# Community and Public Health Nursing






Corresponding address
**Red Flower Publication Pvt. Ltd.**
48/41-42, DSIDC, Pocket-II, Mayur Vihar Phase-I
Delhi - 110 091(India)
Phone: 91-11-22756995, 22754205, 45796900
E-mail: info@rfppl.co.in
Web:www.rfppl.co.in

**Community and Public Health Nursing (CPHN)** focuses on health care issues relevant to all aspects of community practice - schools, homes, visiting nursing services, clinics, hospices, education, and public health administration. Well-researched articles provide practical and up-to-date information to aid the nurse who must frequently make decisions and solve problems without the back-up support systems available in the hospital. The journal is a forum for community and Public health professionals to share their experience and expertise with others in the field. CPHN aims to provide worldwide access to timely research and practice features of use to public health nurses, administrators, and educators in the field of public health nursing. Its scope is the range of population-based concerns and interventions in which nurses are involved. The journal emphasizes scholarship on vulnerable populations. Articles include research studies, program evaluations, practice concepts, and educational features published with the goal of replication and development, and theory, education, methods, policy, and ethical and legal papers that stimulate discussion and public debate. Authors from all disciplines are invited to submit manuscripts relevant to Community and public health nursing. Authors who have questions about the appropriateness of a manuscript for publication in this journal are encouraged to communicate with the Editors prior to submission.


**Subscription Information**

**India**
**Institutional** (1 year) (Print+Online): INR5500

**Rest of the World**
Insitutional (1 year) (Print+Online): USD430

**Payment instructions**
***Online payment link:***
http://rfppl.co.in/payment.php?mid=15

***Cheque/DD:***
Please send the US dollar check from outside India and INR check from India made. Payable to 'Red Flower Publication Private Limited'. Drawn on Delhi branch

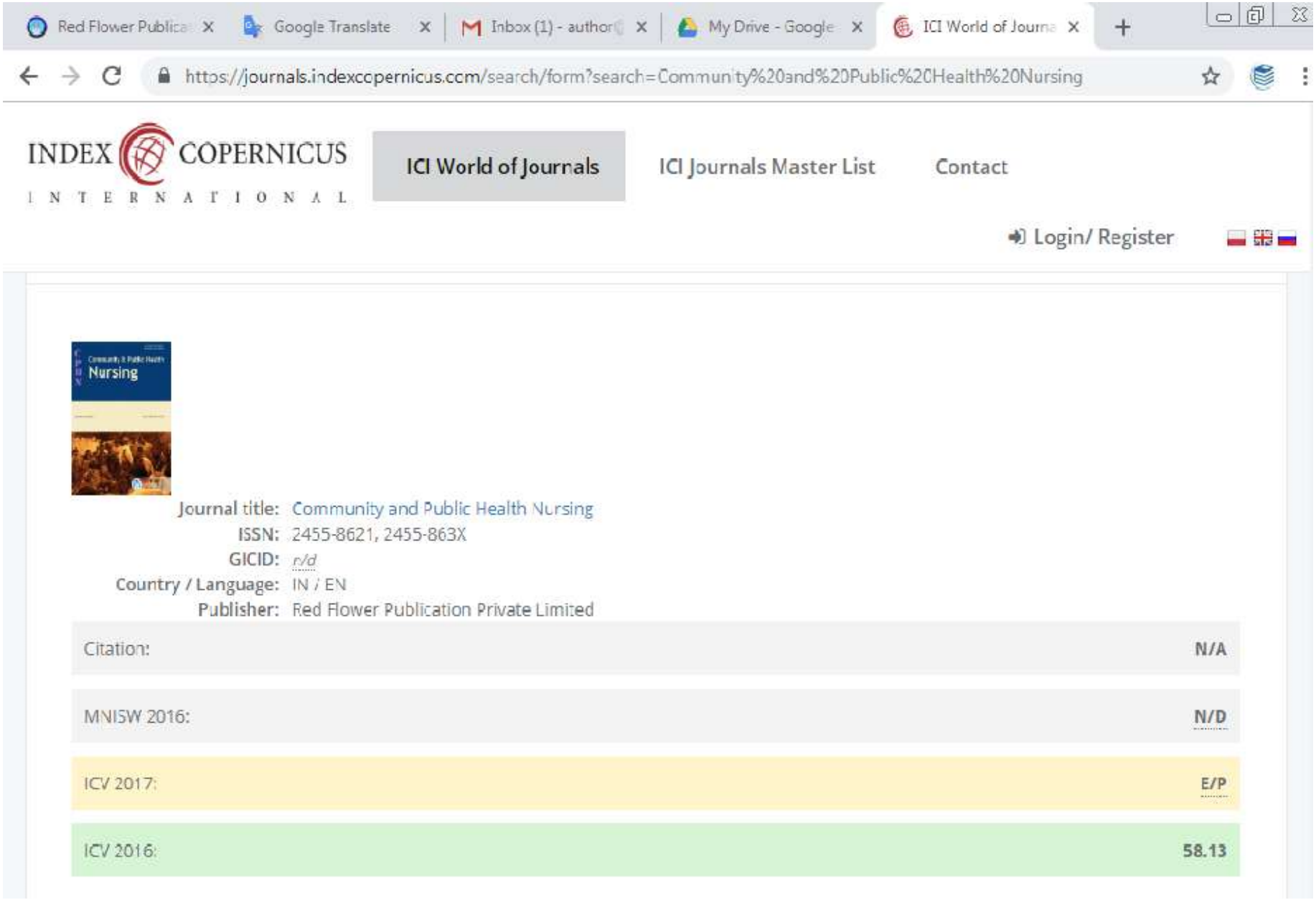
***Wire transfer/NEFT/RTGS:***
Complete Bank Account No. 604320110000467
Beneficiary Name: Red Flower Publication Pvt. Ltd.
Bank & Branch Name: Bank of India; Mayur Vihar
MICR Code: 110013045
Branch Code: 6043
IFSC Code: BKID0006043 (used for RTGS and NEFT transactions)
Swift Code: BKIDINBBDOS

**Send all Orders to:** Subscription and Marketing Manager, Red Flower Publication Pvt. Ltd., 48/41-42, DSIDC, Pocket-II, Mayur Vihar Phase-I, Delhi - 110 091(India), Phone: 91-11-45796900, 22754205, 22756995, E-mail: sales@rfppl.co.in, Website: www.rfppl.co.in

# Community and Public Health Nursing

*Volume 3 Number 3*
*September - December 2018*

## Contents


Red Flower Publica
Google Translate
Inbox (1) - author
My Drive - Google
ICI World of Journa
https://journals.indexcopernicus.com/search/form?search=Community%20and%20Public%20Health%20Nursing
INDEX COPERNICUS
INTERNATIONAL
ICI World of Journals
ICI Journals Master List
Contact
Login/ Register
Nursing
Journal title: Community and Public Health Nursing
ISSN: 2455-8621, 2455-863X
GICID: n/d
Country / Language: IN / EN
Publisher: Red Flower Publication Private Limited
Citation: N/A
MNISW 2016: N/D
ICV 2017: E/P
ICV 2016: 58.13

Community and Public Health Nursing
Vol. 3 No. 3, September - December 2018
DOI: http://dx.doi.org/10.21088/cphn.2455.8621.3318.1

# Effects of Family Restrictions on Adolescent Reproductive Health

**Indra Mani Mishra**

**Abstract**

*Introduction:* This paper presents correlation of family restriction and its effect on reproductive health. *Context:* Adolescent are the most vulnerable section of our society, specifically when it comes to reproductive health. *Aims:* To investigate the cross-sectional relationship between family restrictions and adolescent reproductive health issues. *Settings and Design:* In this study, we have queried various controlled personal and sexual questions to 250 students of age 15-18 yrs. *Methods and Material:* This study gathered questionnaire based information from students of schools of Ranchi suburb, Jharkhand, India. *Statistical analysis used:* Parameters against which sexual questionnaire was examined are as follows: ➢ Nature and syllabus of School ➢ Religion and Type of Family ➢ Time spent on TV and internet ➢ Comfortable to parents and others. First, the sample will be described in relation to the independent variables, stratified for nature and syllabus of school, religion, type of family, comfortable with parents and time spent on TV and internet. Additionally, will be computed using crude logistic regression models for the associations of interest, as well as logistic regression models adjusted for all variables mentioned above and then adjusted for age, gender, with mental health variables analyzed separately and collectively. *Results:* ➢ Adolescents from girls only school were more sexually educated and were least likely to be indulged in any reproductive health problems. ➢ Participants who were comfortable with their parents showed lower anxiety and depression. *Conclusions:* ➢ More restriction and regulations will have adverse effect on adolescents. ➢ hildren who are comfortable with their parents are least likely to be involved in criminal activity.

**Keywords:** Adolescent; Sexual; Questionnaire; Anxiety; Depression.

## Introduction

Adolescence can be defined biologically as a physical transition manifested by the beginning of puberty and the termination of physical growth. Cognitively, it is form of changes in the ability to think conceptually and multi-dimensionally; or socially, it is a period of preparation for adult roles and responsibilities. Major pubertal and biological changes include changes to the sex organs, height, weight, and muscle mass, as well as major changes in brain structure and organization *(Arnett, 2007).*

Young people of age between 10-19 yrs are considered as adolescent. In general it is a stage in childhood where one becomes able in judging its own physical and psychological progress based on its understanding of society. According to a report by UNICEF, there are 1.2 billion adolescents worldwide (UNICEF, 2012). Likewise, in India population of adolescents are over 21% of the total population, in numbers somewhere around 243 million are between age of 10-19 yrs *(Strategy et al., 2014).*

Adolescence needs robust life skills to confront demands of stresses and conflicts of life effectively. It includes life skills, such as; self awareness, ability to understand other persons views and feelings, ability to communicate effectively, ability to maintain interpersonal relationships, ability to cope with emotions and stress, ability to think creatively

**Author's Affiliations:** Research Scolar, Department of Nursing, Faculty of Pharmacy and Paramedical sciences, Himalayan University, Arunachal Pradesh 791111, India.

**Corresponding Author: Indra Mani Mishra,** Research Scolar, Department of Nursing, Faculty of Pharmacy and Paramedical sciences, Himalayan University, Arunachal Pradesh 791111, India.

**E-mail:** mishrasmart2012@gmail.com

**Recived on** 14.10.2018, **Accepted on** 31.10.2018

and critically, ability to make decisions and to solve problems. Usually life skills are exercised in combination, and hence, cannot be measured in isolation. To keep up with these demands it is prerequisite to have healthy lifestyle and healthy environment.

Adolescent health is primary concern for any government, to achieve the wholesome adolescent health, a multidimensional approach covering all the adolescent health problems with special emphasis on mental, behavioral change is required.

## Materials and Methods

*Study population:*

This study gathered questionnaire based information from students of schools of Ranchi suburb, Jharkhand, India. All adolescents born between 2000 and 2003 and living in Ranchi were invited to participate. Since the questions were very personal and sexual in nature, strict confidentiality was maintained. No name of school and no name of students were proposed by the candidates, which was agreed as consent before participation in the survey. Questions were asked to the students in groups and individually, after school and outside school premises. Questions were asked in Hindi and English as mentioned in the questionnaire without any changes. Only those candidates were taken into this study who agreed to answer all questions in the questionnaire.

A total of 250 candidates were participated in the study among which were 150 boys 100 girls from various types of schools. These candidates were further sub-classified according to type of school, type of syllabus, religion, and type of family Figure 1. We cannot guarantee that the answers given by the candidates were entirely true and/or deliberate. Therefore, their willingness to answer the questions were taken into account and assumed as true. The general aim of the survey was to assess reproductive health, mental health, lifestyle, school performance and health-service use in adolescents, with a special emphasis on the prevalence of reproductive health problems.

*Preparation of questionnaire*

Adolescents in these suburbs are very shy to respond to questions which are sexual in nature. Specially, girl participants are very difficult to open up comparing to boys. Therefore, a female interviewer was accompanied to question female participants. An average of 10-15 min were taken for the compete questionnaire. Interviews were taken during period of May 2017 to April 2018. Participants who could not or did not answer all questions were excluded from the study. The questionnaire was based on four section (A) Personal Information *(Cleland, 2014)*, (B) Parental Information (Cleland, 2014), (C) Sexual Information *(Cleland, 2014)* and (D) Behavioral Information *(Angold and Costerllo, 1987; Craske et al., 2013).* A sample of the questionnaire is attached at the end of the materials and methods section. Since participant choose to not disclose their identity, no written consents were required for the study.

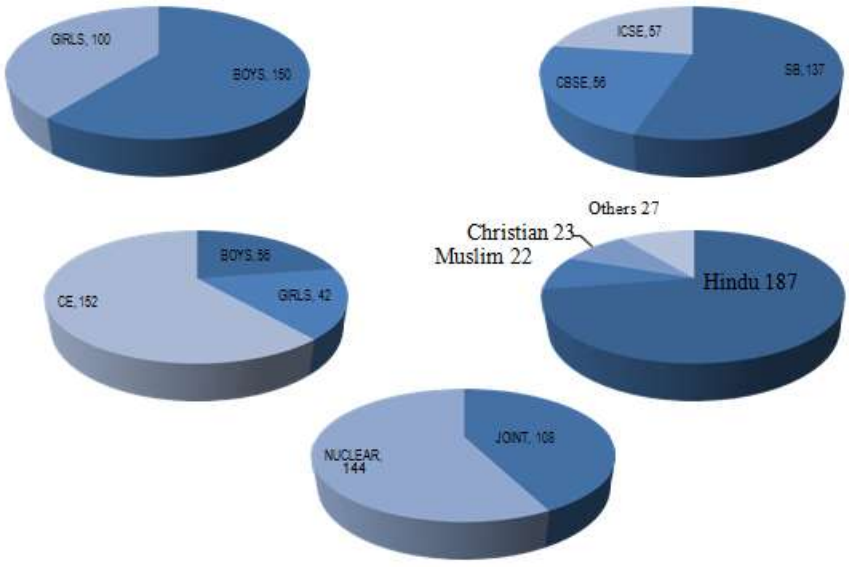



**Fig. 1:** Counts of participants based on Gender, Type of Syllabus, Type of School, Religion and Type of Family they come from

*Information*

Information about age and gender will be obtained by all participants. Furthermore, the participants will indicate the perceived family and religious information as:

- Parents relation (Separated, together, widow)
- Comfortable to discuss their problems with parents
- Comfortable to discuss their problems with others
- Religious identity

*Identification of reproductive problems and illicit sexual involvement.*

Self-reported debut, reproductive health issues and illegal sexual involvement will be included as main independent variables. We intend to include a binary measure of reproductive health issues:

- Have you noticed any bodily changes in yourself that you do not understand? (Yes/ No)
- Do you know anything about self sex? (Yes/ No)
- How do you feel when you see sexual content on television and/or online resource? (disgusted/funny/aroused)
- Do you have anyone in your family and/or relatives to whom you can talk about your sexual problems? (Yes/No),
- Illegal sexual involvement:
- Have you tried or intend to push or forced your friend/s to have sex? (Yes/No)
- What do you have to say about increase sexual violence in adolescents? (One liner)
- Both willing or persuasion which would you prefer? (Choose one).

*Mental health problems*

Symptoms of depression and anxiety will be included as the main dependent variables.

*Short mood and feelings questionnaire*

In the original version of the MFQ, the respondents are asked to rate 33 items on a 3-point scale, indicating how much they have felt or acted that way during the past 2 weeks *(Angold et al., 1987).* In the present study we included the official Norwegian version of the short version (SMFQ) *(Angold et al., 1995),* with 13 items focusing on affective and cognitive symptoms. The wordings of the response-categories in the Norwegian translation equals the original categories of Not true, Sometimes true, and True. Scores more than 4 and 7 will considered as significant. It should be noted that term depression as used in the current study does not imply existence of a clinical diagnosis, such as major depressive disorder (MDD).

**Results**

Our result shows that adolescents from girls only school were more sexually educated and were least likely to be indulged in any reproductive health problems. We also noted that that from minority community comparatively was more anxious (24-36% boys were recorded with > 7 score) and depressed (100% girls were recorded with >10 score) than the majority community. Our result clearly showed that more hours of TV viewing pose serious anxiety and depression threats in adolescents (42% boys and 62% girls were scored >4 on anxiety questionnaire). Similarly, internet also poses similar threat but its influence on youth is lower than television. Participants who were comfortable with their parents showed lower anxiety and depression (23% boys were scored >7; 8% boys were scored >10). We conclude from this study that religion have a direct effect on sexual performances in a society. If we consider religion as 'a way of living', then it is evident from our study that more restriction and regulations will have adverse effect on adolescents. Children who are comfortable with their parents are least likely to be involved in criminal activity.

**Discussion**

1. The famous 'Nirbhaya' case, and brutality committed by one of the convict who was juvenile is well known (2012 Delhi gang rape, Wikipedia). Numbers of teenage girl getting pregnant due to unprotected sex are growing with amazing pace *(WHO, 2004).*
2. In India girls are not open to discuss their sexual problems; there are evidences that they are also embarrassed to discuss pubertal changes and complications at home. Even information about physical maturation is often not discussed within the family, on the assumption that the silence will convey the taboo nature of this topic, protect a child's

innocence, and discourage inappropriate behavior. Studies in different parts of the country have highlighted poor knowledge of adolescent girls even in topics such as menstruation, contraception, pregnancy -a crucial aspect if India is to achieve the net reproduction rate of 1 by 2016 AD. *(Nair et al., 2007; Hunshal et al., 2010).*

3. In the 1990s, the debate continues about which type of schooling gives better school results, and there were evidence coming suggesting that single-sex schooling could be helpful in getting improved school grades. Thus, the debate continues as (Yates, 2004) states, "Over the past three decades, the relative merits of single sex and coeducation for the educational and socio - emotional development of school aged students have been debated extensively". Previous studies suggest that co-ed schools perform better for both boys and girls, it therefore can be concluded that co-ed schools lowers anxiety and depression level *(Hurst & Johansen, 2006; Sax, 2002; General Accounting Office, 1996).*
4. Our study clearly shows distinction between responses of boys and girls from co-ed schools to important sexual questions. For example more girls of co-ed schools said that they got attracted to opposite sex than boys of co-ed schools. Although, percentage of girl were less than boys who said 'they got attracted to opposite sex' but it was evident that among all respondent most answered 'yes' to the question. This implies that boys from co-ed schools were not sexually influenced by opposite sex classmates. On the other hand girls from co-ed schools were more sexually influenced. It was quite interesting that boys from boys schools were more sexually attracted to opposite sex than any other categories. It reminds of famous study conducted by Dale *(Dale 1969, Dale 1971, Dale 1974)*, which stressed the advantages of boys being educated with girls. Dale argued that boys did better academically in mixed schools, because girls' greater sincerity was communicated to them, and boys were spurred on by competition with the girls.
5. our study reveals that girls from state board schools were largely unaware of the pubertal physical changes. The sexual and reproductive health needs of adolescents *(Mamulwar et al., 2015; Gott et al., 2004; Haslegrave and Olatunbosun, 2003; Dunn and Abulu 2010)* in India are currently overlooked or are not understood by the Indian healthcare system.
6. Expressing sexual problems in the family is very important for adolescent as the instruction and caution explained by the family is trusted. Our study noted similar behavior within both type of families. For questions such as 'do you have anyone in your family to whom you can talk about your sexual problems?' Interestingly, among girls who come from nuclear family and joint family responded similarly. Among boys however, nuclear family tend to be more open to the adolescent sexual queries. Our study reports that girl participants from both families were able to discuss their sexual problem than boys. Reason being, that mothers are more accessible to girls in case of pubertal changes and therefore, allowed space for sexual queries *(Jain and Anand, 2016).*
7. A growing body of research today indicates that religions play an important role the economic, demographic, marital and sexual behavior of individuals and families, ranging from patterns of employment to fertility and marital stability. *(Waite, 2000)*
8. Many studies show that females, compared to males, exhibit greater social sensitivity (Christov-Moore et al., 2014) and stronger verbal ability *(Stoe and Geary, 2013)*, while males outperform females on mental rotation *(Voyer et al.,* 1995) and the analysis or construction of systems *(Baron-Cohen et al., 2003).* We believe that girls were not able to detail their problems with their parents and therefore, showed greater anxiety.

**Conclusion**

In conclusion, our study exclusively confirms following points:

- We confirm that adolescents from girls only school were more sexually educated and were least likely to be indulged in any reproductive health problems. Whereas, boys from co-ed schools were least likely to be indulged in any reproductive health problems.
- We confirm that level of depression was not serious in any boards of education, however, girls of CBSE board schools indicated higher numbers of moderately anxious participant. Similarly, participants from both boys and

girls ICSE mode of education posed highest moderate anxiety.

