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KNOWLEDGE AND ATTITUDE REGARDING GENETIC DISORDERS AND THEIR PREVENTION AMONG MULTIPURPOSE HEALTH WORKERS IN SELECTED DISTRICTS OF PUNJAB

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ABSTRACT

A descriptive study was conducted to assess the knowledge and attitude regarding genetic disorders and their prevention among multipurpose health workers in selected districts of Punjab was used. 100 multipurpose health workers were selected through convenient sampling technique from the districts Faridkot and Ferozepur. Tools used were- Socio-demographic data sheet, self- structured knowledge questionnaire and 5-point attitude scale. Analysis was done by using the descriptive and inferential statistics using IBM SPSS version 20 statistical package. Results showed that approximately half (51%) of the multipurpose health workers had adequate knowledge and positive attitude regarding genetic disorders and their prevention. Statistically significant association was found between knowledge regarding genetic disorders and their prevention with gender and area of posting at p= 0.002, 0.005 respectively.

Keywords: ***multipurpose health workers, knowledge, attitude, genetic disorders and their prevention.***

INTRODUCTION AND BACKGROUND OF THE STUDY

The health of children has historically been of vital importance to all societies because children are the basic resources of the future of mankind. In any country, mothers and children constitute approximately 60% of the population. By virtue of their large number as well as because of being vulnerable to diseases, mothers and children are the major consumers of health services.[1]

Genetics is the study of genes and the statistical laws that govern transmission of gene from one generation to another. Protein synthesis contained in DNA. Variation in DNA results in variations in genetic constitution, hence final health status of an individual is the result of interactions of genetic potentials and the environment. It has been estimated that there are about 30 to 35 thousands genes in humans and about 6 million nucleotides make up these genes.[2]

Genetic disorders are caused by a single harmful gene, by several genes, or by a deviation in chromosome number or structure. May or may not be apparent at birth.[3]India, like other developing countries, is facing an accelerating demographic switch to non-communicable diseases. In the cities congenital malformations and genetic disorders are important causes of morbidity and mortality.[4]

Genetic diseases are transmitted from parents to the offspring's through a specific pattern of inheritance exemplified by recessive genetic disorders. These diseases include the sickle cell gene, thalassemia, the hemophilia, inborn errors of metabolism and red cell enzymopaties.[5]

Primary prevention of genetic disorder services was recommended by the World Health Organization (WHO), as potential to reduce the prevalence of genetic disorders. It is providing information about genetic disease, birth defects and inherited disorders. It is an educational service for individuals and families who have a genetic disease or who are at risk for such a disease. It is designed to provide individuals and their families with information about their condition and help them make informed decisions.[6]

The birth of an infant is one of the most awe inspiring and emotional events that can occur in one's lifetime. Some parents and families adjust easily to the necessary changes in their lifestyle whereas some find it difficult to cope with these changes and feel varying degrees of turmoil and anxiety. This is especially true if the neonate is not the healthy infant as expected.[7]

Due to the high birth rate in India a very large number of infants with genetic disorders are born every year almost half a million with malformations and 21,000 with Down syndrome. In a multi-centric study on the causes of referral for genetic counselling the top four disorders were repeated abortions (12.4%), identifiable syndromes (12.1%), chromosomal disorders (11.3%) and mental retardation (11%). In a more recent study in a private hospital the top reasons for referral were reproductive genetics (38.9%)--comprising prenatal diagnosis, recurrent abortions, infertility and Torch infections--mental retardation +/- multiple congenital anomalies (16.1%), Down syndrome (9.1%), thalassemia/haemophilia (8.8%), and muscle dystrophy/spinal muscular atrophy (8.4%).[4]

Multipurpose health workers are village- level female health worker who are known as first contact person between the community and health services. They are regarded as the grass-roots workers in the health organization pyramid. Their services are considered important to provide safe and effective care to village communities.[8-9]

I have seen that multipurpose health workers were unable to provide effective health education regarding the genetic disorders and their prevention to the community people especially the parents in reproductive age during my previous community posting. Thus, all the above facts and the work area created an insight in the investigator that there is an increased prevalence of genetic disorders and there is need to assess the knowledge of multipurpose health workers regarding genetic disorders as they are easily accessible to the community people. Hence the investigator was motivated to conduct a study. Also, the investigator has a genuine interest in the health needs concerned with children, as they are the future of our country.

OBJECTIVES

1. To assess the knowledge regarding genetic disorders and their prevention among multipurpose health workers.
2. To assess the attitude regarding genetic disorders and their prevention among multipurpose health workers.
3. To find out the association between the knowledge and attitude with selected socio-demographic variables.

