

CHILD CENTRIC DISASTER RISK REDUCTION

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ABSTRACT

This study was commissioned to analyze the impact of child-centric disaster risk reduction (CCDRR) training programmes among the participants in India. Simple random sampling method was used in this study. This study was conducted in pan India covering 80 respondents from each state and Union Territory. The training has improved the level of knowledge of participants irrespective of gender and had high impact among the transgender. The study also found that there is a significant association between departments, and knowledge on child-centric disaster risk reduction.

Keywords: Child-Centric, Disaster Management, Risk Reduction, Training.

INTRODUCTION

Children are physically vulnerable to both man-made and natural disaster events due to their dependency on adults. However, the abilities and creativity of older children and adolescents are an asset in disaster risk management. Disasters not only disrupt children's routine life but they may also result in missing school days and slow academic progress, reduced social opportunities, and exacerbating exposure to various life stressors. It is essential to focus on the protection of children by adopting effective risk mitigation measures.

Children in hazard-prone areas in our country are twice as likely to be living in chronic poverty and thrice as likely to become impoverished according to a major new study by the Overseas Development Institute (ODI). Children's experience of climate and natural hazard-related disasters vary depending on the context in which they are living with the poorest of poor being very likely to be affected. Disasters and climate hazards are affecting children and adolescents in multiple ways, directly through injury or impact on poverty or individual

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deprivation and indirectly through the implications on essential services and systems central to the well-being and long-term development of children.

REVIEW OF LITERATURE

Disasters have an uneven impact on the poor in developing countries, especially affecting the most vulnerable sections of the population. Young children, especially differently abled children, are less well equipped to deal with deprivation and stress due to their particular physical and psychosocial character (Bartlett, 2008, Cutter, 1995, and Peek, 2008). These leave children particularly vulnerable to the effects of disasters. In the late 1990s, the number of children affected by disasters was huge (estimated at 66.5 million per year). The impact of climate change is projected to increase this to as many as 175 million per year in the forthcoming decade.

Children constitute “an extremely huge percentage of those who are most vulnerable and the effects, especially for the youngest children, can be long term. If speculations about the impacts of climate change on children fail to take into account the particular vulnerabilities and capacities of children at different ages, gender, ability measures for prevention, mitigation, and adaptation, it may prove to be insufficient in critical ways and may even result in additional stresses for young children”(Bartlett, 2008). Foster (1995) stated that children from landless households in disaster affected areas experienced a significant deterioration of their health and nutritional status, which the author attributes in part to credit market imperfections.

The incidence of child malnutrition increased more than three times among households that were more exposed to heavy rainfall during the hurricane Mitch in Nicaragua in late 1998 (Baez and Santos, 2007). To reduce the disaster risk on children, awareness among the stakeholders on child-centric disaster risk reduction is essential. Since child-centric disaster risk reduction is a new concept, much literature about awareness on child-centric disaster risk reduction is not available.

MATERIALS AND METHODS

The Child Centric Disaster Risk Reduction (CCDRR) Centre was established by National Institute of Disaster Management (NIDM), Ministry of Home Affairs, Government of India in collaboration with United Nations International Children’s Emergency Fund (UNICEF) to focus on children related issues in disaster and emergencies. During 2019-2021, the CCDRR Centre has organized 25 face- to -face training programmes and 77 online training programmes covering 2069 and 32232 participants respectively. These programmes covered the participants from 28 States and 8 Union Territories. The participants were from department of Health, Education, Revenue, Women & Child Welfare, Panchayati Raj & Rural Development, first responders, civil society organizations and among youth.

SAMPLING

This study was conducted to find the impact of child centric disaster risk reduction Trainings on knowledge about child centric disaster risk reduction among the stakeholders in India. Before the training programme pre-training evaluation test was conducted with all the participants of face-to- face training and online training through google form. Among the 34301 participants, about 80 participants were selected from each states by adopting simple

random sampling method and the post-training evaluation google form were sent through e-mail. After regular follow up, the post-training evaluation test data has been collected from the participants for this study.