- Lowest anxiety was recorded in state board schools. On the other hand, fair admittance to direct sexual question by CBSE students indicate better sexual understanding and therefore, least likely to involve in any sexual criminality.
- We confirm that girls who come from nuclear family and joint family responded similarly.
- Among boys who belong to nuclear family tend to be more open to the adolescent sexual queries.
- Our study reports that girl participants from both families were able to discuss their sexual problems with their respective families.
- We assumed that minority community was more anxious and depressed than the majority community. Muslim boys were more anxious than any other community participated in this study.
- We believe that more anxiety and depression in Muslim boys and girls could be due to combination of factors such as; socioeconomic status and current political aggression.
- Our results showed that most of the participants from all religions were moderately anxious, however, anxiety and depression in Muslim participants were slightly higher.
- Girl participants from Muslim community were found extremely depressed in most cases. Serious anxiety was mostly found in 'other religions' category, which was comprised of Sikh and Sarna communities.
- Our result clearly showed that more hours of TV viewing pose serious anxiety and depression threats in adolescents. Similarly, internet also poses similar threat but its influence on youth is lower than television.

**Acknowledgement**

***My grateful heart is filled with love For I am blessed by god above, My needs are met before I ask And I find strength for every task***

Gratitude can never be expressed in words but this is only the deep perception, which makes the words to flow from ones inner heart. First *of* all, I thank the Lord Almighty for his abundant blessings showered on me, which helped me to complete the study successfully.

I express my sincere feelings of gratitude to *Dr. Punam Pandey, Assistant Professor* College of Nursing, IMS, BHU, Varanasi for her valuable support and providing facilities for the study. I am indebted to her contribution and guidance for the completion of my study.

I acknowledge the positive response of *the participants* without whom this project would have been next to nothing.

Thanking those who are very close to heart is something which is very difficult. Though it will look very formal, a word of thanks to *my Wife Smt. Kajal Kiran Mishra, my son Mr. Utsav Kumar and my Daughter Ms. Aadya Mishra* who are the reason behind my success.

I have no words to pen the love, affection and inspiration to my father, *Mr. C. B. Mishra and mother Smt. Indu Mishra.* without their support I would not have achieved this in my life.

I owe a great deal to *my friends and my classmates*, who were a great help in making life a bit easier when one is strapped for time.

As a final note, my sincere thanks and gratitude to all those who directly or indirectly helped in the successful completion of this research.

**Key Messages**

The adolescents are exposed to an expanding array of media that carry messages that shape their judgments and behavior.

Our study affirms that adolescents who are open to their parents are least likely to be sexually misinformed or frustrated.

*Conflict of Interest:* None

**References**

1. Anderson DR, Huston AC, Schmitt K, linebarger DL, Wright JC. Early childhood viewing and adolescent behaviour. The recontact study. Monographs of the society for Research in Child Development, 2001;66(1):264.
2. Andre T, Frevert RL, Schuchmann D. From whom have college students learned what about sex? Youth and Society, 1989;20:241-68.
3. Andrews B, Wilding JM. The relation of depression and anxiety to life-stress and achievement in students. Br J Psychol, 2004;95:509-521.
4. Angell M. Privilege and health What is the connection?. The New England Journal of Medicine, 1993;329(2):126-27.

5. Banerjee I, Clayton P. The genetic basis for the timing of human puberty. J Neuroendocrinol, 2007;19:831-38.
6. Barber BK. Cultural, family, and personal contexts of parent-adolescent conflict. J Marriage Fam, 1994;56:375-86.
7. Bardone AM, Moffitt TE, Caspi A, Dickson N, Stanton WR et al. Adult physical health outcomes of adolescent girls with conduct disorder, depression and anxiety. J Am Acad Child Adolesc Psychiatry, 1998;37:594-601.
8. Barnea-Goraly N, Menon V, Eckert M, Tamm L, Bammer R et al. White matter development during childhood and adolescence: a cross-sectional diffusion tensor imaging study. Cereb Cortex, 2005;15:1848-54.
9. Barnes HL, Olson DH. Parent-adolescent communication the circumplex model. Child Dev, 1985;56:438-47.
10. Cernkovich S, Giordano P. Family relationships and delinquency. Criminology, 1987;25(2):295-319.
11. Chaffin M, Letourneau E, Silovsky JF. Adults, adolescents, and children who sexually abuse children: A developmental perspective. In The APSAC Handbook on Child Maltreatment, 2nd ed., edited by J.E.B. Myers, L. Berliner, J. Briere, C.T. Hendrix, C. Jenny, and T.A. Reid. Thousand Oaks, CA: Sage Publications, 2002;205-232.
12. Chaplin TM, Gillham JB, Seligman MEP. Gender, anxiety, and depressive symptoms: A longitudinal study of early adolescents. J Early Adolesc, 2009;29:307-27.
13. Dunn ME, Abulu J. Psychiatrists' role in teaching human sexuality to other medical specialties. Acad Psychiatry, 2010;34:381-85.
14. Dwyer RG, Thornhill JT. Recommendations for teaching sexual health: How to ask and what to do with the answers. Acad Psychiatry, 2010;34:339-41.
15. Elbogen EB, Johnson SC. The Intricate Link Between Violence and Mental Disorder. Arch Gen Psychiatry, 2009;66:152-61.
16. Elkin F, Handel G. The Child And Socity: The Process Of Socialization New York: McGraw Hill. 1988.
17. Fischhoff B, Parker AM, De Bruin WB, Downs J, Palmgren C et al. Teen expectations for significant life events. Public Opin Q, 2000;64:189-205.
18. Fishbein M, Ajzen I. Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, MA: Addison-Wesley. 1975.
19. Fisher DA, Hill DL, Grube JW, Gruber EL. Gay, lesbian, and bisexual content on television: a quantitative analysis across two seasons. J Homosex, 2007;52(3-4):167-88.
20. Fletcher JM. Adolescent Depression and Adult Labor Market Outcomes. Yale University Working Paper. 2009.
21. Heaton TB. Demographics of the contemporary Mormon family. Dialogue: J Mormon Thought, 1992;25(3):283-99.
22. Heponiemi T, Elovainio M, Kivimaki M, Pulkki L, Puttonen S et al. The longitudinal effects of social support and hostility on depressive tendencies. Soc Sci Med, 2006;63(5):1374-82.
23. Heponiemi T, Elovainio M, Kivimaki M, Pulkki L, Puttonen S, et al. The longitudinal effects of social support and hostility on depressive tendencies. Soc Sci Med, 2006;63(5):1374-82.
24. NCRB. Crime in India, National Crime Record Bureau Ministry of Home Affairs. NDTV News, 2012. https://www.ndtv.com/cities/girl-beheaded-outside-st-xaviers-college-in-ranchi-454094. Retrieved on 11 June 2018.
25. Niemz K, Griffiths M, Banyard P. Prevalence of pathological Internet use among university students and correlations with self-esteem, the general health questionnaire (GHQ), and disinhibition. CyberPsychol Behav, 2006;11:480-83.
26. Nimkoff MF. The family in India. Sociological Bulletin, 1959;8(2):32-58.
27. Robinson TN, Chen HL, Killen JD. Television and music video exposure and risk of adolescent alcohol use. Pediatr, 1998;102(5):54.
28. Roccas S, Sagiv L, Schwartz SH, Knafo A. Th e Big Five personality factors and personal values . Pers Soc Psychol Bull, 2002;28:789-801.
29. Van den Bulck J. Is television bad for your health? behavior and body image of the adolescent couch potato. J Youth Adolesc, 2000;29(3):273-88.
30. Wright JC, Huston AC, Truglio R, Fitch M, Smith E et al. Occupational portrayals on television: children's role schemata, career aspirations, and perceptions of reality. Child Dev, 1995;66(6):1706-18.
31. Wright JC, Huston AC, Truglio R, Fitch M, Smith E et al. Occupational portrayals on television: children's role schemata, career aspirations, and perceptions of reality. Child Dev, 1995;66(6):1706-18.
32. Wyer RS, Collins JE. A theory of humor elicitation. Psychol Rev, 1992;99:663-88.
33. Yates SM. Aspirations, progress and perceptions of boys from a single-sex school following the changeover to co-education. J Int Educ, 2004;4:167-76.
34. Young KS, de Abreu CN (eds). Internet addiction: A handbook and guide to evaluation and treatment, Hoboken, NJ: John Wiley & Sons, Inc. 2011.
35. Yu L, Shek D. Internet addiction in Hong Kong adolescents: a three-year longitudinal study. J Pediatr Adolesc Gynecol, 2013;26(3):10-17.
36. Zavattini C. Some Ideas on the Cinema,' Sight and Sound 1953 Oct-Dec;23(2):64-9. Edited from a recorded interview published in La revista del cinema italiano 2 Translated by Pier Luigi Lanza.

# Community and Public Health Nursing

**Library Recommendation Form**

If you would like to recommend this journal to your library, simply complete the form below and return it to us. Please type or print the information clearly. We will forward a sample copy to your library, along with this recommendation card.

**Please send a sample copy to:**

Name of Librarian

Name of Library

Address of Library

**Recommended by:**

Your Name/ Title

Department

Address

**Dear Librarian,**

I would like to recommend that your library subscribe to the Community and Public Health Nursing. I believe the major future uses of the journal for your library would provide:

1. useful information for members of my specialty.
2. an excellent research aid.
3. an invaluable student resource.

**I have a personal subscription and understand and appreciate the value an institutional subscription would mean to our staff.**

Should the journal you're reading right now be a part of your University or institution's library? To have a free sample sent to your librarian, simply fill out and mail this today!

Stock Manager
Red Flower Publication Pvt. Ltd.
48/41-42, DSIDC, Pocket-II
Mayur Vihar Phase-I
Delhi - 110 091(India)
Phone: Phone: 91-11-45796900, 22754205, 22756995, Cell: +91-9821671871
E-mail: sales@rfppl.co.in

Community and Public Health Nursing
Vol. 3 No. 3, September - December 2018
DOI: http://dx.doi.org/10.21088/cphn.2455.8621.3318.2

# Revised National Immunization Programme among Mothers of Under Five Children in Selected Rural Areas

**Radha S. Mandla[1], Amrapali M. Gajbhiye[2]**

**Abstract**

The aim of the study is assess the knowledge regarding revised national immunization programme among mothers of under five children in selected rural areas. The objective of the study is to assess the knowledge regarding revised national immunization programme among mothers of under-five children in selected rural areas of the city and to find out the association between knowledge score with selected demo graphic variables. The conceptual framework of the study was developed on the basis of Pender's health promotion model. Methodology non experimental descriptive approach was used. The study was carried out at selected rural areas of Nagpur. The sample comprised of 100 mothers of under five children in selected rural areas of Nagpur selected by convenient sampling. Pilot study was conducted on 10 samples and the tools were found to be reliable. Data collection was done from 4/12/2017 to 6/12/2017. Data was collected by administering a structure knowledge questionnaire. The result of this study showed that majority of frequency of mothers of under-five children found in that 6% mothers of under five children had poor level of knowledge score, 50% had average, 37% had good and only 7% had very good level of knowledge score. The association of knowledge scores with religion of mothers of under-five children. The finding of this supports the need of the health education for mothers of under five children in selected rural areas of Nagpur.

**Keywords:** Assess; Knowledge; Mothers of Under Five Children; Revised National Immunization Programme.

## Introduction

Childhood is very precious period in human life cycle. It requires more care and protection from the diseases. The childhood period is also high risk for communicable diseases. In India 72 babies are dying every 1000 babies born in a year. Disease of early childhood preventable by vaccination remains a serious problem in developing countries [1].

Immunization is a proven tool for controlling and eliminating life- threatening infectious diseases and is estimated to avert between 2 and 3 million deaths each year. It is one of the most cost-effective health investments, with proven strategies that make it accessible to even the most hard-to-reach and vulnerable populations. It has clearly defined target groups; it can be delivered effectively through outreach activities; and vaccination does not require any major lifestyle change. Immunization is vital; it protects nearly 3/4th of children against major childhood illness. There are several diseases, which can be easily prevented by timely vaccination as a part of routine immunization. Every child has the right to benefit from the appropriate traditional and new life saving vaccinations [2].

It has been that 5 million children were dying each year and another 5 million were disabled by infectious diseases. The growth and development of children is a long term contribution of country as a whole. The key to attain the goal of health for all primary health care emphasizes on the preventive principles one of the most cost effective health intervention is vaccine for all infectious disease [3].

**Author's Affiliations:** [1]MSc. Nursing Student [2]Associate Professor, V.S.P.M College of Nursing And Research Centre, Nagpur, Maharashtra 440016, India.

**Corresponding Author: Ms. Amrapali Gajbhiye,** Associate Professor, V.S.P.M College of Nursing And Research Centre, Nagpur, Maharashtra 440016, India.

**E-mail:** radhamandla1403@gmail.com

**Recived on** 02.11.2018, **Accepted on** 17.11.2018

Addition of Newer vaccines will provide wide range of immunity against various infectious diseases, hence its awareness is needed was 30 mothers, sampling technique was convenient sampling methods. Result of the study shows that Knowledge Score categorized in 3 categories (good, average and poor). Good knowledge score is 10%. Average knowledge score is 23.34%. Poor knowledge score is 66.66%. Conclusions: Most of the mothers of under-five having poor knowledge score regarding Immunization [4].

Each year there is more than 150 million of childhood pneumonia and nearly 2 million children under five lose their lives to an acute bout of pneumonia. About 200,000 child death are attributed to pneumonia each year occur in neonatal period. In India, pneumonia is responsible for about 400,000 deaths in children under five and substantial proportions of these pneumonia deaths are pneumococcal [5].

Prevention is ultimately the most effective defense system in controlling infectious diseases and Immunization has found out to be the most effective intervention in prevention. Also addition of newer vaccines means protection against present infectious disease which are lethal, thus covering majority of infectious disease through Immunization by taking newer vaccines. So the knowledge regarding immunization and also newer vaccines in prevention of infectious disease among mothers of under five children is important. Keeping this point of view this study is conducted to assess the knowledge regarding revised national immunization among mothers with under five children.

*Problem Statement*

"Revised national immunization programme among mothers of under-five children in selected rural areas".

*Objectives*

1. To assess the knowledge regarding revised national immunization programme among mothers of under-five children in selected rural areas of the city.

2. To find out the association between knowledge score with selected demographic variables.

*Operational Definition*

• *Assess:* In this study, it refers to evaluate (or) estimate the knowledge regarding revised national immunization programme.

• *Knowledge:* In this study, it refers to the level of understanding of the mother of under-five children about the importance of revised national immunization programme.

• *Revised National Immunization programme:* In this study, the revised national Immunization programme contains previous and some newer vaccines like pentavalent vaccine, Hep. B vaccine, Japanese encephalitis vaccine, Hib vaccine, and RV vaccine, which can be taken to provide immunity against various infectious diseases.

• *Mother of Under Five Children:* In this study, it refers to those mothers who have under-five (0-5years ) children.

• *Definition of immunization:* Immunization is the process whereby a person is made immune or resistant to an infectious disease, typically by the administration of a vaccine. Vaccines stimulate the body's own immune system to protect the person against subsequent infection or disease.

*Assumptions*

1. Mothers of under -five children may have inadequate know ledge regard in g revised national immunization programme.

2. Mother's knowledge may vary according to their demographic variable regarding revised national immunization programme.

**Conceptual framework**

Conceptual framework used for the present study is "Pender'shealth promotion model'' (pender's 1996). This model focuses on following three areas:-

• Demographic characteristics of mothers of under-five children.

• Assessment ofrevised national immunization programme

• The assessment outcomes.

*Review of Literature*

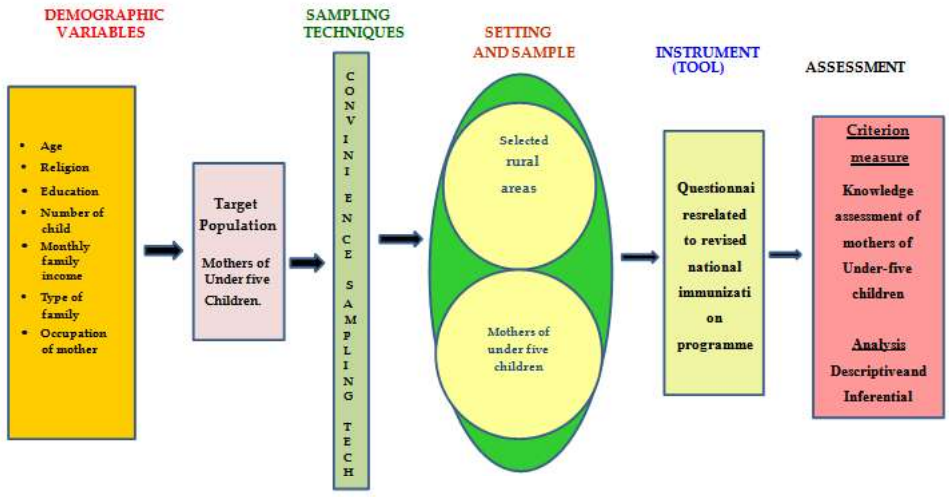
In the present study the literature reviewed has been organized into the following categories:-

I. Review of literature related to Immunization.

II. Review of literature related to incidence of vaccine preventable diseases

III. Review of literature related to knowledge regarding immunization among mother of under-five child.

IV. Review of literature related to newer vaccines.




## Methodology

*Research approach*

In the present study, the research approach is non-experimental descriptive approach.

*Research design*

In this study A 'descriptive research design' is used to identify, describe and explore the existing phenomenon and its related factors

*Variables*

*Research variable:* Research variables in the study is knowledge regarding revised national immunization programme.

*Demographic variables:* The demographic variable in the study is age, religion, number of child, monthly family income, type of family, occupation of mother, education.

*Setting of the study:* The present study was conducted in selected rural areas of city.

*Population:* The population in this study was mothers of under-five children in selected rural areas of city.

*Sample:* In this study the sample is the hundred (100) mothers of under five children.

*Sampling technique:* In the present study a sample selection was done by non-probability convenient sampling technique.

*Sampling Criteria:*

*Inclusion Criteria;*

Mothers who are;

1. Having under five children (0-5years)
2. Who can understand, read and write Hindi and Marathi.
3. Willing to participate in the study.

*Exclusion Criteria*

Mothers who are;

1. Health care professionals.
2. Not available at the time of date collection.

**Table 1:** Schematic representation of the study design

| Sample | Tool | Sample Technique | Assessment |
|---|---|---|---|
| Mothers of under five children | Self-structured questionnaire | Non-probability convenient sampling | Knowledge regarding revised immunization programme. |

*The Tool/ Instrument*

The tool used in current study is structure knowledge questionnaire.

*Description of the tool:* In this study the tool consists of structure knowledge questionnaire which contain two sections.

*Section A*: It consist structured questionnaire to collect the demographic data. In that Age, Religion, Type of family, Number of child, Education of mother, Family income per month, Occupation of mother.

*Section B*: it consists of questionnaire based on revised national immunization programme. It was further subdivided into introduction regarding Immunization. Questions related to hepatitis B vaccine, Questions related to Hib vaccine, Questions related to

**Table 1:** Showing percentage wise distribution of mothers of under-five children according to their demographic variables

| Demographic Variables | Frequency(n) | Percentage (%) |
|---|---|---|
| *Age(yrs.)* | | |
| 20-24 yrs. | 27 | 27 |
| 25-29 yrs. | 53 | 53 |
| 30-34 yrs. | 17 | 17 |
| 35 yrs. &; above | 3 | 3 |
| *Religion* | | |
| Hindu | 90 | 90 |
| Christian | 0 | 0 |
| Muslim | 0 | 0 |
| Buddhist | 10 | 10 |
| Others | 0 | 0 |
| *Educational Status* | | |
| Primary | 9 | 9 |
| Secondary | 50 | 50 |
| Higher Secondary | 28 | 28 |
| Diploma | 3 | 3 |
| Graduation & above | 10 | 10 |
| *No. of children* | | |
| One | 36 | 36 |
| Two | 56 | 56 |
| Three | 5 | 5 |
| Four and above | 3 | 3 |
| *Monthly family income(Rs)* | | |
| 5000-10,000 Rs | 66 | 66 |
| 10,001-15000 Rs | 23 | 23 |
| 15,001-20,000 Rs | 7 | 7 |
| 20,001 & above | 4 | 4 |
| *Type of family* | | |
| Nuclear | 34 | 34 |
| Joint | 65 | 65 |
| Extended | 1 | 1 |
| *Occupational Status* | | |
| Govt. Service | 0 | 0 |
| Private Service | 1 | 1 |
| Homemaker | 65 | 65 |
| Self Employed | 1 | 1 |
| Labour | 33 | 33 |

rotavirus vaccine, Questions related to Vitamin A and Questions related to Pentavalent vaccine.