MATERIAL AND METHODS

RESEARCH DESIGN& APPROACH: Non- experimental, descriptive and quantitative research approach was used to assess the knowledge and attitude regarding genetic disorders and their prevention among multipurpose health workers in selected districts of Punjab.

RESEARCH SETTINGS: The study was conducted in PHCs, CHCs, Sub centers of districts Faridkot and Ferozepur of Punjab.

SAMPLE AND SAMPLING TECHNIQUE: The sample was 100100 multipurpose health workers working in PHCs, CHCs and Sub centres of districts Faridkot and Ferozepur of Punjab. Subjects were selected by selected by convenient sampling technique. Study subjects were selected keeping in mind the inclusion and exclusion criteria of sample selection. Multipurpose health workers (males and females) who were willing to participate in the study and available during data collection were include in the study. Multipurpose health workers (males and females)

not available during the period of data collection and not willing to participate in the study were excluded from the study.

DESCRIPTION OF TOOL: Research tools of the study includes following parts:

Part I: Socio demographic profile of subject: It consists of 6 items which were age, gender, place of posting, work experience, previous information, source of information.

Part II: Self- structured knowledge questionnaire regarding genetic disorders and their prevention: It consists of 35 items to assess the knowledge of multipurpose health workers regarding genetic disorders and their prevention. The total score was 35. Score range was 0-35. Score obtained by multipurpose health workers on self-structured knowledge questionnaire which falls above and equals to the mean knowledge score were having adequate knowledge and those which falls below the mean knowledge score were having inadequate knowledge.

Part III: Likert scale to assess the attitude of multipurpose health workers regarding genetic disorders and their prevention: This tool was 5 point likert scale to assess the attitude of multipurpose health workers regarding genetic disorders and their prevention. The tool consists of 18 statements i.e. 9 positive statements and 9 negative statements. Positive items were 1,2,6,7,8,14,15,16,18 and negative items were 3,4,5,9,10,11,12,13,17. The statements were developed for the respondents to respond on five point Likert's scale i.e. strongly agree. agree, uncertain, disagree, strongly disagree. Positive items were coded 5,4,3,2,1 score and negative items were coded reversely. The total score was 90. Score range was 18-90. Score obtained by multipurpose health workers on likert scale, which falls above and equals to the mean attitude score were having positive attitude and those which falls below the mean attitude score were having negative attitude regarding genetic disorders and their prevention.

ETHICAL CONSIDERATIONS

Ethical approval was taken from ethical and research committee of University College of Nursing and Baba Farid University of Health Sciences, Faridkot. Keeping in mind the legal rights of the subjects who were willing to participate were included in the study.

- Study procedure was explained and informed written consent was taken.
- Anonymity of the study subjects and confidentiality of information was maintained.

RESULTS

Table 1: Socio- demographic profile of the multipurpose health workers

N= 100

S. No.	Sample Characteristics	Frequency (n)	Percentage (%)
1.	**Age (years)**		
	18-28	12	12
	29-38	49	49
	39-48	35	35
	49 and above	4	04
2.	**Gender**		
	Male	29	29
	Female	71	71
3.	**Area of posting**		
	CHC	13	13
	PHC	20	20
	Sub Centre	67	67
4.	**Work experience**		
	0-10 years	80	80
	11-20 years	17	17
	21-30 years	1	01
	31-40 years	02	02
5.	**Previous information**		
	Yes	76	76
	No	24	24
6.	**Source of information (N=76)**		
	In service training	61	80.2
	During study course	06	7.89
	In service training and during study	05	6.57
	course	04	5.2
	During study course and Social media		

Table 1: describes the socio-demographic profile of the multipurpose health workers. As per age of the multipurpose health workers, majority of the multipurpose health workers i.e. 49% were in the age group of 29- 38 years. As per gender of multipurpose health workers, majority of the multipurpose health workers were females i.e. 71 % and males were 29% only. Maximum number of multipurpose health workers were working in Sub Centre i.e. 67% followed by 20% in PHCs and only 13% were in CHCs. Majority of multipurpose health workers i.e. 80% were having work experience between 0-10 years. 76% multipurpose health workers were having previous

information regarding genetic disorders. As per the source of the information about the genetic disorders, out of 76 multipurpose health workers, majority of the multipurpose health workers i.e. 80.2% had gained information from in-service training followed by 7.89% multipurpose health workers during study course. 6.57% multipurpose health workers had chosen in- service training as well as study course as a source of information. Only 5.2% multipurpose health workers had gained information through study course as well as social media.