The respondents were from all the states and UTs of India. Total sample size for the study is 2880. About 44 percent respondents were female, 55.6 percent of respondents were male and 0.6 percent of respondents, Transgender. The study has covered respondents from department of Health, Education, Revenue, Women & Child Welfare, Panchayati Raj & Rural Development, first responders, civil society organizations and youth. Department-wise number of respondents are given below.

Table 1: Department- wise Sample Size

Department	Frequency	Percent
Health	279	10
Education	620	22
Revenue	334	12
Women & Child Welfare	233	8
Panchayati Raj & RD	353	12
First Responder	328	11
Civil Society	175	6
Youth	558	19
Total	2880	100

FINDINGS OF THE STUDY

The child centric disaster risk reduction training programme has covered five broader areas i.e., basic concepts of disaster risk management, child rights and disaster risk reduction, disaster impact on children, vulnerability and capacity of children and Child-Centric Disaster Risk Reduction. The findings of the study are also presented on the same.

PREVIEW OF BASIC CONCEPTS OF DISASTER MANAGEMENT

Basic concept of disaster risk management is a one of the important modules in this training programme. Data reveals that prior to participating in this training, about 8 percent of respondents were having very poor knowledge on basic concept of disaster management and post -training evaluation reveal that every trainee gained some knowledge on basic concept of disaster management. Before the training, only 12 percent of participants were having good knowledge on basic concept of disaster management and the post-test evaluation shows that 79 percent of the participants were having good knowledge on basic concept of disaster management. It is evident that the percent of participants having very poor knowledge of basic concept of disaster management became null and the percent of participants having very poor knowledge on basic concept of disaster management increased. (Bilal, Sidra-UI-Mutahi, and Anees, 2017). The study also revealed about awareness on disaster plan and mock drill. Comparatively, the students have good awareness than government officers.

Table 2: Level of knowledge on Basic Concepts of Disaster Management

Level of Knowledge	Frequency		Percent	
	(Pre-)	(Post-)	(Pre-)	(Post-)
Very Poor	224	0	8	0
Poor	1012	79	35	3
Average	1298	532	45	18
Good	346	2269	12	79
Total	2880	2880	100	100

KNOWLEDGE ON CHILD RIGHTS AND DISASTER RISK

It is observed from Table 2 that percent of participants having very poor knowledge on child rights and disaster risk reduction decreased from 4% to 0%. Similarly, percent of participants having poor knowledge on child rights and disaster risk reduction decreased from 22% to 2%. The percentage of participants having good knowledge on child rights and disaster risk reduction increased from 28% to 82%. It shows that the training improved the level of knowledge of participants on child rights and disaster risk reduction.