*Reliability of the tTool*

In this study, Karl Pearson correlation coefficient formula was used for the reliability. The questionnaire will be found reliable if the correlation coefficient correlation was more than 0.8 that is 0.9.

*Data Collection Method*

The data was collected from 15/1/2018 to 13/2/2018 in selected rural areas of the city.

## Data Analysis

*Organization of Findings*

The analysis and interpretation of the observations are given in the following section:

1. Section A: Distribution of mothers of under five children with regards to demographic variables.

2. Section B: Assessment of knowledge of mothers of under five children regarding revised national immunization programme.

3. Section C: Association of knowledge score of mothers of under five children with selected demographic variables.

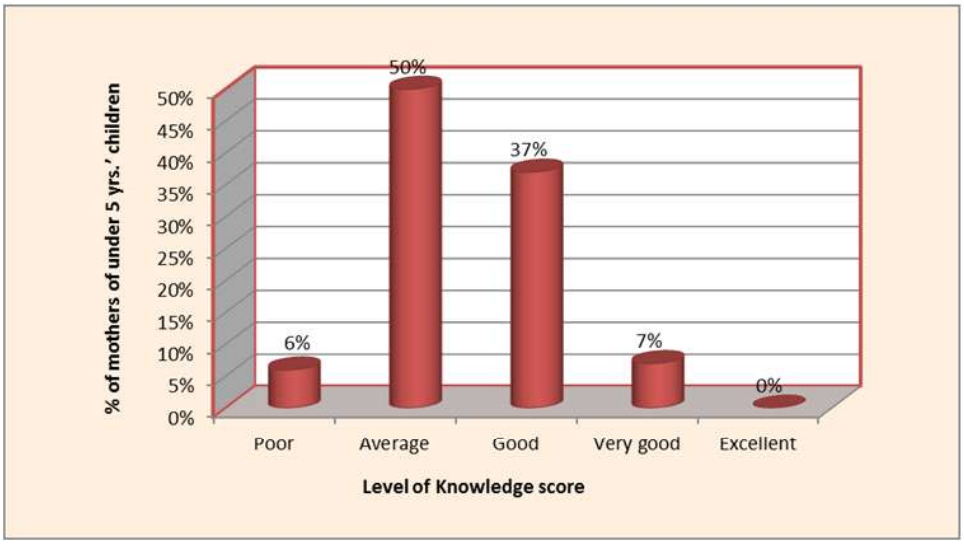



**Fig. 1:** Cylindrical bar diagram showing distribution of mothers of under five children according to their knowledge related to revised national immunization programme

**Table 2:** Showing distribution of mothers of under-five children with regards to knowledge regarding revised national immunization among mothers of under-five children in selected rural areas.

| Level of knowledge score | Percentage Score | Knowledge Score | |
|---|---|---|---|
| | | Frequency | Percentage |
| Poor | 1-6(0-20%) | 6 | 6 |
| Average | 7-12(21-40% | 50 | 50 |
| Good | 13-18(41-60%) | 37 | 37 |
| Very good | 19-24(61-80%) | 7 | 7 |
| Excellent | 25-30(>80) | 00 | 00 |

## Discussion

A Cross sectional study was done among mothers of under five children attending the OPD of paediatrics in a tertiary care hospital in Kollam, Kerala from 1st to 30th May, 2014. The sample size was 210 and simple random sampling was used. 93.8% of mothers knew that vaccines are beneficial for their child. 58% were aware about the side effects of few vaccines. 50% of mothers believed that as polio is eradicated from India, there is no need to give polio vaccine. 35% of mothers acquired knowledge regarding immunization through health workers. All of them had knowledge about polio vaccine but only half of them knew about rotavirus vaccine. 60% mothers believed that multiple vaccines are beneficial although 26% hold their view that it has no benefit at all. 39.5% of mothers" had adequate knowledge about immunization. It was positively associated with education, working class and high socio-economic status of mothers. Conclusion: There are several loopholes in the mother's knowledge regarding immunization. Many of them had no knowledge about optional vaccines. There is a need to improve knowledge regarding immunization among general population. Adequate information about completing the schedule and correct knowledge about optional vaccines should be given to mothers [6].

The analysis included 108,057 children; the estimated proportions of fully, under-, and non-vaccinated children were 57%, 31%, and 12%, respectively. After adjusting for state of residence, age, gender, household wealth, and maternal education, additional significant predictors of children's vaccination status were religion, caste, place of delivery, number of antenatal care visits, and maternal tetanus vaccination, all of which demonstrated large effect sizes.

Analysis reveals that there is association between knowledge score with religion and there is no association between age in year, educational status, Number of child, Monthly family income, and type of family and occupation of mothers.

## Conclusion

After the detailed analysis, this study leads to the following conclusion:

In this study, among the subject majority of the finding 53(53%) were belonging to the age group 25-29 years, followed by 27 (27%) were in the age group of 20-24 years, and 17 (17%) were in the age group of 30-34 years and minority of the subjects found 3 (3%) in the age group 35 years and above. Majority of the subject according to their religion shows that 90% of the mothers of under-five children were Hindus and only 10% were belonging to Buddhist. Majority of the finding 50 (50%) were belonging to the secondary education followed by 28 (28%) were in the higher education and minority of the subject 9 (9%) were in the primary education and 3% were diploma and 10% were graduates and above.

Majority of the finding 56 (56%) of them had two children, 36% of them had only one child, 5% had three children and only 3% had four and more children. Majority of the finding 66 (66%) of them had income 5001-10000 Rs, 23 (23%) had between 10001-15000 Rs, 7 (7%) had between 15001-20000Rs and minority of the finding 4 (4%) of them had income more than 20,001 and above respectively. Most of the 34 (34%) of them were belonging to nuclear families, followed by 65 (65%) were in joint and minority of the 1 (1%) were belonging to extended family. According to their occupational status shows that 1% of them were private worker and 1% was self- employed, 65% were homemakers and 33% were self-labourer.

Analysis reveals that there is association between knowledge score with religion and there is no association between age in year, educational status, Number of child, Monthly family income, and type of family and occupation of mothers.

### *Nursing Implication*

The findings of this study have implications for nursing practice, nursing education, nursing administration, & nursing research.

### *Nursing Practice*

❖ Health education program can be used to reinforce learning needs of the mothers on Immunization. Students can be motivated to teach the mothers about the control and prevention of vaccine preventive disease with the help of

immunization in the wards and community settings.

❖ Healthcare services are an essential component of community healthcare nursing, the role of personnel is to conduct the project & participate in revised national immunization programmes in relation to prevention of child mortality & morbidity.

❖ It will help the nurses to keep up date knowledge regarding revised national immunization programme.

❖ When the professional liability is recognized, it defines the parameter of the profession & the standards of professional conduct. Nurses should therefore enhance their professional knowledge.

❖ This study will help the nurses for conducting healthcare services to health care professionals.

*Nursing education*

❖ Nurse who are upto date with the knowledge about the revised national immunization programme are the better person to impact the knowledge to the nursing student about the revised national immunization programme which will ultimate prevent the child mortality & morbidity & thus will promote healthy life span of the child.

❖ Nowaday, much emphasis is given on comprehensive care in the nursing curriculum. So this study can be used by nursing teacher as an informative illustration for nursing students.

❖ For the student nurses more stress can be given to the importance of early recognition, prompt treatment.

❖ Students must be given clinical field assignment, in which they must be given opportunity to assess the immunization status of under-five children & plan for imparting knowledge & participating in various project & national programme in relation under-five children.

❖ Teacher training programme must also include the topic of revised national immunization programme of under-five children.

*Nursing administration*

❖ Nurse as an administrator can plan and organize educational program. Nurse administrator can organize education camp & health teaching program for the ANC, PNC and mother of under-five children to abreast their knowledge on Immunization

❖ Findings of the study can be used by the Nursing Administration in creating policies & plan for providing education to the staff nurses & mothers.

❖ It would help the nursing administrators to be planned & organised in giving continuing education to the nurses & to others for applying & updating the knowledge of immunization status of under-five children.

❖ The result of the study contributes to the body of knowledge of nursing.

❖ In–service education must be conducted for the nurses to create awareness regarding revised immunization programme status of under-five children.

*Nursing research*

❖ Based on the study results the mothers can be educated based on their learning needs. Present research knowledge helps to prevent the vaccine prevented disease and improve general health status of the children thereby reduces mortality and morbidity among the under five children

❖ The findings of the study have added to the existing body of the knowledge in relation to the revised national immunization programme status of the under- five children which will enhance the knowledge & would help to assess the revised immunization status.

❖ Other researcher may utilize the suggestions, & recommendations for conducting further study.

❖ The tool & technique used has added to the body of knowledge & can be used for further references.

*Limitations*

• The study was conducted only on mothers of under-five children.

• The sample size was small to generalize the findings of the study.

• Only selected self-structure questionnaires assessment criteria were selected for the study.

• The study was limited to assess the revised national immunization status of the mothers of under-five children.

*Recommendation*

1. A similar study can be replicated on a larger population for a generalization of findings.

2. Study can be conducted for the auxiliary midwifery nurse as they are responsible for the teaching the mothers of under-five children.
3. Mass media and health education should be arranged to educate mothers of under-five regarding revised national immunization programme.
4. A video assisted study can be carried out to assess effectiveness of knowledge of mothers of under-five children regarding revised national immunization programme.
5. A similar study can be conducted by using a SIM (self-instructional module) or a pamphlet or booklet.
6. A similar study can be conducted by using a structured teaching programme.

**Reference**

1. Shariff, A., Singh, G. Determinants of maternal health care utilization in India: Evidence from a recent household survey. Working Paper Series No. 85. National Council of Applied Economic Research. New Delhi, India. 2002.
2. www.who.int/topics/immunization/en/
3. Mrs. S. Selvakumari. Knowledge of Optional Vaccines Among Mothers of 'Under Five Children. Journal of Management and Science, 2011 Sep;1(1):30-35. http://jms.nonolympictimes.org/Articles/Article5.pdf
4. Vasantha kalyani C. International Journal Of Recent Scientific Research. 2016 May;7(5).
5. Sharma Suresh K. Nursing Research & Statistics. Haryana: Elsevier Publication; 2011.pp.81-82, 99-102,31,32,216,177-178.
6. Ms. Mereena et al. A Study on Knowledge and Attitude Regarding Vaccines among Mothers of Under Five Children attending Pediatric OPD in a Selected Hospital at Mangalore IOSR Journal of Nursing and Health Science (IOSR-JNHS) 2014 Sep.-Oct;3(5 Ver. III):39-46. www.iosrjournals.org.

Community and Public Health Nursing
Vol. 3 No. 3, September - December 2018
DOI: http://dx.doi.org/10.21088/cphn.2455.8621.3318.3

# Knowledge Regarding the Menstrual Hygiene among Adolescent Girls in Selected Rural and Urban Schools

**Sarah R. Budhe[1], Hemlata Salve[2]**

**Abstract**

*Background:* Cleanliness is one of the most important practice for a clean and healthy environment. It may be related to public hygiene and personal hygiene. Menstruation is monthly uterine bleeding for 4-5 days coming regularly every 28 days from puberty till menopause in a woman's reproductive life. Menstrual hygiene is neglected and people do not wish to explore this subject as it is still considered a social taboo. Good menstrual hygiene is crucial for the health, education and dignity of girls and women. *Objectives:* To assess the knowledge related to menstrual hygiene among adolescent girls in selected rural schools. To assess the knowledge related to menstrual hygiene among adolescent girls in selected urban schools. To compare the knowledge score related to menstrual hygiene among adolescent girls in selected rural and urban area. To find out the association between knowledge score with their demographic variables. *Methodology:* This study aims to assess and compare the knowledge related to menstrual hygiene among adolescent girls in selected rural and urban schools of the city. Total number of sample are 100 (50 rural and 50 urban) with the age group 13-16 years. A non experimental comparative descriptive research design is used with the quantitative approach. A non-probability convenient sampling technique used. *Result:* The present study showed that, in rural schools most of the samples i.e. 46% of the adolescent girls had average level of knowledge score, 52% had good and only 2% had very good level of knowledge score. The minimum score was 7 and the maximum score was 198, the mean score was 12.84±2.87 with a mean percentage score of 42.80±9.57. Similarly in urban schools 26% of the adolescent girls had average level of knowledge score, 62% had good and 12% had very good level of knowledge score. The minimum score was 7 and the maximum score was 20, the mean score for the was14.18±3.07 with a mean percentage score of 47.26±10.25. *Conclusion:* The present study shows that the adolescent girls belongs to rural schools has less knowledge than adolescent girls belongs to urban schools.

**Keywords:** Adolescent; Compare; Knowledge; Menstruation; Rural; Urban.

## Introduction

Reproductive health is a crucial part of general health and a central feature of adolescent development, reproductive health is a universal concern, but is of special importance for women particularly during the reproductive years, that is, from 12-19 years [1].

Adolescents have not been told about menstruation and sexually transmitted diseases, due to the factors like cultural background, religion, family pattern, parent's education etc., these factors makes the adolescents to acquire incorrect and inadequate information, filled with wrong beliefs and taboos [2].

However some girls show negative responses such as shame, fear, anxiety and depression [3].

Many girls remain absent for 4 days during their menstrual cycle; remaining absent in school for 48 days a year is a huge loss for students [4].

Surveys reported from varies part of India have

**Author's Affiliations:** [1]MSc Nursing Student [2]Associate Professor, VSPM College of Nursing and Research Centre, Nagpur, Maharashtra 440016, India.

**Corresponding Author: Hemlata Salve,** Associate Professor, VSPM College of Nursing and Research Centre, Nagpur, Maharashtra 440016, India.

**E-mail:** sarah_budhe@ymail.com

**Recived on** 29.10.2018, **Accepted on** 17.11.2018

shown that reproductive tract infection is major public health concern regarding to profound gynaecological morbidity in reproductive age group and it is mainly due to lack of menstrual hygiene [5].

There is empirical evidence that of the 113 million adolescent girls, 68 million attend about 1.4 million schools, with poor MHM practices and cultural taboos considered to be impediments to their school attendance. Therefore, it is imperative to recognize the importance of health, education and well-being of the young girls [6].

*Background of the study:*

Menstruation is the major contributing factor in absenteeism and poor academic performance among school girls. Girls often remain absent and drop out of schools because of bad sanitation facilities in schools. Many girls remain absent for 4 days during their menstrual cycle; remaining absent in school for 48 days a year is a huge loss for students. Menstrual hygiene has thus a vital aspect of health education and television programs, health officers, teachers and parents can play a very important role in transmitting a message of proper menstrual hygiene. This would save them from many health hazards [7].

Surveys reported from varies part of India have shown that reproductive tract infection is major public health concern regarding to profound gynaecological morbidity in reproductive age group and it is mainly due to lack of menstrual hygiene. The prevalence of clinically diagnosed virginities due to poor menstrual hygiene ranged from 4% in rural west Bengal, 62% in rural Maharashtra. Cervities ranged from 8% in Gujarat, 48% in Maharashtra. In New Delhi the report showed that poor menstrual hygiene was observed among 72.7% women with reproductive tract infection. Further study was conducted in Gujarat. The result revealed that about 37.2% girls does not have prior knowledge about menstruation and menstrual hygiene.

From the above studies the investigator identify that the adolescent girls are more prone to get reproductive tract infection, and this can be prevented by maintain hygiene. So that health education should be developed to empower young women with sufficient knowledge on menstrual hygiene [8].

In these days, girls are having menarche at an early age as compared to previous times. The customs and practices of the past are not followed these days. Women are not confined to their homes nor are they restricted to work. They move out of the house for education, jobs, and travel a lot. They are allowed to do everything normally, including taking daily baths or showers; exercising, dancing and playing sports are all fine. Women are always on the move, are more beauty conscience and they look for more convenient means to provide them comfort during menstrual periods. Hence, they need more education on hygienic health practices [9].

*Objectives*

- To assess the knowledge related to menstrual hygiene among adolescent girls in selected rural schools.
- To assess the knowledge related to menstrual hygiene among adolescent girls in selected urban schools.
- To compare the knowledge score related to menstrual hygiene among adolescent girls in selected rural and urban area.
- To find out the association between knowledge score with their demographic variables.

*Operational definition*

- *Compare* - In this study it is an activity to assess the difference between knowledge related to menstrual hygiene among adolescent girls in rural and urban schools.
- *Assess* - In this study, it refers to find out the knowledge of adolescent girls
- *Knowledge* - In this study, it refers to the correct response from the respondent regarding menstrual hygiene as elicited through a questionnaire.
- *Menstruation* - In this study it refers to maintaining hygienic practices during menstruation such as showering, use of sanitary products etc.
- *Adolescent* - In this study it refers to population between the age group 13-16years.
- *Rural* - In this study rural means adolescent girls from low population area or village area.
- *Urban* - In this study urban refers to adolescent girls from high populated area or city.

*Delimitations*

- Study is delimited to adolescent girls population, no adult population is involved.
- This study is delimited to the girls of age 13-16 only studying in selected schools.

*Assumptions*

1. Adolescent girls may have some knowledge regarding menstrual hygiene.
2. There may be a difference in the knowledge of adolescent girls in rural and urban schools
3. There may be relationship between knowledge score and selected demographic variable.

*Hypothesis*

*H0*- There will be no significant difference in the knowledge score regarding menstrual hygiene among adolescent girls in rural and urban schools.

*H1*- There will be a significant difference in the knowledge score regarding menstrual hygiene among adolescent girls in rural and urban schools.

*Conceptual framework*

The conceptual framework used for the present study is "Modified Roy's adaptation model". Roy's adaptation model was developed by Sr. Callista Roy.

**Review of Literature**

In the present study the literature reviewed has been organized into the following categories:

1. Literature related to assessment of knowledge regarding menstrual hygiene in adolescent girls.
2. Literature on comparison of knowledge between rural and urban adolescent girls.

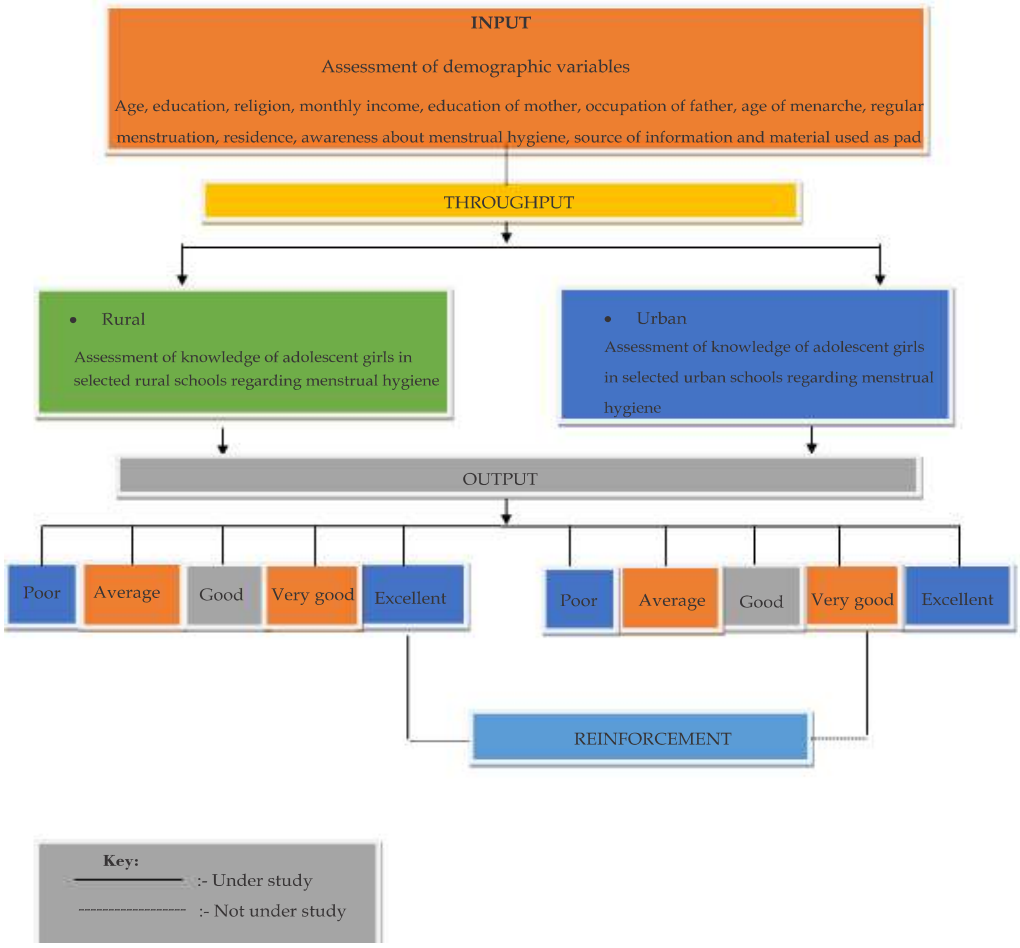



**Fig. 1:** Conceptual Framework Modified Roy's Adaptation Model

## Methodology

***Research approach:*** Quantative research approach

***Research Design:*** Non experimental comparative descriptive research design

***Setting of the study:*** Selected areas of the Nagpur

***Variable:***

*Research variable:* Knowledge regarding menstrual hygiene among adolescent girls.