OBJECTIVE-1: TO ASSESS THE KNOWLEDGE OF MULTIPURPOSE HEALTH WORKERS REGARDING GENETIC DISORDERS AND THEIR PREVENTION IN SELECTED DISTRICTS OF PUNJAB.

Table 2: Mean, Median and Standard deviation of knowledge score of multipurpose health workers regarding genetic disorders and their prevention

N= 100

Area	Maximum knowledge score	Maximum obtained score	Minimum obtained score	Mean score	Median	Standard deviation
Knowledge score	35	32	3	19.67	20	6.29

Table 2 depicts the mean score, Median and Standard deviation of knowledge score regarding the genetic disorders and their prevention among multipurpose health workers in selected districts of Punjab. Maximum knowledge score was 35. Maximum obtained score by the multipurpose health workers was 32 and minimum obtained score was 03. Mean knowledge score was 19.67 with Standard deviation of 6.29 and Median was 20.

Table 3: Frequency and percentage distribution of knowledge score of multipurpose health workers regarding genetic disorders and their prevention

N=100

Level of Knowledge	Frequency (n)	Percentage (%)
Adequate knowledge (equal to and above mean score i.e ≥20)	51	51
Inadequate knowledge (below mean score i.e<20)	49	49

Table 3 depicts the frequency and percentage distribution of knowledge score regarding genetic disorders and their prevention among multipurpose Health workers in selected districts of Punjab. 51% multipurpose health workers had adequate knowledge and 49% had inadequate knowledge regarding genetic disorders and their prevention.

OBJECTIVE NO. 2: TO ASSESS THE ATTITUDE REGARDING GENETIC DISORDERS AND THEIR PREVENTION AMONG MULTIPURPOSE HEALTH WORKERS IN SELECTED DISTRICTS OF PUNJAB.

Table 4: Mean, Median and Standard deviation of attitude score of multipurpose health workers regarding genetic disorders and their prevention

N=100

Area	Maximum attitude score	Maximum obtained score	Minimum obtained score	Mean score	Median	Standard deviation
Attitude score	90	82	48	64.92	65	7.43

Table 4 depicts the mean score, median and standard deviation of the attitude scores regarding genetic disorders and their prevention among multipurpose health workers in selected districts of Punjab. Maximum attitude score was 90. Maximum obtained attitude score was 82 and minimum obtained attitude score was 48. Mean attitude score was 64.92 with standard deviation 7.43 and median was 65.

Table 5: Frequency and percentage distribution of attitude score regarding genetic disorders and their prevention among multipurpose health workers

N= 100

Interpretation of attitude	Frequency (n)	Percentage (%)
Positive attitude (above mean score i.e. ≥ 65)	51	51
Negative attitude (below mean score i.e. <65)	49	49

Table 5 depicts the frequency and percentage distribution of attitude score regarding genetic disorders and their prevention among multipurpose health workers in selected districts of Punjab. 51% of multipurpose health workers had positive attitude and 49% multipurpose health workers had negative attitude regarding genetic disorders and their prevention.

OBJECTIVE 3: TO FIND OUT THE ASSOCIATION BETWEEN KNOWLEDGE AND ATTITUDE WITH SELECTED SOCIO- DEMOGRAPHIC VARIABLES.

Table 6 (A)
Association of knowledge score of multipurpose health workers with socio-demographic variables (Gender)

N= 100

Socio-Demographic Variable		**Knowledge score**		**n**	**df**	**Calculated chi square and p value**
		Adequate (%)	**Inadequate (%)**			
Gender	Male Female	8 (27.58) 43 (60.56)	21 (72.41) 28 (39.43)	29 71	1	$\square^2$ =8.9602 p= 0.0027^S

S= Significant at level p<0.05

Table 6 (A) shows that as per gender of multipurpose health workers, majority 60.56% (43) of study subjects who had adequate knowledge regarding genetic disorders and their prevention were females whereas only 27.58% (08) of study subjects who had adequate knowledge regarding genetic disorders and their prevention were males. The chi square value of 8.9602 was found to be statistically significant at p=0.0027 level. So it was evident from results that gender of multipurpose health workers had statistically significant impact on the knowledge. This may be due to correspondence with curriculum they studied during their academics and in-service education.