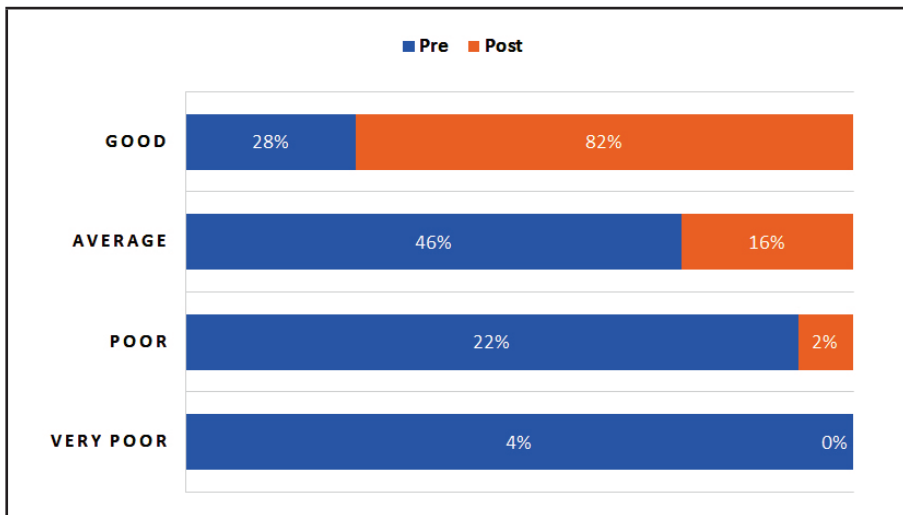


Figure 1: Level of Knowledge on Child Rights and Disaster Risk Reduction

KNOWLEDGE ON DISASTER IMPACT ON CHILDREN

It is evident from that table that percentage of participants having very poor knowledge on disaster impact on children decreased from 11% to 0%. Similarly, percentage of participants having poor knowledge on disaster impact on children decreased from 33% to 1%. The percentage of participants having good knowledge on disaster impact on children increased from 19% to 88%. It shows how training improved the level of knowledge of participants on disaster impact on children. Not much studies have been conducted on awareness about

disaster impacts on children. Though, a study on affected parents' and other stakeholders' perception of a fire disaster management in India (a situational analysis) was conducted by Sujata Satapathy and Ajinder Walia in 2007.

Table 3: Level of Knowledge on Disaster Impact on Children

Level of Knowledge	Frequency		Percent	
	(Pre-)	(Post-)	(Pre-)	(Post-)
Very Poor	306	0	11	0
Poor	957	26	33	1
Average	1067	322	37	11
Good	550	2532	19	88
Total	2880	2880	100	100

CASE STUDY 1: SMART SCHOOL BELL

Mr.A.V. Raja Gopal from Zilla Parishad High School Chettuplalli, Anakappali District of Andhra Pradesh attended the training programme on child centric disaster risk reduction organized by CCDRR Centre in association with State Council of Educational Research and Training during 2021. After attending this training programme he guided his student to make smart school bell.

In most of the government schools, they use iron rod for ringing the bell. The same was the practice in Zilla Parishad High School, Chettuplalli. Usually the iron rod is hung on the school. When the students play they use to hit and get injury. After attending this training, Mr. A.V. Raja Gopal realised the issue and motivated his students to come up with solution.

A boy, Mahendra who was studying in seventh standard got idea to develop mobile app for automatic electric bell while watching a TV advertisement showing how an air conditioner works automatically. He shared his idea with his teacher Mr.A.V. Raja Gopal. The teacher encouraged him to further actualize the idea. The boy developed a mobile app and purchased an electric bell with the support of School Management committee. Now the school operates with Smart school bell which rings automatically. This initiative has ensured the safety of the school children.

KNOWLEDGE ON VULNERABILITY AND CAPACITY OF CHILDREN

Reducing the vulnerability and increasing the capacity of children is an important module in this training programme. It is revealed from the Table 3 that before the training 11 % and 40 % of participants were having very poor and poor knowledge on vulnerability and the capacity of children respectively and this training reduced the percentage of participants having very poor knowledge on vulnerability and the capacity of children from 11 % to 0 %. Similarly there was reduction in the percentage of participants having poor knowledge on vulnerability and the capacity of children from 40 % to 3%. The percentage of participants having good knowledge on vulnerability and the capacity of children increased from 3% to 82 %. It shows how training improved the knowledge of participants on vulnerability and the capacity of children. There is limited evidence on how hazard vulnerability capacity analysis tools help disaster managers to

consider and address the risks and vulnerabilities. These are more prominent in urban contexts (Wigg, Maclure, Masson, V, and Gliozzo, 2018). The tools discussed in this study can help the stakeholders to gain knowledge on vulnerability and capacity of children.