*Demographic variables:* Age, education, religion, monthly income, education of mother, occupation of father, age of menarche, regular menstruation, residence, awareness about menstrual hygiene, source of information and material used as pad.

***Population:***

*Target population:* all adolescent girls of the city (age:13-16)

*Accessible population:* adolescent girls of the selected schools of the city who were available at the time of data collection and who were fulfilling the inclusion criteria.

*Sample size:* 100 adolescent girls (50 rural and 50 urban)

*Sampling technique:* non-probability convenient sampling technique.

***Sampling criteria:***

*Inclusion criteria:* In this study, inclusion criteria was adolescent girls who were-

- Adolescent girls between the age 13 -16
- Adolescent girls who are willing to participate.
- Adolescent girls who are available during the data collection.
- Adolescent girls who are able to read English and Marathi.
- Adolescent girls who are studying in selected schools in rural and urban area of the city.

*Exclusion criteria:* In this study, inclusion criteria was adolescent girls who were-

- Adolescent girls who are not willing to participate
- Adolescent girls who have not attended menarche.

***Tool and technique of data collection:***

The tools used in this study consist of two sections:

*Section I:* Structured questionnaire on demographic Variable.

*Section II:* Structured questionnaire on knowledge regarding menstrual hygiene consist of 30 questions.

***Content validity:***

For content validity tool was given to 21 experts for the content and construct validity; including obstetrics and gynecology nursing experts, pediatric nursing experts, community health nursing experts and statistician.

***Reliability:***

Karl Pearson Correlation Coefficient formula was used for reliability. The questionnaire was said to be reliable if the correlation was more than 0.8. The correlation coefficient 'r' of the questionnaire was 0.867, which is more than 0.8. Hence the questionnaire was found to be reliable.

***Pilot study:*** Permission was taken from concern authority. Pilot study was conducted from 04-12-17 to 12-12-2017 for a period of 7 days. A sample of 6 adult females was selected from the residential area. The pilot study was feasible in terms of time, money, material and resources.

***Data collection:*** The main study data was gathered from 14 December 2017 to 13 January 2018. Permission was obtained from the principal of the schools.

## Results

The analysis and interpretation is given in the following section:

*Section I* Description of adolescent girls with regards to demographic variables

**Table 1:** Percentage wise distribution of adolescent girls according to their demographic characteristics.

| Demographic Variables | Rural Area | | Urban Area | |
|---|---|---|---|---|
| Age(years) | Frequency (f) | Percentage (%) | Frequency (f) | Percentage (%) |
| 12-13 years | 3 | (6%) | 16 | (32%) |
| 13-14 years | 24 | (48%) | 15 | (30%) |
| 14-15 years | 12 | (24%) | 11 | (22%) |
| 15-16 years | 11 | (22%) | 8 | (16%) |

*Educational status of adolescent girls*

| | | | | |
|---|---|---|---|---|
| 7th standard | 4 | (8%) | 20 | (40%) |
| 8th standard | 20 | (40%) | 11 | (22%) |
| 9th standard | 14 | (28%) | 9 | (18%) |
| 10th standard | 12 | (24%) | 10 | (20%) |
| *Religion* | | | | |
| Hindu | 34 | (68%) | 27 | (54%) |
| Muslim | 6 | (12%) | 2 | (4%) |
| Christian | 0 | (0%) | 2 | (4%) |
| Buddhist | 3 | (6%) | 18 | (36%) |
| Others | 7 | (14%) | 1 | (2%) |
| *Monthly Family Income(Rs)* | | | | |
| <6000 Rs | 25 | (50%) | 8 | (16%) |
| 6001-9000 Rs | 5 | (10%) | 9 | (18%) |
| 9001-12000 Rs | 7 | (14%) | 15 | (30%) |
| >12000 Rs | 13 | (26%) | 18 | (36%) |
| *Educational status of mother* | | | | |
| Illiterate | 11 | (22%) | 0 | (0%) |
| Primary | 24 | (48%) | 6 | (12%) |
| Secondary | 12 | (24%) | 23 | (46%) |
| Higher Secondary | 3 | (6%) | 14 | (28%) |
| Graduate | 0 | (0%) | 4 | (8%) |
| PG | 0 | (0%) | 3 | (6%) |
| Other | 0 | (0%) | 0 | (0%) |
| *Occupation of father* | | | | |
| Farmer | 9 | (18%) | 0 | (0%) |
| Service | 3 | (6%) | 16 | (32%) |
| Business | 14 | (28%) | 24 | (48%) |
| Labour | 24 | (48%) | 10 | (20%) |
| Unemployed | 0 | (0%) | 0 | (0%) |
| *Age of menarche(years)* | | | | |
| <13 years | 16 | (32%) | 29 | (58%) |
| 13-14 years | 28 | (56%) | 17 | (34%) |
| 14-15 years | 4 | (8%) | 3 | (6%) |
| 15-16 years | 2 | (4%) | 1 | (2%) |
| *Regular Menstruation* | | | | |
| Yes | 38 | (76%) | 45 | (90%) |
| No | 12 | (24%) | 5 | (10%) |
| | | Residence | | |
| Urban | 0 | (0%) | 50 | (100%) |
| Rural | 50 | (100%) | 0 | (0%) |
| Semi Urban | 0 | (0%) | 0 | (0%) |
| *Aware about menstrual hygiene* | | | | |
| Yes | 46 | (92%) | 43 | (86%) |
| No | 4 | (8%) | 7 | (14%) |
| *Source of information* | | | | |
| Family | 39 | (78%) | 38 | (76%) |
| Friends | 7 | (14%) | 8 | (16%) |
| Teachers | 1 | (2%) | 3 | (6%) |
| Health Workers | 3 | (6%) | 0 | (0%) |
| Mass Media | 0 | (0%) | 1 | (2%) |
| Other | 0 | (0%) | 0 | (0%) |
| *What material is used as pad* | | | | |
| Commercially made sanitary pad | 33 | (66%) | 28 | (56%) |
| Cloth | 17 | (34%) | 8 | (16%) |
| Home made cotton pad | 0 | (0%) | 14 | (28%) |

*Section II* Assessment of existing knowledge regarding menstrual hygiene among adolescent girls in selected rural schools.

**Table 2:** Assessment of knowledge scores among adolescent girls in rural schools regarding menstrual hygiene

n=50

| Level of knowledge score | Score range | Knowledge Score | |
|---|---|---|---|
| | | Frequency (f) | Percentage (%) |
| Poor | 0-6(0-20%) | 0 | 0 |
| Average | 7-12(21-40%) | 23 | 46 |
| Good | 13-18(41-60%) | 26 | 52 |
| Very Good | 19-24(61-80% | 1 | 2 |
| Excellent | 25-30(>80%) | 0 | 0 |

*Section C* Assessment of existing knowledge regarding menstrual hygiene among adolescent girls in selected urban schools.

**Table 3:** Assessment of knowledge scores among adolescent girls in urban schools regarding menstrual hygiene

n=50

| Level of knowledge score | Score range | Knowledge Score | |
|---|---|---|---|
| | | Frequency (f) | Percentage (%) |
| Poor | 0-6(0-20%) | 0 | 0 |
| Average | 7-12(21-40%) | 13 | 26 |
| Good | 13-18(41-60%) | 31 | 62 |
| Very Good | 19-24(61-80% | 6 | 12 |
| Excellent | 25-30(>80%) | 0 | 0 |

Analysis revels that there is association of knowledge score with age. While none of the other demographic variable were associated with knowledge score.

*Section D* Comparison of knowledge score related to menstrual hygiene among adolescent girls in selected rural and urban schools.

**Table 4:** Comparison of knowledge score related to menstrual hygiene among adolescent girls in selected urban and rural area schools n=100

| Overall | Mean | SD | Mean Difference | Calculated t-value | df | Table value | p-value | Level of signifi-cance |
|---|---|---|---|---|---|---|---|---|
| Rural Area | 12.84 | 2.87 | 1.34 | 2.25 | 98 | 1.98 | 0.027 S.p<0.05 | p≤0.05 |
| Urban Area | 14.18 | 3.07 | | | | | | |

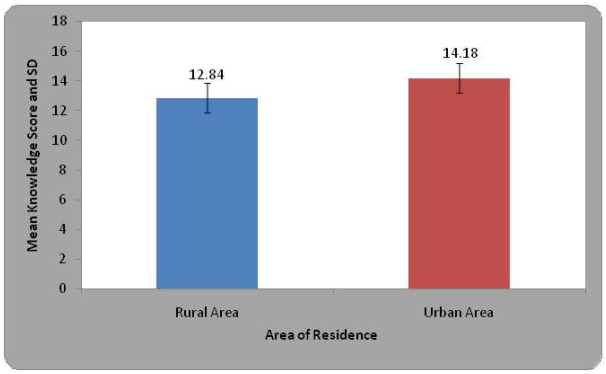



**Fig. 1:** Bar diagram represents Comparison of knowledge score related to menstrual hygiene among adolescent girls in selected urban and rural area schools

## Discussion

The present study showed that, in rural schools most of the samples i.e. 46% of the adolescent girls had average level of knowledge score, 52% had good and only 2% had very good level of knowledge score. The minimum score was 7 and the maximum score was 19, the mean score for the was12.84±2.87 with a mean percentage score of 42.80±9.57. Similarly in urban schools 26% of the adolescent girls had average level of knowledge score, 62% had good and 12% had very good level of knowledge score. The minimum score was 7 and the maximum score was 20, the mean score was 14.18±3.07 with a mean percentage score of 47.26±10.25. The analysis reveals that there is an association of knowledge score with the family income and education of mother. In urban schools the analysis reveals that there is an association of knowledge score with the education of students, age of menarche and material used as pad.

A cross- sectional study was carried out amongst 300 school going adolescent girls (10- 19 years) in the rural area of Wardha district, Maharashtra, India. Majority of the girls received the information regarding menstruation from their mothers (41%), followed by Media (24%) and friends (19%). Of the girls who developed genital tract infections, 66% used cloth. 37% girls do not disclose about their menstruation. Cleanliness of external genitalia was unsatisfactory. Hence it is important to educate the girls with scientific knowledge and dispelling their myths and misconceptions thereby encouraging safe and hygienic practices for safeguarding themselves against various infections [10].

In above study majority 41% of girls received information from mothers, 24% from media and 19% from friends. In present study majority 76% of girls received information mothers, 2% from mass media and 16% from friends.

The cross-sectional study was conducted among 440 school going adolescent girls. After taking informed consent, the data was collected through self-administered questionnaire prepared in Hindi language to the girls. Results found that the mean age of menarche in school going adolescent girls was 12.7+1.00 years. Out of 440 girls studied 315 (71.59) faced some problem during menstruation. 75% girls knew about menstrual cycle before their menarche. In most cases their first informant was their teacher. The study on the practices during menstruation showed that 378 (85.92%) girls used sanitary pads during menstruation, 13 (2.95%) girls used old cloth pieces. Age, Number of family members, Mother's education and Awareness about menstruation before menarche were significantly associated with good menstrual hygiene. Conclusion was the study showed that for more number of girls first informant about menstruation was their teachers and mothers. Different restrictions were practiced by most of the girls in the present study [11].

In above study 85.92% of adolescent girls were using sanitary pads and 2.95% using cloth. In present study 56% of adolescent girls were using sanitary pads and 16% using cloth.

## Conclusion

This shows that the adolescent girls belongs to rural schools has less knowledge than adolescent girls belongs to urban schools.

Analysis also reveals that there is an association of knowledge score with the family income and education of mother in rural schools and there is an association of knowledge score with the education of students, age of menarche and material used as pad in urban schools.

*Implication of the study:-*

The findings of this study have implications for nursing practice, nursing education, nursing administration, and nursing research

*Nursing practice*

- The findings of the present study emphasis on knowledge regarding menstrual hygiene which can be put into nursing practice in early identification of disease or infection (urinary tract infection, vaginitis, cervicities etc.) and planned teaching can be used as

a basis of educating them in prevention of menstrual hygiene problems.

- The health care professionals including nurses will be more vigilant and tactful in order to assess the knowledge, identify and prevent factors that cause high risk of menstrual hygiene problems that may alter their physical, social life and well being significantly.
- The findings of the study will help the nursing professionals working in hospital gaining the knowledge and helping in planning and implementing of health teaching.

*Nursing education*

- The present study emphasis that health education on knowledge regarding menstrual hygiene among adolescent girls. In order to educate the adolescent girls, it is essential that nurses are competent and have sound knowledge to improve the level of understanding which can be reflected to the public through education.
- The nursing students develops an insight regarding knowledge of menstrual hygiene and implement the knowledge of the same while dealing with clients in various setting.
- The student nurse can use the instrument prepared for this study for collecting information regarding menstrual hygiene.
- The findings can be utilized to prepare a module on factors contributing menstrual hygiene.
- The findings can be used in BSc and MSc nursing and can be made changes in the classroom teaching.

*Nursing administration*

- Health administration plays a vital role in supervision and management of nursing profession. The nurse administrators can utilize the present tool for assessing the knowledge of adolescent girls and can implement measures to promote health on the findings of the study. Teaching module, group discussion and periodical educational sessions can also be arranged for adolescent girls.
- Knowledge regarding reproductive health being concern of medical health care facilities, programmes at school and college level foe perspective can be planned and implemented country wide to prevent the occurrence of menstrual hygiene.

*Nursing research*

- The findings of the present study can be utilized by nurse researchers to contribute to the profession to accumulate new knowledge regarding menstrual hygiene, and can take professional accountability to educate and motivate the adolescent girls towards health promoting practices. The present study would help nurses and other health care personnel to understand the level of knowledge of adolescent girls regarding menstrual hygiene. Based on this knowledge the nurse researchers may utilize the suggestions and recommendations for conducting further study.
- The nurse researchers can use the findings of this study as baseline data to conduct further intervational research to identify the level of knowledge and to determine the association of others demographic variable as age, education, religion etc of the samples and to identify the effect of nay variable on knowledge of menstrual hygiene.

*Personal experience:*

- The entire study gave an enriching experience to the researcher. It helped her develop her skill in critical thinking and analysis and realize the importance of effective communication with respondent.
- The entire study was varied and rich learning experiences, which enabled the researcher to develop her skill in dealing with different personalities. The concept clarity about research as a whole was increased. At every stage the researcher received guidance and support from the guide. This boosted confidence to go ahead and carry out the planned activities. The cooperation from study samples was remarkable. The research was a great learning opportunity for the researcher.

*Recommendations*

- On the basis of the study, following recommendation has been made:
- A similar study can be conducted on a large population for wider generalization.

- A similar study can be conducted by using a structured teaching programme on menstrual hygiene.
- A similar study can be conducted to evaluate the efficiency of various teaching strategies like informational booklet, leaflets, pamphlets and computer assisted instruction on menstrual hygiene.
- A similar study can be conducted in married and unmarried women to know their practices about menstrual hygiene.
- An experimental study can be undertaken with the control group for effective comparison of result.
- Mass media and educational programmes should be arranged to educate the girls and women regarding menstrual hygiene.

**Reference**


1. http//www.un.org/popin/unfpa/taskforce/guide/iatfreph.gdl.html.
2. R. Marlow, Babara A. Redding, Text book of *Pediatric Nursing*, sixth edition, Sanders publication, Page-1122.
3. Johnson, Fernandez. A Study on awareness regarding safe and hygienic Practices amongst school going adolescent girls, Wardha district, India. Vol: 2, October 2010
4. Mimansha Joshi. Menstruation, a bugbear for school girls. Republica social affairs, 2009 Oct.http://wash asia. wordpress.com
5. Dasgupta A, Sukar M. Menstrual hygiene; How hygiene is the adolescent girl? Indian journal of community medicine. 2008;33:77-80
6. Prusty RK, Kumar A. Socioeconomic dynamics of gender disparity in childhood immunization in India, 1992–2006. PLoS ONE 2014;9:e104598
7. Mimansha Joshi. Menstruation, a bugbear for school girls. Republica social affairs, 2009 Oct. http:// wash asia. wordpress.com
8. Dasgupta A, Sukar M. Menstrual hygiene; How hygiene is the adolescent girl? Indian journal of community medicine. 2008;33:77-80
9. Jimmy Wales. Menstrual Taboo. Wikepedia Encyclopedia, 2010 Oct; en.wikepedia.org/wiki/ Menstrual_taboo
10. A Cross-sectional Study on Awareness Regarding Safe and Hygienic Practices amongst School Going Adolescent Girls in Rural Area of Wardha District, India. www.ccsenet.org/gjhs Global Journal of Health Science 2010 Oct;2(2):225-231.
11. Patavegar BN, Kapilashrami MC, Rasheed N et. al. Menstrual hygiene among adolescent school girls: an in-depth cross-sectional study in an urban community. Int J Health Sci Res. 2014;4(11):15-21.

Community and Public Health Nursing
Vol. 3 No. 3, September - December 2018
DOI: http://dx.doi.org/10.21088/cphn.2455.8621.3318.4

# Concept Mapping in Nursing Education

**Jinu K. Rajan[1], Nalini Ramakrishnan[2]**

**Abstract**

Concept mapping is way of representing the organization of knowledge. It is a visual graphic, a web diagram for exploring knowledge and gathering and sharing information. Concept maps are two dimensional representations of cognitive structures showing the hierarchies and the interconnections of concepts involved in a discipline or sub discipline. It consists of nodes or cells that contain a concept or question and links. The links are denoted by the direction with an arrow or symbol. Labeled links explain the relationship between the nodes, whereas the arrow marks describes the direction of the relationship. Instructors and students reported satisfaction from use of concept maps in the educational process. Teaching with the aid of concept maps has been incorporated as an innovative and viable teaching method in nursing education.

**Keywords:** Concept; Mapping; Nursing Education.

## Introduction

Although concept mapping was created in the early 1980s, research in nursing education first appeared in 1992. Mapping concepts and ideas is a way to visualize information, communicate, brainstorm ideas, problem-solve, collaborate with colleagues, and manage projects. You can turn ideas and thoughts into a visual diagram that will enhance learning and retention of material.

### *Historical overview*

The technique of concept mapping was first used by Joseph D Novak and his team at Cornell University. The concept maps have their origin in the learning movement called constructivism. The *visual depiction of concepts and ideas* was reported as early as the 3rd century (Emilsson, 2015). Visual diagramming tools are categorized under an umbrella term called *graphic organizers* and include concept mapping, mind mapping, spider or brainstorming web diagrams, plots, charts (e.g., organizational charts, Gantt charts), cause and effect diagrams, and others (Inspiration Software, 2017).

**Author's Affiliations:** [1]Assistant Professor, Department of Nursing, College of Applied Medical Sciences, Majmaah University, Kingdom of Saudi Arabia, [2]1st year Msc Nursing Student, Harsha College of Nursing, Bengaluru, Karnataka 562123, india.

**Corresponding Author: Nalini Ramakrishnan,** 1st year Msc Nursing Student, Harsha College of Nursing, Bengaluru, Karnataka 562123,india.

**E-mail:** jinukrajan@rediffmail.com

**Recived on** 19.09.2018, **Accepted on** 01.10.2018



### *Evidence based practice*

Taylor and Wros describe students' use of a software program to create a visual depiction of a nursing care plan. All and Haycke narrate nursing students unique usage of concept mapping in nursing theory. Mac Nell's article describes the benefits of concept mapping in course evaluation.

## Steps in Preparing Concept Map

- *Select:* write down major terms, concepts, and keywords about a topic.
- *Rank:* identify the mist general, intermediate and specific concepts and rank them as most abstract to most specific.
- *Cluster:* group he concepts by drawing circles
  - ✓ On top most general concepts.
  - ✓ In the middle intermediate concepts
  - ✓ On bottom specific concepts.
- *Arrange:* place concepts into a diagrammatic

representation by drawing lines between related concepts.

