with the following objectives. 1. To determine the coverage of childhood immunization appropriate for age among migrant living in hosur. 2. To determine the awareness about immunization among migrants. **Methods:** This is a descriptive cross-sectional survey of 93 migrant mothers with a child age 12-24 months, who were interviewed with a pretested questionnaire. Data pertaining to the reception of various vaccines, migration history and some other income details were collected. **Result:** 97.4% of the children between the age group 12 to 24 months were fully immunized; coverage was higher for BCG(100%) and lowest for measles (91.4%). The awareness about immunization among migrant people was about 95.7%. **Conclusion:** The immunization coverage among migrants is high but proportion immunized within the appropriate age was low among children of working mothers than non-working mothers. Services must be delivered with a focus; investments are needed in education, socio-economic development and secure livelihoods to improve and sustain equitable health care. Around 10% of the families depend on the private sector for immunizing children.

Key words: Immunization; migrants; immunization coverage, awareness

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Perceptions on Iron and Folic Acid Supplementation during pregnancy, among fisherwomen in Kanyakumari district, Tamil Nadu

Amutha Prasad R¹, Anil Kumar IK²

One of the greatest challenges in antenatal care in India is Iron and Folic Acid (IFA) supplementation. According to NFHS-3 only 65% of pregnant women in India received IFA supplementation and only 23% took the supplementation for a full course of 100 days. In rural areas this is much lesser with 61% and 19% women getting IFA and taking it respectively. The most common reasons for this seem to be poor awareness, side effects or the fear of side effects and wrong beliefs and perceptions about the tablets. A study on health seeking behaviour of fisherwomen in Kanyakumari district of Tamil Nadu was done by qualitative research methods using focus group discussion methodology. A total of ten focus group discussions were conducted. Manual thematic analysis was done. One part of the important findings from the FGDs on consumption of IFA are presented here.

Some of the women said:

“We go regularly for the check up and have injections. But we do not take the Iron tablets.”

“Taking the Iron tablets will affect the growth of the baby in the womb”

“Taking the iron tablets will make us weak”

Apart from this the women also feared the other side effects of the IFA.

Anemia among pregnant women is a major cause for morbidity and mortality associated with child birth both for the mother and the baby. Thus, IFA supplementation, for all pregnant women is an essential step for reducing anemia associated morbidity and mortality during pregnancy. Significant perceptions and beliefs act as barriers for utilization of the public health supply of IFA for pregnant women. There is a need to improve awareness, remove anxieties and false beliefs and promote the use of IFA, especially among marginalized women such as the fisherwomen.

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