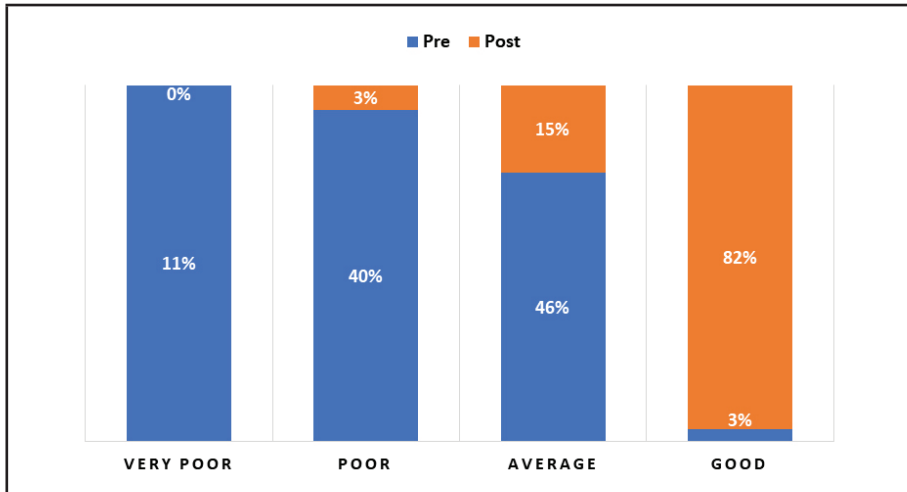


Figure 2 : Level of Knowledge on Vulnerability and Capacity of Children

KNOWLEDGE ON CHILD CENTRIC DISASTER RISK REDUCTION

It is seen from Table 4 that percent of participants having very poor knowledge on child centric disaster risk reduction decreased from 5 % to 0%. Similarly, percentage of participants having poor knowledge on child centric disaster risk reduction decreased from 27 % to 2%. The percentage of participants having good knowledge on child centric disaster risk reduction increased from 16% to 81 %. It shows that the training has improved the knowledge of participants on child centric disaster risk reduction. In most disasters, around a third or half of the deaths are that of children. Disasters affect children more disproportionately than adults, especially those from impoverished backgrounds in the long term (Kousky, 2016). Vulnerability of children is expected to increase as the intensity and frequency of natural disasters rise but the level of awareness about child centric disaster risk reduction among the stakeholders is not satisfactory and need national level concentration.

Table 4: Level of Knowledge on Child Centric Disaster Risk Reduction

Level of Knowledge	Frequency		Percent	
	(Pre-)	(Post-)	(Pre-)	(Post-)
Very Poor	144	0	5	0
Poor	777	66	27	2
Average	1506	476	52	17
Good	453	2338	16	81
Total	2880	2880	100	100

STATE/UT -WISE IMPACT OF TRAINING ON KNOWLEDGE ON CCDRR

The States/UT -wise knowledge of participant on Child-Centric Disaster Risk Reduction is presented in the chart. It is observed from the chart that before the training programme, participants from Chandigarh (7.3), Andaman & Nicobar island (7.5), Delhi (7.5), Jharkhand (7.6) Chhattisgarh (7.7) were among bottom five states having less mean score for knowledge on Child- Centric Disaster Risk Reduction. Andhra Pradesh, Tamil Nadu (9.3) Bihar (9.0) Assam, Dadar & Nagar Haveli, Jammu & Kashmir, Meghalaya, Sikkim, Uttarakhand (8.9) were among top States/UTs having high mean score for knowledge on Child -Centric Disaster Risk Reduction.

It is observed from the Table that after attending the training programme, means score been increased for the participants in following manners: Uttarakhand (8.9 to 14.4), Tamil Nadu (9.3 to14.3),Sikkim (8.9 to14.3) Punjab(9.2 to 14.3) Odisha (9.1 to 14.3),Dadar & Nagar Haveli (8.9 to 14.3), Bihar (9.0 to14.3) .These States/UTs became tops states having high mean score. After the training programmes participants from Chhattisgarh (7.7 to 13.5) Andaman & Nicobar island (7.5 to 13.6), Chandigarh (7.3 to 13.6) Goa (7.3 to13.6) were at the bottom four State/UT having less mean score but their mean score also increased from seven to above 13. The chart shows how after attending the training programme, knowledge of participants from all the State/UTs improved.