- *Link and label:* use lines and prepositions to link and label the concepts.
- *Self assessment:* revise the concept map based on the appraisal.
- *Peer assessment:* get feedback from a peer group.
- *Finalize:* finalize concept map based on self and peer review and by critical analysis.

*Tips used in preparation of concept maps*

The following approaches are used to develop nodes and links

- Top down approach
- Working from general to specific
- Free association approach
- Brainstorming nodes to developing links and relationships.
- Different shapes for nodes to identify different types of information
- Different colored nodes to identify prior and new information
- Cloud node to identify a question.
- Question node to gather information.

*Options for Developing Concept Maps*

- Developed by faculty or student
- Open or closed structure
- Computer based concept maps

**Types of Concept Maps**

1. *Spider concept map:* the centre theme or unifying factor is placed in the centre of the map. The subthemes radiate outwardly to the centre.
2. *The hierarchy concept map:* the information is presented in a descending order of importance. Distinguishing factors determine the placement of the information.
3. *The flow chart concept map:* it is similar to flow chart with addition of inputs and outputs.
4. *Picture landscape concept map:* the information is presented in a landscape format.
5. *Multidimensional/3-D concept map:* these describe the flow or state of information or recourses which are too complicated for a simple two dimensional map.
6. *Mandala concept:* Information is presented within a format of interlocking geometric shapes. A "telescoping" factor creates compelling visual effects which focus the attention and thought processes of the viewer.
7. *Problem solution map:* in this students will have a problem statement, definition, causes and effects leading to a possible solution. It can be more structured or less structured.
8. *Process development map:* there is a beginning and an end with multiple steps and alternatives. Students are asked to create a process for accomplishing a task.
9. *Persuasive argument:* students present a persuasive argument. This can be converted to the word processing document.
10. *Characteristics:* free form of thinking, ask students to think Characteristics of something. Can be used for descriptive type of work.
11. *Research topic:* it is more descriptive ask students to think how, where, why when research questions.
12. *Narrative story type:* it has setting characters, problem and solution. It is more traditional type.

*Advantages of concept mapping for nursing students*

- Demonstrate cognitive synthesis skills with minimum writing.
- Categorize various ideas.
- Clarify their thoughts
- Define new concept vocabulary
- Illustrate the relationship between ideas/ concepts.
- Aid in creativity by stimulation generation of new ideas.
- Enhance Meta cognitive learning abilities to learn and think about knowledge.
- Share knowledge and information generated.
- Design structures or processes such as written documents, constructions, websites, web search, multimedia presentation.
- Develop problem solving abilities.

*Advantages of concept mapping for nursing faculty*

- Gain an insight how students understand the existing knowledge.
- Broaden the faculty's understanding on how students develop the relationship between the facts
- Introduce the topic
- Help in formative assessment/evaluation.

*Limitation of concept mapping*

- If several concepts are included, it will be difficult for the begging students to understand and comprehend the whole meaning and interrelationship between the facts.
- As key words and phrases are used it may be more challenging to interpret the students' main intent.
- Special software is required to create, hence purchase price and training costs should be considered.
- Consumes more time in reading and responding
- Becoming a nightmare for those who do not like computer usage.
- Needs a clear grading rubric, otherwise it becomes subjective.
- Faculty needs to establish he validity and reliability of their assessment tools.

## Conclusion

Over the past 25 years, nursing education scholars and researchers have investigated the use of concept maps in teaching and learning. This research has progressed through various stages and greatly expanded the understanding and use of concept maps in nursing. It is now time to move this research into areas that can further transform our educational practices.

## References


1. Abel, W.M. & Freeze, M. Evaluation of concept mapping in an associate degree nursing programs. Journal of Nursing Education, 2006;45:356–64.
2. Adams J. Historical review and appraisal of research on the learning, retention and transfer of human motor skills. Psychological Bulletin, 1987;10(1):41–74. doi:10.1037/0033-2909.101.1.41.
3. All, A.C. & Havens, R.L. Cognitive/concept mapping: A teaching strategy for nursing. Journal of Advanced Nursing, 1997;25:1210–19. doi:10.1046/j.1365-2648.1997.19970251210.x.
4. All, A.C. & Huycke, L.I. Serial concept maps: Tools for concept analysis. Journal of Nursing Education, 2007;46:217–24.
5. Barbara J. Daley, PhD, RN; Sarah Morgan, PhD, RN, CNE; Sarah Black Beman, MA, RN, CNE. Concept Maps in Nursing Education: A Historical Literature Review and Research Directions. Journal of Nursing Education. 2016;55(11):631-639,https://doi.org/10.3928/01484834-20161011-05.
6. Brune, M.E. Concept mapping: A strategy to increase critical thinking in nursing students: An action research study (Unpublished doctoral dissertation). Capella University, Minneapolis, Minnesota. 2013.
7. Brunt B.A. Models, measurement, and strategies in developing critical-thinking skills. The Journal of Continuing Education in Nursing, 2005;36:255–62.
8. Burrell, L.A. Integrating critical thinking strategies into nursing curricula. Teaching and Learning in Nursing, 2014;9:53–58. doi:10.1016/j.teln.2013.12.005.
9. Cañas, A.J., Hill, G., Carff, R., Suri, N., Lott, J., Gómez, G. & Carvajal, R. CmapTools: A knowledge modeling and sharing environment. Paper presented at the Concept Maps: Theory, Methodology, Technology First International Conference on Concept Mapping., Pamplona, Spain. 2014 Sep.
10. Cañas A.J., Hill G. & Lott J. Support for constructing knowledge models in Cmap Tools. 2003. Retrieved fromhttp://cmap.ihmc.us/Publications/WhitePapers/Support%20for%20Constructing%20Knowledge%20Models%20in%20CmapTools.pdf.
11. Carpenito-Moyet, L.J. Understanding the nursing process: Concept mapping and care planning for students. New York, NY: Lippincott, Williams & Wilkins. 2007.
12. D. Sujayalakshmi. Use of concept mapping. Nightingale Nursing Times, 2009;5(6):42-44.
13. Emilsson E. Porphyry. The Stanford Encyclopedia of Philosophy (summer 2015 Edition). Edward N. Zalta (Ed.). https://plato.stanford.edu/entries/porphyry/.
14. Inspiration Software. Teaching and learning with graphic organizers. 2017. http://www.inspiration.com/visual-learning/graphic-organizers.

Community and Public Health Nursing
Vol. 3 No. 3, September - December 2018
DOI: http://dx.doi.org/10.21088/cphn.2455.8621.3318.5

# Use of Puppetry in Community Health Nursing

**Jinu K. Rajan**

**Abstract**

A puppet may be a representational object manipulated by a performer. It is typically however not forever an outline of a person's character. During the process of animation a puppet undergoes a transformation, which is handled by one or more number of performing artist. Some puppets can be stimulated electronically. Puppets are manufactured from a good variety of materials. Depending on the impact the performer desires and the way it's used, a puppet is very complicated or terribly easy. In contemporary puppet theatre, puppets are generally referred to as 'performing objects, because there are numerous completely different varieties available. Puppets have been used in classrooms, homes, hospitals and care centers for fun and learning. They have been used as an educational resource for decades, and various studies have proved that they are very effective aids for entertaining and teaching

**Keywords:** Puppets; Cartons; Play; Community Health Nursing.

## Introduction

Puppetry may be a sort of theatre performance that involves the manipulation of puppets inanimate objects, typically resembling some kind of human or animal figure that are animated or manipulated by an individual's known as puppeteer/performer. Such a show is additionally called as a puppet play.

The performing artist uses movements of her hands, arms, or devices like rods or strings to maneuver the body, head, limbs, and in few instance the mouth and eyes of the puppet.

The performer typically speaks within the voice of the character of the puppet, and so synchronizes the actions of the puppet's mouth with this vocal part. The actions, gestures and verbal elements acted out by the puppets are usually employed in storytelling.

**Author's Affiliations:** Assistant Professor, Department of Nursing, College of Applied Medical Sciences, Majmaah University, Kingdom of Saudi Arabia.

**Corresponding Author: Jinu K Rajan,** Assistant Professor, Department of Nursing, College of Applied Medical Sciences, Majmaah University, Kingdom of Saudi Arabia.

**E-mail:** jinukrajan@rediffmail.com

**Recived on** 07.10.2018, **Accepted on** 17.11.2018



*History*

Puppetry could be an olden kind of theatre that was 1st recorded within the fifth century BC in Ancient Greece. Some styles of puppetry might have originated as way back as 3000 years before Christ. Puppetry takes several forms, however all of them share the method of enlivening inanimate playacting objects to inform a story. Puppetry is employed in most human societies each as recreation – in act – and ceremonially in rituals and celebrations like carnivals. Puppets are used since the earliest times to animate and corresponds the ideas and desires of human societies.

Puppetry was trained in ancient Greece and therefore the oldest written records of puppetry are often found within the works of Herodotus and Xenophon, dating from the and fifth century BC. India features a long tradition of puppetry. In the ancient Indian epic religious writing Mahabharatum there are references to puppets.

## Types of Puppets

*Finger Puppet*

In a finger puppet a tube is fitted over the fingers. Adorned in numerous ways, a small cast of characters can be placed in both the hands. In another side two fingers are pushed through the puppet's body part to turn into the legs.

*Hand Puppet (Glove Puppet)*

This could be a sort of puppet that's controlled by the hand or hands that occupies the inside of the puppet. This is a type of a puppet that fits over your hand like a glove and is moved by the fingers and hand of its wearer.

*Junk Puppet (Found Object)*

A normal paper puppet represents a junk puppet. Some of the day to day objects like drawings, sketches, mops can be handled by various methods like hands or rods can be developed into a puppet. These "found objects", within the hands of a proficient performer, will be actually charming [4].


*Pop-up Puppet*

This type puppet is commonly found in almost every toy/play stores. This has a cone with a straight up rod and a doll is connected to the highest of the rod. By pushing the rod up and down through the cone you'll be able to build the character seem and disappear.

*Jigging Puppet*

Street performers within the late eighteenth century manipulated jigging or paddle puppets by sound a plank with their foot. The performing artist used his hands to play a flute or different instrument to accompany the dance.

*Jumping Jack*

The four limbs of the character is attached with four strings controlled by simple straightforward movements. At the bottom of the puppets the strings are attached, and during the pull and release the arms and legs of the puppet moves up and down.

*Rod Puppet*

A rod puppet may be a puppet created around a central rod secured to the top end. A large glove covers the rod and is connected to the neck of the puppet. A rod puppet is controlled by the performer moving the metal rods connected to the hands of the puppet (or the other limbs) and by turning the central rod secured to the top.

*Shadow Puppet*

A shadow puppet may be a cut-out figure control between a beam of light and semitransparent screen. A shadow performer learns to maneuver the puppet at varied distances from the beam of light thus its shade increase in and decrease in size, and goes in and out of center.

*Hand and Rod Puppet*

The performing artist uses his hand to maneuver the puppet's mouth whereas rods hooked up to the puppet's hands animate the arms.

*String Puppet*

One of the foremost troublesome puppets to govern effectively. A puppet suspends on strings hooked up to its hands, head, feet and knees. A basic puppet sometimes has eight strings. Some, however, have thirty or additional. A good performing artist learns a way to use gravity to grant the puppet life and weight. To figure a puppet well takes a good deal of experience.

*Ventriloquist Figure*

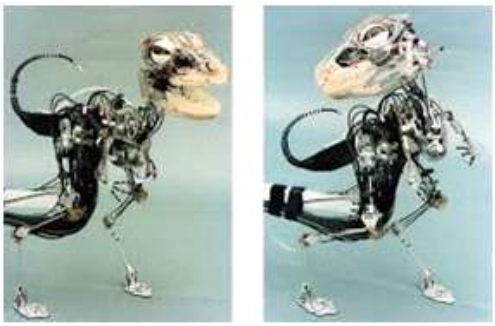
Ventriloquism is a lot of fun; however it too takes an excellent deal of experience. The puppet encompasses a slotted mouth that works on a trigger. They are referred to as dummies as a result of they are doing not speak on their own. The performing artist dummy is controlled by one hand of the performing artist. Ventriloquism acts don't seem to be continuously performed with a standard dummy; often different types of puppetry are used

*Humanette*

Sometimes referred to as a "living doll", a puppet manipulated ahead of the performer, with the puppeteer's head, and typically hands, showing as that of the puppet. The artist, wearing black gloves, controls the limbs with rods hooked up to the hands and heels. The performer's hands may additionally put into a shoe to maneuver the feet with a second performer manipulating the arms.

*Cable Puppet*

It is one of the costliest types of puppet; it uses bicycle cables to regulate its movements. These are common puppets within the world of special tricks. A puppet like Chucky in Child's Play needs as several as eight puppeteers.



*Animatronic (Radio-Controlled Puppet)*

It is an outwardly manipulated puppet or figure. The controls may be either wire, sort of a cycle wire, or radio signal sort of unmanned airplane. The performing artist maneuvers the figure from a distance.

*Body Suits (Walkabouts)*

"Walkabouts" are the clothed characters that leisurely walk through fun parks.

When facial animation is value-added, the body or "character" suit becomes a puppet. Animations are often through with strings, cables or radio controls.

*Pneumatic Puppet*

In this type pressurized air is moving through the body component which is making the puppets to ambulate. These gas puppets are big fun house structures usually seen in exhibitions, expos, marketplaces etc. They are typically controlled remotely, although merely, with no performers necessary.

*Hydraulic Puppet*

These types of puppets are too huge that it can only be maneuvered by pressure or water.

*Stop-Action / Stop-Motion Puppet*

Stop-action puppets are as recent as filmmaking. Still extremely popular these days, stop-motion puppets are everyplace. The animations are often seen once the film sequence is run. This way of

puppetry takes a great deal of patience and a temperament to redo. Stop-motion artists like the title "animator" to "puppeteer.

*Computer-Generated Puppet*

Some of the characters of puppetry gave a new dimension to computer animation technology. Basic information of sculpting, puppet movements interpret well into CGI.

*Socks puppet*

This puppet is made up of a sock or garment. The performer wears the sock on a hand and lower arm as if it were a glove, with the puppet's mouth being fashioned by the region between the sock's heel and toe, and therefore the puppeteer's thumb acting like the jaw. The arrangement of the fingers forms, the figure of a mouth that is typically soft with a tough piece of felt, usually with a tongue pasted within.

*Motion-Capture Puppet (Digital Monkey)*

Some of the equipments which emit light beam or radio signals are connected to artist's body. Any overweening movement makes the computerized puppet move in unfeasible ways: arms might tolerate the body, for instance. Like a puppet, this is often really exacting thanks to manipulate a puppet.

**Basic Guide To Using Puppets**

Puppet choice is is crucial to a successful puppet play. All puppets aren't appropriate for stage puppetry, and every one stories aren't appropriate for telling with a puppet.

*Choose A Puppet:*

- That you can give a suitable tone
- That fits your hand snugly however well enough to govern simply and doesn't constrict your hand movements. A puppet that's too tiny or overlarge for your hand can have awkward movements, or may slide off your hand in performance.
- That has eyes and alternative options that may be simply seen by the audience. The puppet's eye contact with the audience is a very important facet of its interaction with the audience.
- That is giant enough to be seen by the biggest audience you propose to use the puppet for. Audiences can quickly lose interest and squirmy making an attempt to envision a puppet that's too tiny for its movements to be simply watched.
- With a mouth that's simply manipulated (if it's a mouth). Some puppets have "hard" mouths that troublesome to adopt. But if the puppet incorporates a mouth that you just shall use, it's necessary for the mouth to maneuver naturally and simply.

**Advantages**

- Puppets are movable objects /items
- Puppets are safe for all age group of people
- Puppets develop skills and teamwork in school curriculum
- The music and artistic movement are often created a lot of fascinating through the utilization of puppets
- Improving Motor skills- learning to control the varied elements of the puppet needs fine and in some cases gross motor skills.
- Youngsters will learn acceptable behaviors by looking the puppet's example.
- Youngsters will use puppets to come back up with stories, scenarios, and artistic ways that to unravel issues.
- Puppets may be easy-to-manipulate characters in a very form of dramatic play themes and stories once youngsters use puppets to inform stories, variety of psychological feature skills acquire play.
- The use of puppets would help a teacher or parent to explore with kids problems like conflict resolution, empathy, a way to affect aggression and bullying from others, a way to be kind and useful, etc.

**Use of Puppetry in Community**

- Puppetries are useful in creating awareness and increased knowledge among
- women has impacted on the well being of the family.
- Creating Opportunities for training in income generation have empowered
- women to be more independent and have taken active part in decision making
- within their own families and gradually the community as well.
- Providing training to function as survey workers - community workers have
- provided opportunities to women to earn a regular income and thus improve the quality of their lives.
- Helping in Poverty reduction to a certain extent through increased opportunities to women for education and training within community distance and easy accessibility.
- Perception of the community at large is changing towards both groups – the disabled and the women since they are now seen as contributors in family income.
- Mothers, of the disabled in particular, are able to utilize their time and their innate intelligence to learn skills, which have helped them to earn an income.
- Increase in outreach, scope and range of services reaching to an increasing clientele.

**Conclusion**

With the changing times there is a need to continuously evolve most relevant and effective means of communications. The receptivity of the target group, as experienced by us is the most important consideration. Every group/community has a culture – way of life, language, etiquettes, methods of communication, their own rules and regulations, taboos, superstitions and levels of exposure to the modern and ever changing lifestyles. In the context of the Indian communities, puppets have been found to be a very effective means of communication – particularly on subjects that are filled with superstitions, myths, taboos, ignorance and misunderstandings. With changing times, increasing awareness, and improvements in the communities - economically and socially, it is possible that other better and more relevant communication media/systems may evolve.

**Reference**

1. Blumenthal, Eileen, Puppetry and Puppets, Thames & Hudson, 2005. ISBN 978-0-500-51226-5.
2. http://pronay-165022.blogspot.com/2017/12/advantages-of-puppetry-ascommunication.html.
3. http://www.fredericback.com/ateliers/toutrien/pdfs/activity_sheet_4a.pdf.
4. http://www.jldd.jp/gtid/acmr_18/pdf/27.pdf
5. https://en.wikipedia.org/wiki/Puppetry.
6. https://en.wikipedia.org/wiki/Puppetry#cite_ref-G-m-b-15-16_9-0.
7. https://puppetsforlibraries.wordpress.com/basic-guide-to-using-puppets/.
8. https://www.parentcircle.com/article/benefits-of-teaching-through-puppet-play/.
9. Strings, Hands, Shadows: A Modern Puppet History, John Bell, Detroit Institute of Art, 2000, ISBN 0-89558-156-6.
10. www.fredericback.com/ateliers/toutrien/pdfs/activity_sheet_4a.pdf.

Community and Public Health Nursing
Vol. 3 No. 3, September - December 2018
DOI: http://dx.doi.org/10.21088/cphn.2455.8621.3318.6

# Biometrics: A New Era in Health Care

**Jinu K. Rajan**

**Abstract**

Biometrics is the measurement and statistical analysis of people's unique physical and behavioral characteristics. The technology is mainly used for identification and access control, or for identifying individuals who are under surveillance. In the mid to late 90s there was often confusion like this in the media when "biometrics" was used by the security and the pharmaceutical/medical world. Biometrics covers a variety of technologies in which unique identifiable attributes of people are used for identification and authentication. These include (but are not limited to) a person's fingerprint, iris print, hand, face, voice, gait or signature, which can be used to validate the identity of individuals seeking to control access to computers, airlines, databases and other areas which may need to be restricted. Every medium of authentication has its own advantages and shortcomings. With the increased use of computers as vehicles of information technology, it is necessary to restrict unauthorized access to or fraudulent use of sensitive/personal data. Biometric techniques being potentially able to augment this restriction are enjoying a renewed interest.

**Keywords:** Biometrics; Health Care; Technology.

## Introduction

Biometrics is the measurement and statistical analysis of people's unique physical and behavioral characteristics. The technology is mainly used for identification and access control, or for identifying individuals who are under surveillance. The basic premise of biometric authentication is that every person can be accurately identified by his or her intrinsic physical or behavioral traits.

- *Biometric identification* consists of determining the identity of a person. The aim is to capture an item of biometric data from this person. It can be a photo of their face, a record of their voice, or an image of their fingerprint. This data is then compared to the biometric data of several other persons kept in a database.

**Author's Affiliations:** Assistant Professor, Department of Nursing, College of Applied Medical Sciences, Majmaah University, Kingdom of Saudi Arabia.

**Corresponding Author: Jinu K Rajan,** Assistant Professor, Department of Nursing, College of Applied Medical Sciences, Majmaah University, Kingdom of Saudi Arabia.