Table 6 (B)
Association of knowledge score of multipurpose health workers with socio-demographic variables (Area of posting)

N= 100

Socio-Demographic Variable		**Knowledge score**		**n**	**df**	**Calculated chi square and p value**
		Adequate (%)	**Inadequate (%)**			
Area of posting	CHC PHC Sub Centre	12 (92.30) 08 (40) 31 (46.26)	01 (7.69) 12 (60) 36 (53.73)	13 20 67	2	$\square$2=10.4450 p= 0.0053^S

S=Significant at level p<0.05

Table 6 (B) illustrates that as per area of posting, majority of the study subjects i.e. 92.3% (12) who had adequate knowledge were working in CHCs followed by 46.26% (31) study subjects were working in Sub centres. The chi square value of 10.4450 was found to be statistically significant at p= 0.0053 level. So it was evident from the results that area of posting had statistically significant impact on knowledge. This may be due to the exposure, they had at their posting areas while caring for various patients.

DISCUSSION

In the present study, 61% of the study subjects fall under the age group of <39 years. These finding were supported by **Washeel OF and Eqbal GM (2017)**[10] who reported in their study that 76% of the study subjects were under <39 years. The present study findings show that 71% of the study subjects were females and 29% were males. These findings were supported by **Kusumaningrum NSD and Erawati M (2018)**[11]who reported in their study thatfemale subjects 76.1% were more than males (23.9%). Similar findings were also supported in the study by **Shrivastava M et al (2016)**[12]who reported in the study that 68.2% were females and 31.7 % males. Present study inferred that 80% study subjects were having work experience between 0-10 years and 20% study subjects were having work experience of more than 10 years. These findings were supported by **Washeel OF and Eqbal GM (2017)**[10] who reported in the study that 58.8%of the study subjects were having work experience between 0-10 years and 41.2% were having work experience of more than 10 years.

The present study depicts that 51% of the Multipurpose Health Workers had adequate knowledge and 49% had inadequate knowledge. These findings were supported by **Washeel OF Eqbal GM (2017)**[10] 52.9% nurses had poor knowledge regarding hemophilia and 17.7% nurses had very good knowledge regarding hemophilia. Another study supporting the present study conducted by **Isah BA et al (2016)**[13] revealed that only about one third (34.1%) of respondent have good knowledge of Sickle cell disease, majority (65.9%) have poor knowledge of Sickle cell disease. More than half (55.4%) of respondent have good attitude regarding premarital screening for sickle cell disease. In the present study, it was found that approximately half of the multipurpose health workers (49%) had inadequate knowledge regarding genetic disorders and their prevention. The study conducted by **Elfattah HA et al (2015)**[14] states that 57% of students had poor knowledge regarding premarital genetic counseling and 16% had good knowledge. 54% were uncertain about their attitude and 25% had negative attitude. The present study states that 51% of the multipurpose health workers had adequate knowledge and 49% had inadequate knowledge regarding genetic disorders and their prevention. In another study by **Lea GRN (2012)**[15] states that 53.9% Italian nurses and midwives could not specify to whom the counseling was aimed.

In the present study, it was found that there was no statistical significant association between knowledge scores and age, years of working experience, previous information and source of information at p<0.05 level. These findings supported by **Elfattah HA et al (2015)[14]** who revealed in his study that there was no significant correlation between student total knowledge & attitude scores premarital genetic counseling and their age at p value <0.05 level. Meanwhile significant correlation was found with residence pre and post counseling especially students from rural area at p value <0.00. In the present study, it was found that there was statistical significant association between knowledge scores of multipurpose health workers regarding genetic disorders and their prevention in relation to gender and area of posting. The study was opposed by **Rabbani SA et al (2017)[16]**who reported in the study that there was statistically significant positive correlation (p<0.001) between age and level of knowledge and attitude. The correlation between year of study and level of knowledge and attitude was found to be positive and statistically significant with a p value of <0.001.

CONCLUSION

- Approximately half (51%) of multipurpose health workers had adequate knowledge and 49% of multipurpose health workers had inadequate knowledge regarding genetic disorders and their prevention.
- The association of knowledge regarding genetic disorders and their prevention with gender and area of posting of multipurpose health workers was statistically significant at p<0.05 level of significant.
- Approximately half 51% of multipurpose health workers had positive attitude and 49% of multipurpose health workers had negative attitude regarding genetic disorders and their prevention.
- The association of attitude regarding genetic disorders and their prevention with all selected socio demographic variables were non- significant at p<0.05 level.
- So, steps can be taken for creation of awareness regarding genetic disorders and their prevention among multipurpose health workers. In- service training can help in making multipurpose health workers aware about genetic disorders and their prevention

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