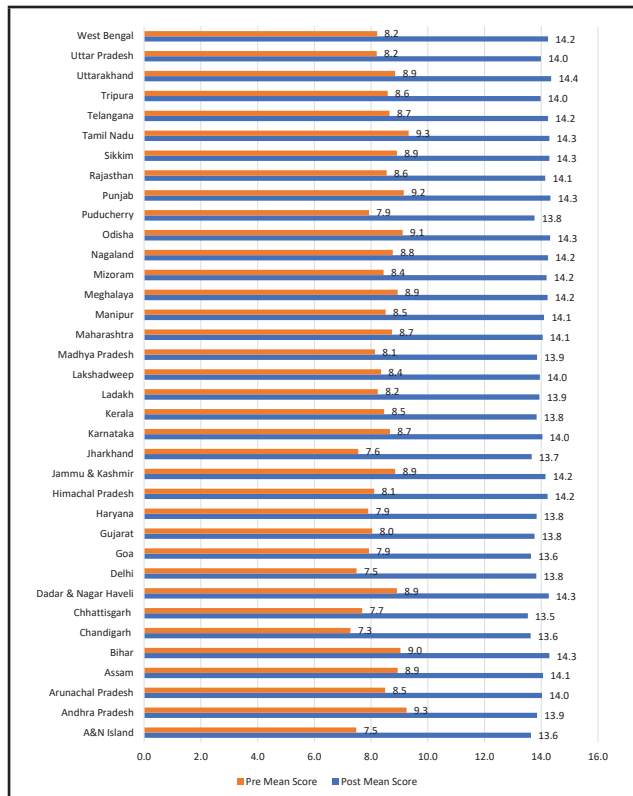


Figure 3: State/UT- wise Mean Score for Knowledge on CCDRR (pre- and post- training)

CASE STUDY 2 : ENGAGING CHILDREN DURING COVID-19 RESPONSE

Integrated Centre for Disaster Management (ICDM) is South India based Non-government organisation. Professionals from ICDM participated in the CCDRR trainings. Though they were doing DRR activities but CCDRR was new to them. They have decided to include engaging children in Disaster Risk Reduction as one of the component of their centre. They motivated large number of children to involve in Covid -19 response.

Mr.Prajesh from Tiruchirappalli district of Tamil Nadu who was studying in ninth standard is associated with ICDM and he got motivation from the ICDM and got involved in Covid-19 response. During Covid-19, he was involved in creating awareness, making home-made mask, distribution of mask and sanitiser to the vulnerable people.

GENDER-WISE IMPACT

It is revealed from the chart that the post-training evaluation of mean score of male increased from 8.6 to 14, followed by the mean score of female increased from 8.2 to 13.9 and the mean score of transgender increased from 8.8 to 14.2. It is observed from the chart that the training improved the level of knowledge of all gender and had high impact among the transgender.