**E-mail:** jinukrajan@rediffmail.com

**Recived on** 14.10.2018, **Accepted on** 31.10.2018



- *Biometric authentication* is the process of comparing data for the person's characteristics to that person's biometric "template" in order to determine resemblance. The reference model is first store in a database or a secure portable element like a smart card. The data stored is then compared to the person's biometric data to be authenticated. Here it is the person's identity which is being verified.

As technology becomes a pivotal part of our everyday lives, we are increasingly willing to provide personal information in exchange for a more effortless and interactive experience.

## History

- The term "biometrics" is derived from the Greek words "bio" (life) and "metrics" (to measure). Automated biometric systems have only become available over the last few decades, due to significant advances in the field of computer processing.
- Many of these new automated techniques, however, are based on ideas that were originally conceived hundreds, even thousands of years ago.

- Biometrics addresses a *longstanding concern* to be able to prove one›s identity, irrefutably, by making use of what makes one different. Going as far back as prehistoric times, man already had a feeling that certain characteristics such as the trace of his finger were sufficient to identify him, and he "signed" with his finger.
- In the second century B.C., the Chinese emperor Ts'In, was already authenticating certain seals with a fingerprint.
- In the 19th century, Bertillon took the first steps in scientific policing. He used measurements taken of certain anatomical characteristics to identify reoffending criminals, a technique which often proved successful, though without offering any real guarantee of reliability.
- This budding use of biometrics was then somewhat forgotten, only to be rediscovered by William James Herschel, a British officer, to be used for an entirely different purpose. Having been put in charge of building roads in Bengal, he had his subcontractors sign contracts with their fingerprints. An early form of biometric authentication and a sure way of being able to find them more easily if they defaulted.
- In the UK, the Metropolitan Police started the use of biometrics for identification in 1901.
- During World War II allied forces used the same method to identify senders and authentication messages they received.
- True biometric systems began to emerge in the latter half of the twentieth century, coinciding with the emergence of computer systems. The nascent field experienced an explosion of activity in the 1990s and began to surface in everyday applications in the early 2000s.

**Types of Biometrics**

All biometric modalities are basically two types; physiological and behavioral. Physiological biometrics includes fingerprint, iris, face, palm vein recognition etc. Behavioral biometrics includes signature and voice recognition. However, the known types of biometrics are following:

*1. Fingerprint Recognition*

Fingerprint recognition technology has been done by taking a photograph of an individual's fingertips and record the characteristics including whorls, arches, and loops of the fingertip. It also captures the patterns of ridges, furrows, and minutiae for accurate analysis.

The process can be done in three ways:

- Minutiae based
- Correlation based
- Ridge feature based

The fingerprint is a very secured, reliable and stable biometric solution. Law enforcement agencies have been using this technology for decades to identify criminals. Currently, this technology is becoming popular in household security, banking, workforce management etc.

*2. Iris Recognition*

Many recognize Iris recognition as the best biometric technology for identification. It analyzes the iris characteristics including rings, furrows, freckles that is situated in the colored tissue around the pupil. The iris scanner that contains a video camera and works through glasses and contact lenses.

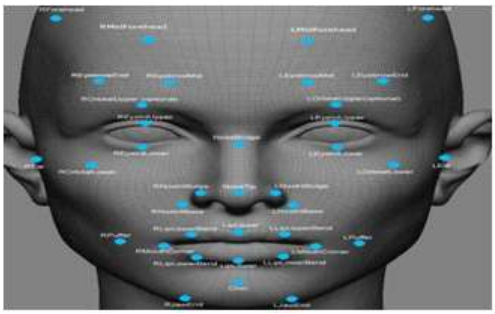
Generally, iris recognition can be done by two methods:

- Daugman System and
- Wildes System

Iris recognition is deployed by many countries in crucial places like border crossings, banking, private companies, institutes, law enforcement agencies etc.

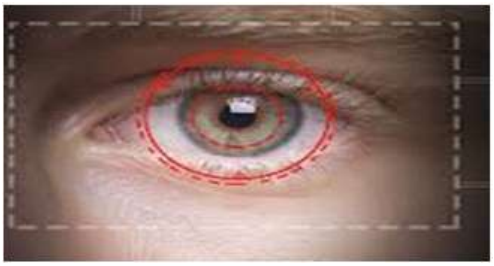
*3. Face Recognition*

Face recognition technique records face images through a digital video camera and analyses facial characteristics like the distance between eyes, nose, mouth, and jaw edges. These measurements are broken into facial planes and retained in a database, further used for comparison.Then, the system creates a template on the database for that person to compare the data for further uses.



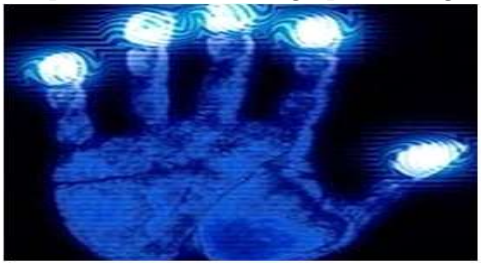
*4. Retina Recognition*

Retina recognition is a biometric modality that uses infrared technology to capture the unique patterns of an individual's retina blood vessels. As an internal organ of the eye and protected from external environments, retina recognition is recognized as a reliable biometric authentication system.



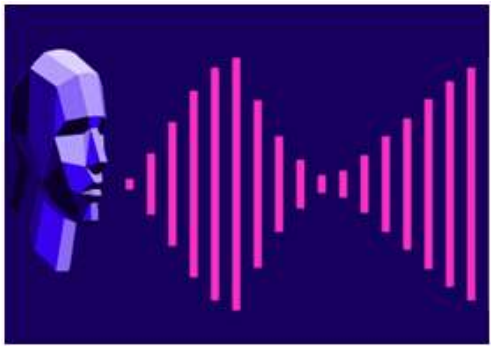
*5. Hand Geometry*

Hand geometry recognition works with the shape of a person's hand characteristics. The hand geometry reader measures an individual's hand in several dimensions. Then, it stores the data for further comparison and measurement. It is mostly popular for its comfort, easiness, and public acceptance. Nevertheless, this system isn't very unique as like face or fingerprint recognition.



*6. Voice/Speech Recognition*

Voice/speech recognition is a combination of physiological and behavioral biometrics. It works with speech patterns that capture by speech processing technology. This system analyzes the fundamental frequency, nasal tone, cadence, inflection, etc. to recognize a person's speech. It is also known as "automatic speech recognition" (ASR), "computer speech recognition", "speech to text" (STT) etc.



*7. Palm Vein Recognition*

Pam vein recognition is one of the physiological types of biometrics that analyzes the unique patterns of the vein in the palms of an individual's hand. As like other biometric technology, at first it captures an image of the individual's palm, then analyze and process the vein data and store it for further comparison.

*8. Signature Recognition*

Signature recognition is one of the behavior *types of biometrics*. It works in two ways, static and dynamic. In this recognition system, the way an individual signs his name is counted as the characteristic of that person. It is based on metrics like number of interior contours and number of vertical slope components.

*9. Handwritten Biometric Recognition*

Handwritten biometric recognition is close to signature recognition and undoubtedly a behavior type of biometrics. It is a system of recognizing a person by his handwriting procedure. As like signature recognition it can also be categorized in two parts, static and dynamic.

*10. DNA Recognition*

DNA biometric is quite different from standard biometric modalities. It requires tangible physical sample and couldn't be done in real time. It is a recognition technology with very high accuracy.

*11. Ear Biometrics*

Ear biometrics is one of the most accurate types of biometrics to authenticate a person. Some believe that it provides more accurate result than fingerprint and will be the future of biometrics.


*12. Gait Recognition*

Gait recognition is a biometric technology method that analyzes an individual by how the way they walk like saunter, swagger, sashay etc. This technology is highly suitable for surveillance analysis.

*13. Odour Recognition:*

A quite strange biometric method compare to fingerprint or face recognition system. It works with the body odor of an individual for verification and identification.

*14. Typing/ Keystroke Recognition:*

Typing or keystroke recognition is one of the behavioral types of biometrics. It analyzes the way a person press the keys to type something. The keystroke dynamics uses the data of the manner and the rhythm an individual types on a keyboard.

*15. Finger Vein Recognition*

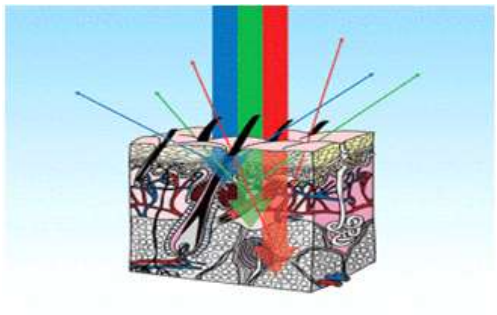
Finger vein recognition is a method of biometric identification that works with the patterns of finger vein underneath the skin's surface. It matches with the vascular pattern of an individual's finger to previously acquired data.

*16. Eye Vein Recognition*

Eye vein recognition is a type of biometric method that helps pattern-recognition techniques to video images of the veins of an individual's eye. The veins are complex and unique that makes it one of the most accurate biometric authentication systems.

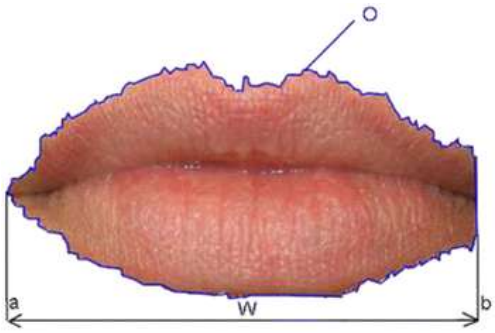
*17. Skin Reflection*

Skin reflection biometric is quite uncommon biometric modality. In this system, several LEDs send light at various wavelengths into the human skin and photodiodes read the scattered light that is analyzed to perform the authentication.



*18. Lip Motion*

Lip motion technology analyzes a person's lip motions and creates a password according to the activity. Then it verifies the data with previously stored data with new lip motion data. Compared to other biometric modalities lip motion technology is quite a new modality.

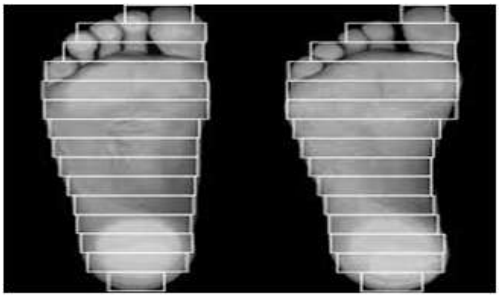



*19. Brain Wave Pattern*

Brainwave recognition is a unique and surprising biometric modality. It measures the signals given by the brain to create a unique individual feature set on the database. Some researchers believe that it is a hundred percent accurate biometric identification process.

*20. Footprint And Foot Dynamics*

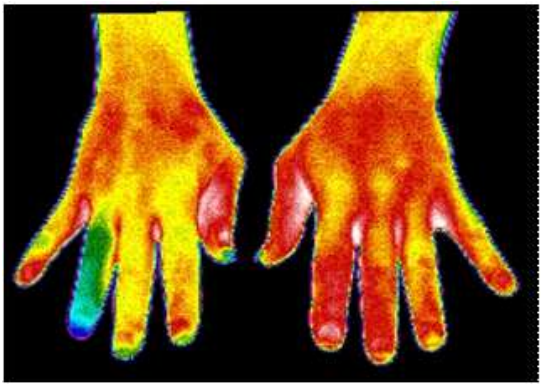
As like fingerprint, finger vein, palm vein, iris and retina recognition, footprint can also be a unique physiological type of biometric identification. It is relatively new biometric identification system compares to other modalities. This system captures the footprint based biometric identification characteristics of an individual, then store the data in a database for further comparison to verify the person.



*21. Thermography Recognition:*

Facial thermography uses Infrared cameras to capture the flow of blood beneath the skin of an individual. Then, the underlying pattern generates a robust biometric characteristic for positive identification.

- This technology can be used to test "liveness" of an individual.
- These are the common types of biometrics available right now.
- As researchers are working hard to find more and more accurate biometric modalities to make this system more comfortable for the users, we are going to get a lot more solutions in coming future.



**Components of biometric devices include**

- A reader or scanning device to record the biometric factor being authenticated.
- Software to convert the scanned biometric data into a standardized digital format and to compare match points of the observed data with stored data
- A database to securely store biometric data for comparison.
- Biometric data may be held in a centralized database, although modern biometric implementations often depend instead on gathering biometric data locally and then cryptographically hashing it, so that authentication or identification can be accomplished without direct access to the biometric data itself.

**Uses of biometrics in today's society**

Companies and government agencies are increasingly using biometrics systems in a variety of applications including identification, personalized experiences or surveillance. The uses for biometrics are vast and benefit not only commercial organizations, but also governmental agencies and service providers. These groups are turning to biometrics for identification or surveillance purposes

- These applications are predominantly introduced by national authorities, as the biometric enrollment and management of a population›s biometric data call for a tightly regulated legal and technical framework.
- Law enforcement biometrics is referring to applications of biometric systems which support law enforcement agencies. This category can include criminal ID solutions such as Automated Fingerprint (and palm print) Identification Systems (AFIS). They process, store, search and retrieve, fingerprint images and subject records.
- Today Automated Biometric Identification Systems (ABIS) can create and store biometric information that matches biometric templates for face, finger, and iris.
- Live face recognition - the ability to do face identification in a crowd in real-time or post-event - is also gaining interest for homeland security – in cities, airports and at borders.
- Biometrics and border control-This application has been most widely deployed to date is the electronic passport (e-passport), particularly with the second generation of such documents also known as biometric passports, on which two fingerprints are stored in addition to a passport photo.
- Biometrics provides irrefutable evidence of the link between the document and its holder.
- Biometric authentication is done by comparing the fingerprint(s) read with the fingerprints in the passport micro-controller. If both biometric data match, authentication is confirmed.

- Identification, if necessary, is done with the biographic data in the chip and printed.
- Another advantage of this solution is that it speeds up border crossing through the use of scanners, which use the principle of recognition by comparison of the face and/ or fingerprints.
- In addition, many countries have set up biometric infrastructures to *control migration flows* to and from their territories.
- Fingerprint scanners and cameras at border posts capture information that help identify travelers entering the country in a more precise and reliable way. In some countries, the same applies in consulates to visa applications and renewals.
- Data acquisition requires reliable equipment to ensure optimum capture of photos and fingerprints, essential for precision during comparison and verification.
- Healthcare and subsidies-The health insurance card is used in hospitals, pharmacies and clinics, to check social security rights whilst protecting the confidentiality of personal data. Checks are performed using terminals with fingerprint sensors.
- Civil Identity, population registration and voter registration-AFIS databases (Automated Fingerprint Identification System), often linked to a civil register database, ensure the identity and uniqueness of the citizen in relation to the rest of the population in a reliable, fast and automated way. They can combine digital fingerprints, a photo and an iris scan for greater reliability.
- Civil identity and population registration-India's Aadhaar **project** is emblematic of biometric registration. It is by far the world's largest biometric identification system and the cornerstone of strong identification and authentication in India.
- Voter registration-Biometrics can also be key for the "one person, one vote" principle. To know more on this aspect please visit our web dossier on biometric voter registration

**Why is biometrics controversial?**

- Biometrics offer many advantages (to strongly authenticate and identify) but is not without controversy. This is linked to privacy and citizen's ability to really control information about him/her.
- The use of biometric data to **other ends** than those agreed by the citizen either by service providers or fraudsters. As soon as biometric data is in the possession of a third party, there is always a risk that such data may be used for purposes different to those to which the person concerned has given their consent
- There may thus be cases of unwanted end use if such data is interconnected with other files, or if it is used for types of processing other than those for which it was initially intended.
- The risk on the biometric database and data presented for biometric check. The data can be captured during their transmission to the central database and fraudulently replicated in another transaction.
- The result is a person losing control over their own data which poses major risks in terms of privacy.
- In practice, data protection authorities seem to give preference to solutions which feature decentralized data devices.

**Benefits of using biometrics in hospitals and healthcare**

*Increase patient safety*

Secure identification through biometric devices brings patient safety to a higher level. Errors are eradicated in the identification of the patient thus avoiding the appearance of adverse events of all types for this cause. Biometric identification through fingerprint scanner can also save lives, as it allows finding out the ailments or allergies of certain patients in cases of emergency.

*More comfort for the patient*

The patient can access health services in a much more comfortable way than before since he does not need to carry anything physical with him or memories the data that is necessary for his identification. In turn, the patient does not have to permanently wear uncomfortable bracelets that can cause skin irritations or other inconveniences.

*Greater satisfaction with the service*

Improved care processes (for example, reducing the time of all processes requiring patient identification) and more efficient and error-free information management, the quality of service

provided to the patient is improved, and patients who perceive favorable change increase their degree of service satisfaction.

*More confidence and peace of mind*

Patients welcome the use of the biometric system as a way to protect themselves against fraud and safeguard their identity. The new identification system guarantees the total privacy of access to the patient's confidential information respects his rights and complies with current legislation that supports the patient. The patient gains in tranquility and increases his level of confidence in the security of his personal data and the treatment of the same by the institution and the staff.

*Improve your quality of life*

By receiving better medical care free of medical errors and inconsistencies in the Electronic Medical History, the patient receives more successful treatments and, consequently, improves his quality of life.

*Increased safety for health personnel*

All health personnel benefit from greater security in the processes that require their unequivocal identification, both in the control of physical access to the facilities and in the logical access to the implanted information systems. Biometric machine eliminates the possibility of theft or fraudulent use of your passwords, as well as the possible loss of your identification cards.

- *More comfort in identification for health personnel*

Healthcare personnel do not need to memorise their passwords or carry identification cards to access hospital facilities or hospital management systems and patient information. Whenever you need to identify a patient, you can do it with great convenience, speed and agility through fingerprint scanner. Administrative staff can more quickly process such as filiation, admission or discharge of the patient.

## Conclusion

The future portends a new era of biometrics. Advances to the technologies will make them more attractive to healthcare organizations. Decreasing costs will make biometrics a more palatable move. Other technologies like artificial intelligence will, in turn, also give biometrics a boost. But mainstreaming biometrics faces a variety of challenges. These include privacy, people, cost and interoperability. There's a lot of ground to cover in so experts at biometrics technology vendors, consulting firms and healthcare provider organizations shared their views on the road ahead. Biometrics can be used by various organizations to increase security levels and protect their data and patents. Biometrics although interdisciplinary, it is not the eventual choice of the masses due to its high cost and legal considerations like privacy issues. Without doubt the age of biometrics is here and the technology will directly affect everyone over the next few years.

## References

1. Davide Maltoni, Durio Maio, Anil K. Jain, Salil Prabhakar, Handbook of Fingerprint Recognition, 2002.
2. http://www.oemupdate.com/experts-column/top-7-benefits-of-using-biometrics-in-healthcare-centre/.
3. https://biometrictoday.com/types-of-biometrics/.
4. https://blogs.thomsonreuters.com/answerson/biometrics-technology-convenience-data-privacy/.
5. https://searchsecurity.techtarget.com/definition/biometrics.
6. https://www.biometricsinstitute.org/definition-of-biometrics.
7. https://www.biometricsinstitute.org/types-of-biometrics.
8. https://www.biometricupdate.com/201205/biometric-terms-and-technique-classifications.
9. https://www.gemalto.com/govt/inspired/biometrics.
10. https://www.healthcareitnews.com/news/biometrics-entering-new-era-healthcare.
11. J.G. Daugman. High confidence visual recognition of persons by a test of statistical impedance. IEEE Transactions on Pattern Analysis and Machine Intelligence, 1993 Nov;15(11):1148-61.
12. Ruud M. Bolle, Jonathan H. Connell, Sharath Pankanti, Nalini K. Ratha.

Community and Public Health Nursing
Vol. 3 No. 3, September - December 2018
DOI: http://dx.doi.org/10.21088/cphn.2455.8621.3318.7

# Maintenance of Physical and Mental Health in Workplace Environment

**G. Jyothsna**

**Abstract**

This article depicts and critically evaluates physical and mental health at different workplace environments. Several employees are exposed to work related physical exhaustion and mental agony and stress due to improper workplace environment like unventilated industrial buildings, poor infrastructure, improper facilities in offices, exposure to industrial wastages, environmental contaminants and lack of physical and mental health facilities. Employees working under such conditions with poor air quality, poor infrastructure management, heavy workload, lack of personal protective equipment and unhealthy management face physical and mental health related problems. Necessary precautions have to be taken in hazardous and stressful conditions. In relation to physical health; the hazards, occupational diseases, health screening and services, prevention and control strategies are dealt in length and breadth. Aspects related to mental health include causes, risk factors, consequences, warning signs and promotion of mental health in workplace environment. To tackle physical and mental health issues maintaining a healthy lifestyle is very essential for the productivity, quality of life, physical and mental wellbeing.

**Keywords:** Physical Health; Hazards; Mental Health; Workplace; Healthy Lifestyle.

## Introduction

It is very clear that a person who works for any organization spends most of his time at workplace than at home and the environment of the workplace plays a reassuring role in the promotion of wellness among the employees within the organization [1]. There is very close relationship between mental and physical happiness either directly or indirectly. Physical health has a lot of impact on mental health and mental health also has same effect on physical health too [2]. If anyone suffers from physical illness, it may lead to mental health problems such as depression and schizophrenia. In case anyone suffers from mental illness it may lead to high blood pressure and heart attack [3]. A healthy lifestyle creates wellbeing both physically and mentally. A healthy lifestyle is an integral component in the promotion of both physiological and psychological wellbeing of the employees. So, maintenance of both physical and mental health is vital which can be facilitated through healthy environment at work and home [4].

**Author's Affiliations:** Lecturer, MSc Nursing, Dept. of Child Health Nursing, JMJ College of Nursing, Hyderabad, Telangana 500018, India.

**Corresponding Author: G. Jyothsna,** Lecturer, MSc Nursing, Dept. of Child Health Nursing, JMJ College of Nursing, Hyderabad, Telangana 500018, India

**E-mail:** josetalli@gmail.com

**Recived on** 24.10.2018, **Accepted on** Not Provided

## Definitions

### *Health*

Health is defined as a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity [5].

### *Physical Health*

Physical health means a person who is healthy and fit to perform the daily activities without any pressure [6].

### *Mental Health*

Mental health can be defined as any person recognize his or her own strengths and cope up with pressure in daily life, work effectively and fruitfully, so he or she will be able to contribute to his or her community [7].

*Workplace Environment*

There are two components in workplace environment i.e. physical and behavioral. Physical component consist elements that are related to the occupiers where the employees connect themselves to their office environment while behavioral component needs how the employees connect with each other in their office [8].

## Maintenance of Physical Health in Workplace Environment

### *Health Problems in the Workplace*

Generally, health of people is affected according to their positions and work in the workplace. It might be because of drinking alcohol, smoking, over eating and less physical activities etc. There could be many reasons for health problems in the physical work environment [9]. Here are some of them.

- *Physical*- e.g., sound, radiation, tremor, extreme heat, nanoatoms
- *Chemicals*- e.g., diluters, insecticides, asbestos, carbon monoxide, silica
- *Ergonomic*- e.g., extreme force, difficult posture, hefty lifting, forced inactivity/ staying long in the same place.
- *Mechanical*- e.g., machine dangers associated to cranes [10]
- *Biological*- germs, viruses, plants or animal handlers [11]

In order to stop these dangers or threats people should use personal protective equipment such as helmet, face shield, mask, gloves, apron, goggles, pain spray respirator, ear muffs along with safety belts [12].

### *Psychosocial Hazards*

The psychosocial hazards experienced by the workers due to stress are

- Too much sleeping
- Using medicine without any prescription
- Intoxication
- Sadness
- Burden
- Frustration and recklessness (due to unfairness or injustice)

### *Common Occupational Diseases*

- Contagions- HIV, hepatitis B and C
- Cancer
- *Persistence respiratory infections:* silicosis, asthma [13] and bronchitis [14]
- *Skin diseases:* malignant melanoma from sun exposure, or dermatitis
- *Physical neurologic disorders*- noise-induced hearing loss
- *Reproductive problems:* infertility and miscarriages resulting from contact with chemical or biological agents; and many others.
- *Musculoskeletal disorders:* repetitive strain injuries, traumatic injuries [13]
- Heart diseases
- Hopelessness [14]

*Employee Health Screening*

- *Pre-employment health checks:* Offer health check before joining in any organization.
- *Health surveillance:* Health checkups while working for any company in hazards in any workplace.
- *Health checks/lifestyle assessment:* Here are some of the checks to be done while working for any company.
  - Smoking
  - Consumption of alcohol
  - Obesity
  - High blood pressure
  - High cholesterol
  - High blood glucose
  - Diet
  - BMI
  - Glucose level in the blood [15]

### *Occupational Health Services*

Apart from health screening, the basic occupational health services include

- Continuous health records for employees.
- Train workers to use first aid kit.
- Overall health care, healing and recovery services.

- Vaccination against endemic or work-related infectious diseases [13]

***Prevention and Control Strategies***

There are five steps to prevent and control to maintain mental and physical health in any workplace.

*1. Identifying Hazards and those at Risk*

The very first step is identifying the risks and problems in the workplace

For example:

- Slippery and wet staircases fall down and hurt yourself.
- Noisy places- hearing loss

*2. Prioritising Risks*

Assess the dangers or its risks based on the priority.

*3. Deciding On Preventive Action*

Decide regarding the preventive measures to be taken to reduce the risk. Identify whether these preventive measures protect the employees' health from hazards or its risks.

*4. Taking Action*

To execute preventive methods in the workplace.

*5. Monitor And Review*

To watch and check the dangers again and again to eliminate the maximum risks [16].

***Healthy Lifestyle***

*1. Physical activity*

At least thirty minutes of physical exercise is very necessary to maintain physical balance. There are some vital components of regular physical exercise.

- Reduce the risk factors of heath diseases
- To maintain standard muscle strength.
- To get flexible body and reduce the risk of injury.
- Decrease body fat
- Relief from the hyper tension
- Lower the blood pressure of people
- Reduces blood pressure in people
- Drops the risk of diabetes mellitus

Other components of physical activity are

- *Agility:* move direction time to time
- Balance
- *Coordination:* skill of using senses like sight and hearing.
- *Speed:* skill of moving quickly in short time.
- Strength [17]

*2. Yoga and meditation*

- Progresses coordination
- Develops flexibility and power
- Reduce stress level
- Balance blood pressure levels
- Improves metabolism [18]

*3. Nutrition*

Take a balanced diet which includes all the food groups along with eight to ten glasses or nearly 2litres of water each day.

- Proteins- meat, milk, beans and peas
- Carbohydrates- sugars and starches
- Fats
- Sodium, iron and phosphorus- milk and green vegetables
- Vitamin C- fresh vegetables, oranges and lemons
- Vitamin
- D- milk and cod liver oil

4. Sound sleep

5. Give up unhealthy habits such as smoking, alcohol, and drugs [11]

**Maintenance of Mental Health in Workplace Environment**

Mental disorder denotes changes in thinking, behavior, stress in problem solving, functioning in social and family activities [19]. There are mainly two types of mental illnesses those are depression and anxiety will lead disability among the employees in the work environment. Researchers found that depression is affecting three hundred million employees whereas anxiety is affecting two hundred and sixty employees [20].

***Common Causes of Mental Illness at Work***

The common causes which leads to mental illness at the work environment are

- Not able to cope up with stress
- Faulty job roles
- Lack of command over work
- Not able to manage work load at work and home
- Lack of interaction with management
- Lack of cooperation among colleagues at work
- Uncertainty about job
- Boredom in work
- Insufficient job opportunities [21]

***Risk Factors of Mental Illness in Workplace***

The associated risk factors of mental illness differs in every workplace but commonly include

- Insufficient health and safety schemes
- Lack of communication
- Improper communication
- Old management practices
- Not able to take part while taking decisions
- No command over one's area of work.
- Inadequate support for employees
- Busy working hours
- Indefinite tasks or unsuitable tasks for the person's abilities [22]
- Not appropriate roles
- No clarity in their jobs
- Insufficient knowledge to perform their work [23]

***Psychosocial Risks in the Workplace***

The psychosocial factors are the most difficult factors which stop not only the health of employees but also development of the organization. Here are 13 psychosocial risks.

*1. Psychological Support*

Psychological support is the main aspect of mental health concern at work. If there is not enough cooperation among the workers while working in any organization there will be chances for emotional withdrawal and may lead to less productivity. It causes stress in employees that may intern leads to sever tiredness, headache and nervousness

*2. Organizational Culture*

Culture plays vital role in any organization. Unless there is no trust, fairness and honesty they will certainly lead to stress.

*3. Clear Leadership And Expectations*

In order to lead any company in a successful way there must be a good leader. Effective leadership always has the main qualities of morality, faith and flexibility at workplace and they will create psychological well beings in organizations.

If the leader is not perfect in his duties it will create stress and conflicts among the workers.

*4. Civility And Respect*

Polite behavior and respect plays a vital role that increases pleasure, fairness, teamwork, good relationship and decreases absenteeism whereas lack of it projects disrespect, disputes and resignation of job. One of the disrespectful conducts is bullying.

*5. Psychological Competencies And Requirements*

A satisfied job is always accompanied with emotional health and it gives immense self- esteem, self- confidence that further leads to job satisfaction and provide ample of success to the organization. In case it lacks it may further leads to powerlessness and lowers self- confidence in employees.

*6. Growth & Development*

Growth and development always have a lot of impact in any organization and they give chance to the employees to reach higher stages in their lives. If there isn't any growth it stops the skills of employees and leads to agony.

*7. Recognition And Reward*

Every human being work on stimulus based and search for the rewards for their own work. It always gives a lot of confidence in anyone to improve their self-esteem in their own field. If the person is not rewarded for his or her work they may lose interest and passion over the work and it leads to psychological illness.

*8. Job Involvement*

It is well known fact that job involvement is a must. All employees should have commitment towards their responsibilities because it gives pleasure as well as relief from the stress or else it ends with powerlessness and tension.

*9. Workload Management*

Most of the companies are busy with productions so people have to work for a long time. The provided time is not sufficient for completion of gives tasks so employees feel over burden while working. To complete the work it is necessary that companies must support the employees.

*10. Engagement*

Employees should always engage in their work. Once they get encouraged they will be enthusiastic, cheerful, focused and committed to work.

*11. Balance*

Every employee should balance time at work and time. If any employee imbalance between home and work it may lead to mental stress, anger, and dissatisfaction. Once the person is not able to cope up with stress, it leads to high blood and pressure, cholesterol and mental illness.

*12. Psychological Protection*

Healthy and safe workplace is always encourages psychological protection and avoids risks disentanglement and psychological agony.

*13. Protection Of Physical Safety*

Employee's physical safety is very important in any organization in the work environment. It comprises training, plans, practices, replying to the event at the risk. If there is no safety related to physical it leads to injuries and emotional illness.

***Issues that Affect Mental Health in the Workplace***

There are many issues that affect the employees in the workplace. It includes

- Humiliation and misjudgment
- Pressure
- Effort versus reward
- Presenteeism
- Job Exhaustion
- Violence
  - Harassment
  - Bullying
  - Mobbing
- Substance abuse [24]

**Types of Mental Illnesses at Workplace**

The common mental illnesses at workplace are

- Mood disorders: Depression and bipolar disorder
- Anxiety disorders
- Psychotic disorders: Schizophrenia [25]

**Effects of Mental Health Problems in the Workplace**

Here are some of the effects of mental health at work place.

- Taking many leaves (due to short periods of sickness)
- Emotionally ill health (depression, stress, burnout)
- Physical infections
- Poor performance at work
- Too much error rate
- Met accidents
- Lack of decision making
- No control over work
- Lack of social relationship
- Poor motivation and less commitment to work
- Exhaustion
- Lack of time management
- Tension [26]

***Warning Signs of Mental Illness***

There are many symptoms of mental illness that may be found in any employee at workplace.

- Continuous pain
- Nonstop discouragement or dissatisfaction
- Oversleep or under sleep
- Pessimistic

- Failure in work performance
- Extreme anger
- Work and familial issues
- Physical illness

***Work Related Stress***

Psychological illness mainly comes from the over workload at work. If the work is too much and the person is not able to mage with it she or he will be under pressure. It may vary from person to person [23]. If the person performs well that stress is called positive stress or the person cannot cope up and get pressure it is termed as negative stress.

***External Effects of Stress***

The external or physical effects of stress are

- Headache
- Muscle pain
- Chest pain
- High heart rate
- High blood pressure
- Lack of immunity
- Extreme fatigue
- Difficulty while sleeping
- Digestive problems
- Increased glycemic levels
- High cholesterol

***Internal Effects of Stress***

The internal effects of stress include

- Forgetting
- Tension, distress and fear
- Restlessness, prickliness
- Mood changes
- Extreme outbursts of anger
- Not able to focus or distracted
- Separation or feel lonely
- Cannot perform the duties
- Lack of coordination between eye-hand
- No co-ordination between eye and foot [27]

***Simple Ways to Deal with Work Related Stress***

- Begin your day with high spirit.
- Have positive attitude.
- Be clear about your work.
- Don't argue with colleagues and have a good relationship
- Maintain time and organize well
- Don't get confused and be comfortable
- Don't do many tasks at a time.
- Try to complete extra work in your free time to manage stress.
- Be flawless at work
- Sometime listen to music if you feel stressed [28]

**Mental Health Promotion in the Workplace**

The promotion of mental health at the workplace

focuses on the following aspects to prevent the employees with mental illness.

*1. Mental Health in the Work Place*

Mental health denotes emotional, psychological and social well-being of an individual. It is subjective the way a person think, feel and act. It is a duty that the organization has to look after to promote positive and mental health in the work environment to improve the mental health of the employees. There must be awareness programmes in the organizations on mental health [29].

*2. Understanding Mental Illness*

It is very significant to know what mental illness is and have in-depth knowledge of causes, risk factors and signs of mental illness in workplace environment. If we are aware of it, it can be treated easily.

There is known fact that family history also one of the main causes that a person can be affected irrespective of age, social background, ethnic origin or intellectual level. Mental illness differs from person to person. Treatment always will be given according to the severity of mental condition, so there are chances for total recovery from mental disorder.

***3. Management of Mental Disorders at Workplace***

*A. Culture of Openness*

Cultural openness can be achieved through conducting meetings on stress management and mental illness whenever the employees have flexible time and inculcate positive thinking among the employees. Motivate the employees to get the works done time to time. Give ample of information about mental health day and programmes related to it.

*B. Good Communication Strategies*

Employees may encounter mental health issues at any time in the organization. If they encounter any problem it is the duty of the organization to make changes according to the needs of the employees. Moreover provide the guidance or counselling if the employees need at any time. There have to be special sessions for the employees who are affecting with mental illness.

*C. Reasonable Adjustments*

We do notice that roles of the employees will change time to time in the organization so it is very vital to make the person adjust who has mental illness in the organization. It includes

- Rotation of work
- Dividing the work among the employees
- Relocate the area of work

*D. Managing Physical Symptoms*

Since the individuals have got problem of mental illness, there are some physical problems. Here are some of them.

- Uncertain idea
- Discomfort, tremors
- Symptoms of heart attach
- Sleep too long
- Fatigue
- Late to work
- Ineffective work performance at certain times of the day

Strategies to deal with physical manifestations include

- Give some breaks in the middle of the work and sanction forced leaves for every six months or ask them to work from according their convenience.
- Provide some easy tasks.
- Allow them to get medical check-ups in the middle of the work.
- There have to be some speech recognition software to work on system

*E. Managing Difficulties with Emotions*

Most of the individuals with mental syndromes show problems with emotions such as

- Frustration
- Stress
- Anxiety
- Anger
- Agitation
- Switching mood

Strategies that should be considered to manage emotions are

- Appreciate and give constructive feedback
- Encourage and praise them
- Avoid arguing and unhealthy discussions
- Give respect to a person who has problem of mental illness
- Give some breaks during work hours
- Focus on stress management
- Prevent risks to health and safety (self-harm and harm to others)
- Give chance to communicate with either doctors or family members during work time.

*F. Health and Safety of a Person with Mental Illness*

The risk factors associated with higher risk of suicide is due to

- Feeling of hopelessness
- Feeling of helplessness
- Earlier suicide trials
- Severe substance abuse

Strategies to deal with suicidal tendency include

- Let the attempters know that there are people to help them.
- Seek if they already decided and planned. You are cared about them and offer help.
- If you find anyone who has got mental illness just provide counselling with the help of trained counsellors.
- In case they are ready to end their lives let them take immediately to the psychiatrist at the local hospital.
- Don't leave the patient unless the professional help has given.

*G. Managing Individuals at Risk of Harm to Others*

- Stay peaceful
- Make the situation calm by offering any beverages to get their trust.
- Keep up a reasonable distance
- Try to use some commands if they are trying to harm you.
- Don't hold they firmly if they are clam
- Consider pressures seriously.
- Communicate with counsellors and police for help[25]

***4. Create a Healthy Workplace***

There are mushrooms of organizations and they are quite different from one another. It is primary duty of all people including CEOs, managers, and other employees to maintain their own mental health. It can be achieved only when the organization provides good environment conditions at work place.

*Features of a Healthy and Safe Workplace*

- Reduces stress level
- Higher reliability
- Recognize and eliminate the obstacles related to mental health
- Building a culture of openness
- Career and personal development [30]

*Maintaining Mental Health in the Work Environment*

There are many types of techniques to maintain mental health in the workplace of the organization. It includes

*A. Good Atmosphere*

It is very important to have congenial atmosphere to do any work effectively and get it done easily. There are certain characteristics mentioned below to maintain good atmosphere at work place.

- Respect
- Social association
- Acknowledgment of work
- Rewards and awards
- Incentives

*B. Living Wages*

There must be minimum wages to be paid for the meeting day to day life needs of employees that motivates the individuals to dedicate to the work.

*C. Accomodation*

It is minimum concern of any organization to provide accommodation to physical or mental disability persons until they recovered from the illness.

*D. Health and Wellness*

It is very necessary to have health insurance policies for each and every employee in the organization. There should be some health campaigns on insurance policies and what they cover.

*E. Open Access to Communication*

It is a must to have free flow of communication among the employees without any discrimination in their designations from CEOs to security to achieve a lot within the organization.

*F. Accountability- Employee and Management*

In order to reach success and targets in the organization employees must be accountable for their own work that is assigned to them. There should be freedom to employees get feedback for their work.

*G. Work-Life Balance*

Each and every employee must have freedom at work place for communicating with family, friends and relatives.

*H. Fitness*

As we all know health is wealth. In order to be fit do some exercise to keep oneself healthy [31].

*Advantages of a Healthy Work Environment*

- Reduce stress
- Fewer injuries
- Gives job satisfaction
- Stability in work life
- Very good social relationships
- Increased team work
- Improved dedication towards work [32]

*5. Resources*

There are many NGOs and some government give a lot of information about resources. They do give enough information related to mental illness and health care.

- Employment Services and Schemes
- National Health Schemes
- Employee Assistance Programs (EAPs)
- Mental Health Insurance [33]

**Legal Responsibilities**

*Discrimination Act*

According to The Disability Discrimination Act 1992, the employees should not be discriminated or harassed concerning mental illness.

*Work Health and Safety Legislation (Whs Act, 2012)*

This Act focuses on the protection and safety of the employee's physical and mental health at the workplace.

*Privacy Act (1988)*

Privacy and confidentiality of personal information regarding the mental illness of employees should be maintained. It should not be disclosed without the consent of the employees.

*Fair Work Act (2009)*

It's a Commonwealth industrial law to safeguard the employees from argumentative actions regarding their mental health status at the workplace.

*Action Plan*

In order to get rid of this mental illness at the work place there is an action plan. The 3 phases of action plan approach are

1. Recognize significant areas of action
2. Put forward action
3. Evaluate and monitor outcomes

**1. Identify Priority Areas of Action**

*i.. Raising Awareness of Mental Health Issues*

- Open communication
- Training
- Reachable facts
- Mental health days or events
- Assistance- (EAPs) Employee Assistance Programs, help lines, referrals

*ii. Reducing Stigma*

*iii. Policy Development and Implementation*

- Bullying at work
- Discrimination
- Equal opportunity
- Leave provisions
- Coming back to work
- Performance management
- Work health and safety
- Employee Assistance Programs (EAPs)

**iv. Workplace Risk Factors**

*2. Implement Actions*

Plans to the priority areas of action are

- Plan schedules for mental health programs at work
- Handling the complications of employees with mental illness
- Carry out firm policy development
- Controlling the influence of workplace risk factors

*3. Review and Monitor Outcomes*

Set a target to evaluate and monitor the consequences of mental health strategies together with short-term and long-term executed activities [30].