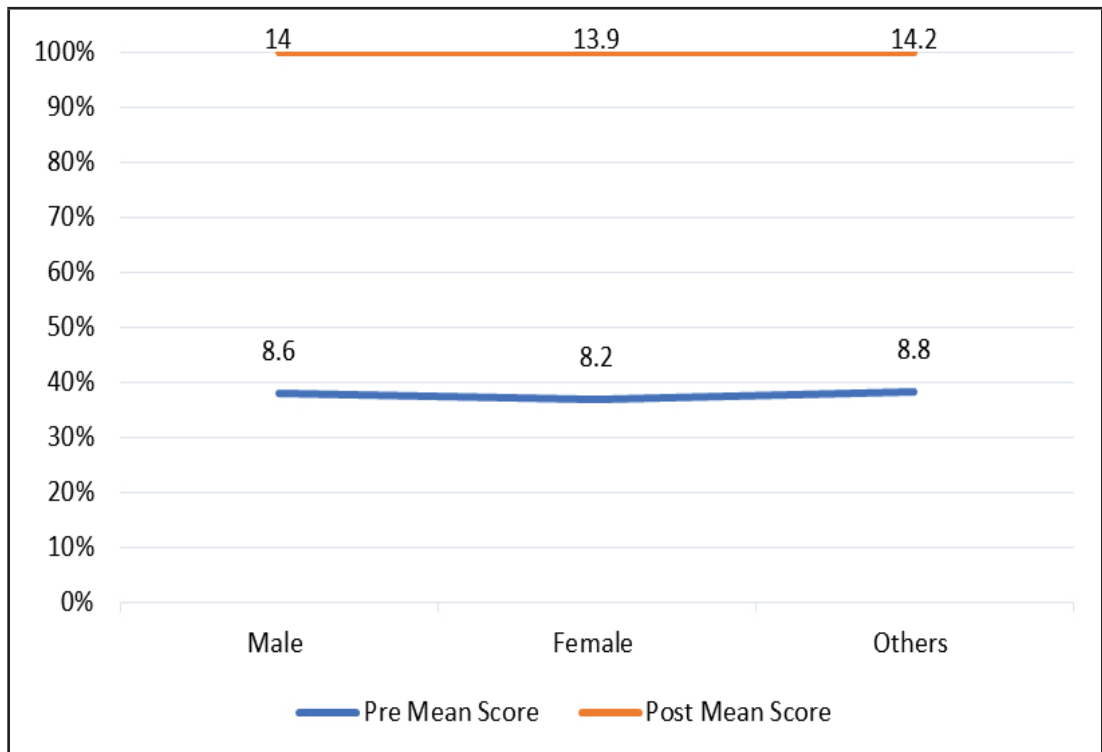


Figure 4: Gender- wise Mean Score for Knowledge on CCDRR (pre- and post- training)

DEPARTMENT-WISE IMPACT

It is observed from the table that before attending the training the participants from department of women and child welfare and Panchayat Raj & Rural Development are top two departments having knowledge about child centric disaster risk reduction and their mean score is 8.9 and 8.8 respectively. Participants from Civil society organisation, Youth, Education are the bottom two departments having knowledge about child centric disaster risk reduction and their mean score is 7.9 and 8.1 respectively. After the training the mean score of participants from Health, First responder, revenue, Women & child welfare, Panchayat raj & Rural development are increased to 14 and above. The mean score of participants from education, youth and civil society organisation are increased above 13. It is evident from the table that the knowledge of participants from various department were improved.

Table 5: Department- wise Mean Score for Knowledge on CCDRR (pre- and post- training)

Department	Mean Score	
	Pre-	Post-
Health	8.5	14.0
Education	8.1	13.9
Revenue	8.6	14.1
Women & Child Welfare	8.9	14.2
Panchayati & RD	8.8	14.2
First Responder	8.5	14.0
Civil Society	7.9	13.6
Youth	8.1	13.9

AGE GROUP- WISE IMPACT

It is revealed from the chart that the post training evaluation mean score of participants from the age group below 30 increased from 8.5 to 14.0. Similarly, the mean score of participants from the age group 30-40 is increased from 8.6 to 14.1. It was followed by the mean score of participants from the age group 41-50 which increased from 8.4 to 14.0. The mean score of participants from the age above 51 also increased from 8.1 to 13.9. It shows how the training has improved the knowledge on Child- Centric Disaster Risk Reduction among the participants of all age groups.