**Work-Life Balance**

*At Work*

- Keep achievable goals daily and make a list of them.
- Make your work clear by dividing into parts.
- Request for the flexibility- work from home
- Be honest at workplace [34]
- Maintain healthy social relationship and avoid conflicts

- Don't be overload with work especially in the weekends
- Try to walk after lunch

*At Home*

- Use support from family and friends
- Be active by doing exercise
- Avoid smoking, consuming alcohol and drugs [35]

**Tips for Mental Health**

*Mental Fitness*

- Concentrate only on one work at time
- Avoid using mobile phone while walking, talking with friends
- Give a break for your worries
- Enjoy doing your free time activities
- Set pleasurable goals like reading novel, talk to friends
- Be expressive
- Enjoy cooking, cooking, playing, walking and spending time with family [27]

*Healthy Lifestyle*

➢ Physical Activity

If you do 30 minutes exercise a day gives

- Emerges positive emotions
- Increases optimistic relationships among the employees [36]
- Develops concentration
- Improves positive energy and mood
- Decreases sleeping disorders
- Reduce level of stress and tension
- Lowers anger
- Gets relief from depression and anxiety [37]

➢ *Yoga and Meditation*

- Swings bad mood into good mood
- Stray calm and balance emotionally
- Decrease stress and depression [38]

➢ *Nutrition*

Ensure yourself to have a very balanced diet with combination of fruits, vegetables, cereals, dairy products and meat [37].

➢ *Tobacco cessation*

➢ Attending wellness programs [39]

**Conclusion**

In conclusion, it is apt to state that occupational health and safety is the right of employees whether they work in an office, industry or in any other environment. The current international labor laws have to be implemented to curtail over ambitions of the employers to safeguard the human rights in the workplace environment and facilitate in the reduction of accidents, injuries and fatalities either physical or mental. Therefore, workplace environment and occupational standards have to be improved. It is the need of the hour to maintain the highest degree of precautions in the social well-being of the employees both physically and mentally. It is recommended that preventive measures have to be practiced in addition to the implementation of occupational safety and health international policies so as to enable the employees and employers families' well-being which in turn enhances the good workplace environment, occupational health and create global preventive measures to reduce the physical and mental workplace hazards.

**References**

1. Debbie L, Stoewen. Wellness at work: Building healthy workplaces. The Canadian Veterinary Journal. 2016;57(11):1188.
2. Julius Ohrnberger, Eleonora Fichera, Matt Sutton. The relationship between physical and mental health: A mediation analysis. Social Science & Medicine. 2017;195:42-43.
3. Rajgopal T. Mental well-being at the workplace. Indian Journal of Occupational and Environmental Medicine. 2010;14(3):63.
4. Shona Sturgeon. Promoting mental health as an essential aspect of health promotion. Health Promotion International. 2006;21(1):36.
5. Constitution of WHO: principles - World Health Organization. Available from: www.who.int/about/mission/en/.
6. Physical Health Definition and Simple Test - NORMALBREATHING.com Available from: https://www.normalbreathing.com/e/physical-health.php.
7. WHO | Mental health: a state of well-being. Available from: www.who.int/features/factfiles/mental_health/en/.

8. Asigele Oswald. The Effect of Working Environment on Workers Performance: The Case of Reproductive and Child Health Care Providers in Tarime District. 2012 November. Available from: http://ihi.eprints.org/1658/1/Asigele_Oswald.pdf.
9. Protecting workers' health - World Health Organization. Available from: www.who.int› News› Fact sheets› Detail 2017.
10. WHO Healthy Workplace Framework and Model: Background Document and Supporting Literature and Practices. Available from: http://www.who.int/occupational_health/healthy_workplace_framework.pdf.
11. John Ridley and John Channing. Safety at work. Burlington: An imprint of Elsevier. 2007;6:425,429,430,493. Available from: http://www.ssu.ac.ir/fileadmin/templates/fa/daneshkadaha/daneshkade-behdasht/behdashte_herfai/upload_behdashte_herfaie/book/Safety_at_Work_6E.pdf.
12. Peter Hurst, Peter Kirby. Health, Safety and EnvironmentHealth,SafetyandEnvironment:ASeries of Trade Union Education Manuals for Agricultural Workers. International Labour Organization. London Publications of the International Labour Office. 2006:60,80,96,112,162,184. Available from: http://www.iuf.org/w/sites/default/files/2004%20Health,%20Safety%20and%20Environment%20-%20Manuals%20for%20Agricultural%20Workers.pdf.
13. WHO Healthy Workplace Framework and Model: Background Document and Supporting Literature and Practices. Available from:http://www.who.int/occupational_health/healthy_workplace_framework.pdf.
14. Protecting workers' health - World Health Organization. Available from: www.who.int› News› Fact sheets› Detail 2017.
15. Employee health screening: health checks and why they're worth doing. Available from: https://fitforwork.org/blog/employee-health-screening-why-its-worth-doing/.
16. Prevention and control strategies - OSHWiki. Available from: https://oshwiki.eu/wiki/Prevention_and_control_strategies.
17. U.S. Department of Health and Human Services. Physical Activity and Health: A Report of the Surgeon General. Atlanta, GA: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion. 1996:6,7,21,22. Available from: https://www.cdc.gov/nccdphp/sgr/pdf/sgrfull.pdf.
18. Arndt Bussing, Andreas Michalsen, Sat Bir S. Khalsa, Shirley Telles, Karen J. Sherman. Effects of Yoga on Mental and Physical Health: A Short Summary of Reviews. Evidence-Based Complementary and Alternative Medicine. 2012:1.
19. What Is Mental Illness? - American Psychiatric Association. Available from:https://www.psychiatry.org/patients-families/what-is-mental-illness.
20. WHO | World Mental Health Day 2017. Available from: http://www.who.int/mental_health/world-mental-health-day/2017/en/.
21. Promoting positive mental health in the workplace - Acas. Available from: m.acas.org.uk/media/pdf/s/j/Promoting_Mental_Health_Nov.pdf.
22. WHO | Mental health in the workplace - World Health Organization. Available from: www.who.int/mental_health/in_the_workplace/en/.
23. Workplace mental health and wellness - Bodycare Workplace Solutions. Available from: Available from: https://www.bodycare.com.au/workplace-mental-health-and-wellness-article.
24. Mental Health - Psychosocial Risk Factors in the Workplace: OSH. Available from: http://www.ccohs.ca/oshanswers/psychosocial/mentalhealth_risk.html13 psychosocial risk factors.
25. Mental health in the workplace | Australian Human Rights... Available from: https://www.humanrights.gov.au/publications/2010-workers-mental-illness-practical-guide-managers/1-mental-health-workplace.
26. Mental health and work - World Health Organization. Available from: www.who.int/mental_health/media/en/712.pdf.
27. Workplace Stress - General: OSH Answers. Available from: www.ccohs.ca/oshanswers/psychosocial/stress.html.
28. Simple Ways to Deal With Stress at Work - Verywell Mind; 2018. Available from: https://www.verywellmind.com› Self-Improvement› Stress Management› Job Stress.
29. Mental health in the workplace | Acas. Available from: www.acas.org.uk/mentalhealth.
30. Booklet - Creating a mentally healthy workplace: A guide ... - Heads Up. Available from: https://www.headsup.org.au/docs/default-source/resources/bl1256-booklet---creating-a-mentally-healthy-workplace.pdf?sfvrsn=4.
31. Workplace Wellness | Mental Health America. Available from: www.mentalhealthamerica.net/workplace-wellness.
32. What is a Healthy Workplace? - Carleton University. Available from: https://carleton.ca/healthy-workplace/welcome/.
33. Support an Employee | Mental Health America. Available from: www.mentalhealthamerica.net› Programs › Workplace Wellness.
34. Work Life Balance | Mental Health America. Available from: www.mentalhealthamerica.net› Programs› Workplace Wellness.
35. Understanding-the-importance-of-mental-health-in-the-workplace-eBook.pdf. Available from:

https://www.healthshield.co.uk/wp-content/uploads/2018/03/.

36. Department of Health | Physical health 2006 health.gov.a› Education and Prevention › Mental Health › Publications.
37. A Guide to Promoting Health and Wellness in the Workplace. Available from: www.rph.org.nz/content/5d7fde89-b4d1-4f7f-ac28-ce806b5157bd.cmr.
38. Master these Geestelijke Gezondheidsbevordering. Effects of yoga on mental health in chronic physical conditions: A meta- analysis, 2014.
39. Mental Health in the Workplace | Psychology Today. Available from: https://www.psychologytoday.com/us/blog/nurturing-self compassion/201704/mental-health-in-the-workplace.

# Subject Index

## Author Index

# Guidelines for Authors

Manuscripts must be prepared in accordance with "Uniform requirements for Manuscripts submitted to Biomedical Journal" developed by international committee of medical Journal Editors

**Types of Manuscripts and Limits**

Original articles: Up to 3000 words excluding references and abstract and up to 10 references.

Review articles: Up to 2500 words excluding references and abstract and up to 10 references.

Case reports: Up to 1000 words excluding references and abstract and up to 10 references.

**Online Submission of the Manuscripts**

Articles can also be submitted online from http://rfppl.co.in/customer_index.php.

I) First Page File: Prepare the title page, covering letter, acknowledgement, etc. using a word processor program. All information which can reveal your identity should be here. use text/rtf/doc/PDF files. Do not zip the files.

2) Article file: The main text of the article, beginning from Abstract till References (including tables) should be in this file. Do not include any information (such as acknowledgement, your name in page headers, etc.) in this file. Use text/rtf/doc/PDF files. Do not zip the files. Limit the file size to 400 Kb. Do not incorporate images in the file. If file size is large, graphs can be submitted as images separately without incorporating them in the article file to reduce the size of the file.

3) Images: Submit good quality color images. Each image should be less than 100 Kb in size. Size of the image can be reduced by decreasing the actual height and width of the images (keep up to 400 pixels or 3 inches). All image formats (jpeg, tiff, gif, bmp, png, eps etc.) are acceptable; jpeg is most suitable.

Legends: Legends for the figures/images should be included at the end of the article file.

If the manuscript is submitted online, the contributors' form and copyright transfer form has to be submitted in original with the signatures of all the contributors within two weeks from submission. Hard copies of the images (3 sets), for articles submitted online, should be sent to the journal office at the time of submission of a revised manuscript. Editorial office: Red Flower Publication Pvt. Ltd., 48/41-42, DSIDC, Pocket-II, Mayur Vihar Phase-I, Delhi – 110 091, India, Phone: 91-11-22754205, 45796900, 22756995. E-mail: author@rfppl.co.in. Submission page: http://rfppl.co.in/article_submission_system.php?mid=5.

**Preparation of the Manuscript**

The text of observational and experimental articles should be divided into sections with the headings: Introduction, Methods, Results, Discussion, References, Tables, Figures, Figure legends, and Acknowledgment. Do not make subheadings in these sections.

**Title Page**

The title page should carry

1) Type of manuscript (e.g. Original article, Review article, Case Report)
2) The title of the article, should be concise and informative;
3) Running title or short title not more than 50 characters;
4) The name by which each contributor is known (Last name, First name and initials of middle name), with his or her highest academic degree(s) and institutional affiliation;
5) The name of the department(s) and institution(s) to which the work should be attributed;
6) The name, address, phone numbers, facsimile numbers and e-mail address of the contributor responsible for correspondence about the manuscript; should be mentoined.
7) The total number of pages, total number of photographs and word counts separately for abstract and for the text (excluding the references and abstract);
8) Source(s) of support in the form of grants, equipment, drugs, or all of these;
9) Acknowledgement, if any; and
l0) If the manuscript was presented as part at a meeting, the organization, place, and exact date on which it was read.

**Abstract Page**

The second page should carry the full title of the manuscript and an abstract (of no more than 150 words for case reports, brief reports and 250 words for original articles). The abstract should be structured and state the Context (Background), Aims, Settings and Design, Methods and Materials, Statistical analysis used, Results and Conclusions. Below the abstract should provide 3 to 10 keywords.

**Introduction**

State the background of the study and purpose of the study and summarize the rationale for the study or observation.

**Methods**

The methods section should include only information that was available at the time the plan or protocol for the study was written such as study approach, design, type of sample, sample size, sampling technique, setting of the study, description of data collection tools and methods; all information obtained during the conduct of the study belongs in the Results section.

Reports of randomized clinical trials should be based on the CONSORT Statement (http:// www. consort-statement. org). When reporting experiments on human subjects, indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional or regional) and with the Helsinki Declaration of 1975, as revised in 2000 (available at http://www.wma. net/e/policy/l 7-c_e.html).

**Results**

Present your results in logical sequence in the text, tables, and illustrations, giving the main or most important findings first. Do not repeat in the text all the data in the tables or illustrations; emphasize or summarize only important observations. Extra or supplementary materials and technical details can be placed in an appendix where it will be accessible but will not interrupt the flow of the text; alternatively, it can be published only in the electronic version of the journal.

**Discussion**

Include summary of key findings (primary outcome measures, secondary outcome measures, results as they relate to a prior hypothesis); Strengths and limitations of the study (study question, study design, data collection, analysis and interpretation); Interpretation and implications in the context of the totality of evidence (is there a systematic review to refer to, if not, could one be reasonably done here and now?, What this study adds to the available evidence, effects on patient care and health policy, possible mechanisms)? Controversies raised by this study; and Future research directions (for this particular research collaboration, underlying mechanisms, clinical research). Do not repeat in detail data or other material given in the Introduction or the Results section.

**References**

List references in alphabetical order. Each listed reference should be cited in text (not in alphabetic order), and each text citation should be listed in the References section. Identify references in text, tables, and legends by Arabic numerals in square bracket (e.g. [10]). Please refer to ICMJE Guidelines (http://www.nlm.nih.gov/bsd/uniform_ requirements.html) for more examples.

**Standard journal article**

[1] Flink H, Tegelberg Å, Thörn M, Lagerlöf F. Effect of oral iron supplementation on unstimulated salivary flow rate: A randomized, double-blind, placebo-controlled trial. J Oral Pathol Med 2006; 35: 540-7.

[2] Twetman S, Axelsson S, Dahlgren H, Holm AK, Källestål C, Lagerlöf F, et al. Caries-preventive effect of fluoride toothpaste: A systematic review. Acta Odontol Scand 2003; 61: 347-55.

**Article in supplement or special issue**

[3] Fleischer W, Reimer K. Povidone iodine antisepsis. State of the art. Dermatology 1997; 195 Suppl 2: 3-9.

**Corporate (collective) author**

[4] American Academy of Periodontology. Sonic and ultrasonic scalers in periodontics. J Periodontol 2000; 71: 1792-801.

**Unpublished article**

[5] Garoushi S, Lassila LV, Tezvergil A, Vallittu PK. Static and fatigue compression test for particulate filler composite resin with fiber-reinforced composite substructure. Dent Mater 2006.

**Personal author(s)**

[6] Hosmer D, Lemeshow S. Applied logistic regression, 2nd edn. New York: Wiley-Interscience; 2000.

**Chapter in book**

[7] Nauntofte B, Tenovuo J, Lagerlöf F. Secretion and composition of saliva. In: Fejerskov O,

Kidd EAM, editors. Dental caries: The disease and its clinical management. Oxford: Blackwell Munksgaard; 2003. p. 7-27.

**No author given**

[8] World Health Organization. Oral health surveys - basic methods, 4th edn. Geneva: World Health Organization; 1997.

**Reference from electronic media**

[9] National Statistics Online—Trends in suicide by method in England and Wales, 1979-2001. www.statistics.gov.uk/downloads/theme_health/HSQ20.pdf (accessed Jan 24, 2005): 7-18. Only verified references against the original documents should be cited. Authors are responsible for the accuracy and completeness of their references and for correct text citation. The number of reference should be kept limited to 20 in case of major communications and 10 for short communications.

More information about other reference types is available at www.nlm.nih.gov/bsd/uniform_requirements.html, but observes some minor deviations (no full stop after journal title, no issue or date after volume, etc).

**Tables**

Tables should be self-explanatory and should not duplicate textual material.

Tables with more than 10 columns and 25 rows are not acceptable.

Table numbers should be in Arabic numerals, consecutively in the order of their first citation in the text and supply a brief title for each.

Explain in footnotes all non-standard abbreviations that are used in each table.

For footnotes use the following symbols, in this sequence: *, ¶, †, ‡‡,

**Illustrations (Figures)**

Graphics files are welcome if supplied as Tiff, EPS, or PowerPoint files of minimum 1200x1600 pixel size. The minimum line weight for line art is 0.5 point for optimal printing.

When possible, please place symbol legends below the figure instead of to the side.

Original color figures can be printed in color at the editor's and publisher's discretion provided the author agrees to pay.

Type or print out legends (maximum 40 words, excluding the credit line) for illustrations using double spacing, with Arabic numerals corresponding to the illustrations.

**Sending a revised manuscript**

While submitting a revised manuscript, contributors are requested to include, along with single copy of the final revised manuscript, a photocopy of the revised manuscript with the changes underlined in red and copy of the comments with the point to point clarification to each comment. The manuscript number should be written on each of these documents. If the manuscript is submitted online, the contributors' form and copyright transfer form has to be submitted in original with the signatures of all the contributors within two weeks of submission. Hard copies of images should be sent to the office of the journal. There is no need to send printed manuscript for articles submitted online.

**Reprints**

Journal provides no free printed reprints, however a author copy is sent to the main author and additional copies are available on payment (ask to the journal office).

**Copyrights**



**Declaration**

A declaration should be submitted stating that the manuscript represents valid work and that neither this manuscript nor one with substantially similar content under the present authorship has been published or is being considered for publication elsewhere and the authorship of this article will not be contested by any one whose name (s) is/are not listed here, and that the order of authorship as placed in the manuscript is final and accepted by the co-authors. Declarations should be signed by all the authors in the order in which they are mentioned in the original manuscript. Matters appearing in the Journal are covered by copyright but no objection will be made to their reproduction provided permission is obtained from the Editor prior to publication and due acknowledgment of the source is made.

**Approval of Ethics Committee**

We need the Ethics committee approval letter from an Institutional ethical committee (IEC) or an institutional review board (IRB) to publish your Research article or author should submit a statement that the study does not require ethics approval along with evidence. The evidence could either be consent from patients is available and there are no ethics issues in the paper or a letter from an IRB stating that the study in question does not require ethics approval.

**Abbreviations**

Standard abbreviations should be used and be spelt out when first used in the text. Abbreviations should not be used in the title or abstract.

**Checklist**

- Manuscript Title
- Covering letter: Signed by all contributors
- Previous publication/ presentations mentioned, Source of funding mentioned
- Conflicts of interest disclosed

**Authors**

- Middle name initials provided.
- Author for correspondence, with e-mail address provided.
- Number of contributors restricted as per the instructions.
- Identity not revealed in paper except title page (e.g.name of the institute in Methods, citing previous study as 'our study')

**Presentation and Format**

- Double spacing
- Margins 2.5 cm from all four sides
- Title page contains all the desired information. Running title provided (not more than 50 characters)
- Abstract page contains the full title of the manuscript
- Abstract provided: Structured abstract provided for an original article.
- Key words provided (three or more)
- Introduction of 75-100 words
- Headings in title case (not ALL CAPITALS).
  References cited in square brackets
- References according to the journal's instructions

**Language and grammar**

- Uniformly American English
- Abbreviations spelt out in full for the first time. Numerals from 1 to l0 spelt out
- Numerals at the beginning of the sentence spelt out

**Tables and figures**

- No repetition of data in tables and graphs and in text.
- Actual numbers from which graphs drawn, provided.
- Figures necessary and of good quality (color)
- Table and figure numbers in Arabic letters (not Roman).
- Labels pasted on back of the photographs (no names written)
- Figure legends provided (not more than 40 words)
- Patients' privacy maintained, (if not permission taken)
- Credit note for borrowed figures/tables provided
- Manuscript provided on a CDROM (with double spacing)

**Submitting the Manuscript**

- Is the journal editor's contact information current?
- Is the cover letter included with the manuscript? Does the letter:

1. Include the author's postal address, e-mail address, telephone number, and fax number for future correspondence?
2. State that the manuscript is original, not previously published, and not under concurrent consideration elsewhere?
3. Inform the journal editor of the existence of any similar published manuscripts written by the author?
4. Mention any supplemental material you are submitting for the online version of your article. Contributors' Form (to be modified as applicable and one signed copy attached with the manuscript)

# Instructions to Authors

Submission to the journal must comply with the Guidelines for Authors.
Non-compliant submission will be returned to the author for correction.

To access the online submission system and for the most up-to-date version of the Guide for Authors please visit:

http://www.rfppl.co.in

Technical problems or general questions on publishing with CPHN are supported by Red Flower Publication Pvt. Ltd's Author Support team (http://rfppl.co.in/article_submission_system.php?mid=5#)

Alternatively, please contact the Journal's Editorial Office for further assistance.

Editorial Manager
Red Flower Publication Pvt. Ltd.
48/41-42, DSIDC, Pocket-II
Mayur Vihar Phase-I
Delhi - 110 091(India)
Mobile: 9821671871, Phone: 91-11-22754205, 45796900, 22756995
E-mail: author@rfppl.co.in