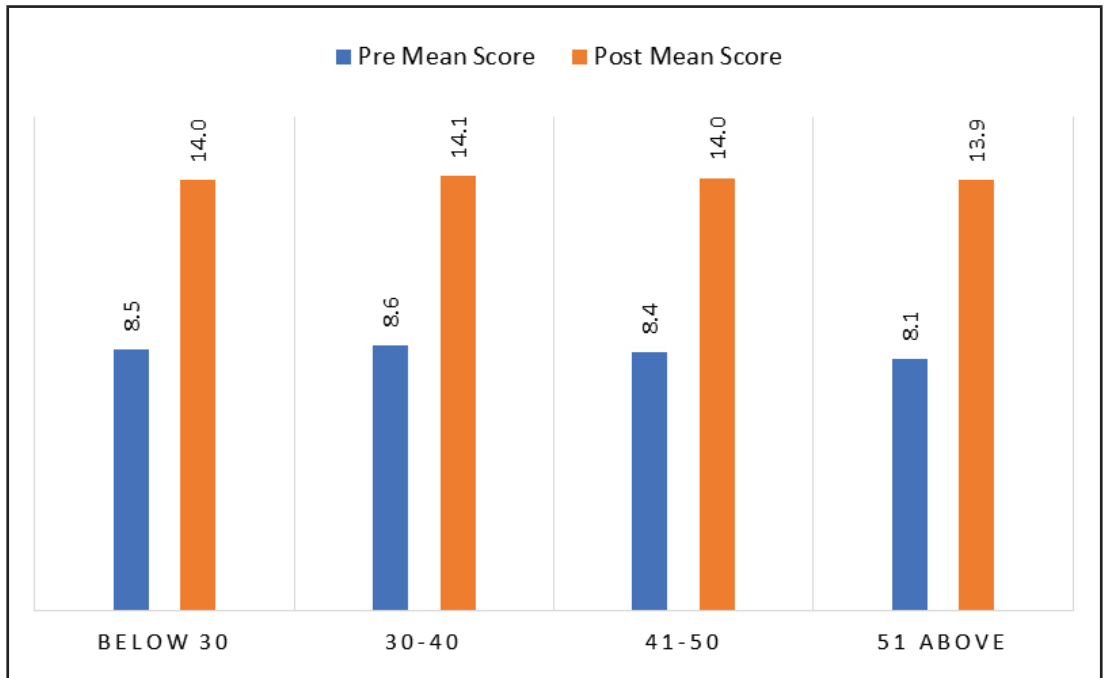


Figure 5: Age Group- wise Mean Score for Kno pre and post training (pre- and post- Training)

ASSOCIATION OF SELECTED INDEPENDENT VARIABLES WITH THE POST-TRAINING KNOWLEDGE ON CCDRR

State/UTs

The table reveals that the calculated chi square value (25.571) is lesser than the tabulated value leading a null hypothesis. “There is no association between State/UTs and impact on knowledge on CCDRR is accepted”. It means that there is no significant association between State/UTs and impact on knowledge on CCDRR.

Gender

The data shows that the calculated value of chi square value (5.715) is lesser than the tabulated value leading a null hypothesis. “There is no association between gender and impact on knowledge on CCDRR is accepted”. It means that there is no significant association between impact on knowledge on CCDRR.

Department

The Table reveals that the calculated chi square value (71.050) is higher than the tabulated value leading a null hypothesis. “There is no association between the department and impact on knowledge on CCDRR is rejected”. It means that there is a significant association between department and impact on knowledge on CCDRR.

Table 6: Association of Selected Independent Variables with the Impact on Knowledge on CCDRR among the Participants.

S. No	Independent variables	Chi-square (X ²)
1	States	25.571
2	Gender	5.715
3	Department	71.050**
4	Age	31.463
** . Correlation is significant at the 0.01 level of probability		
* . Correlation is significant at the 0.05 level of probability		

Age

The data shows that the calculated value of chi square value (31.463) is lower than the tabulated value leading a null hypothesis. “There is no association between the age and impact on knowledge on CCDRR is accepted”. It means that there is no significant association between age and impact on knowledge on CCDRR.

CONCLUSION

The present study found that the percentage of participants having very poor knowledge on Child -Centric Disaster Risk Reduction decreased from 5 % to 0 %. Similarly, percentage of participants having poor knowledge on Child -Centric Disaster Risk Reduction decreased from 27 % to 2%. The percentage of participants having good knowledge on Child -Centric Disaster Risk Reduction increased from 16 % to 81 %. After attending the training programme, knowledge of participants from all the State/UTs improved. The training improved the level of knowledge of all gender and had high impact among the transgender. Post-training evaluation of mean score of participants from Ministry of Health, First responder, Department of Revenue, Women & Child Welfare, Panchayati Raj & Rural Development significantly increased. The study also found that there is a significant association between departments, and knowledge on child- centric disaster risk reduction.

The National Disaster Management Authority (NDMA), National Institute of Disaster Management (NIDM), and Administrative Training Institutes should focus more on conducting training programmes for Child -Centric Disaster Risk Reduction of the stakeholders to improve their awareness thereby helping to reduce the vulnerability of children. The Ministry of Health, Education, Revenue, Women and Child welfare, Panchayati Raj and Rural Development should ensure that all their officers are attending the training programme on Child -Centric Disaster Risk Reduction.

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