THE IMPACT OF HEAD INJURY AWARENESS PROGRAM ON THE PLAY BEHAVIOUR OF CHILDREN IN PESHAWAR

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ABSTRACT

Objectives: The incidence of head injury is on the rise in developing countries. The number of deaths and burden of disability may be reduced, if not completely stopped, through preventive measures after an epidemiological survey on trauma. This study succinctly aimed in getting information about the causes of head injury among school going children. Moreover, this study helped in molding the behavior of a child by making them more aware about the necessary safety and preventive measures during play in order to reduce the chances of head injury. It was hypothesized:

1. Head injury awareness program tends to effect the play behavior of children.
2. Head injury awareness program tends to provide more knowledge about the causes and consequences of head injury.
3. Head injury awareness program tends to provide more information about safety and preventive measures from head injuries.

Research Design: A comparative study

Place and Duration of study: Different schools of Peshawar, September 2013 to December 2013.

Sample and Method: Sample of 800 children with the age ranging from nine years to twelve years was randomly selected for this awareness program from various schools of Peshawar. The research instrument used were (1) Interview comprising of Demographic sheet for the details of participants (2) Self-constructed questionnaires based on 3 point

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rating scale to measure Childs general knowledge about the causes of head injury, information about safe play, consequences of head injury and information about preventive measures during play. (3) Self developed questionnaires to measure child’s opinion about head injury program.

**Results:** show that p< .05 and p<.01 a significant difference was found for hypotheses 1, 2 and 3.

**Conclusion:** It is concluded that head injury awareness program provide children with information and understanding which can increase their carefulness in present and future play activities by making them more conscious about playing safe games.

**Key Words:** Head Injuries, Causes, Prevention, Play

**Introduction**

Very few studies have been conducted for identification of causes and effects of injuries in children in specific geographical regions which are crucial for developing economically sustainable and effective intervention strategies and to reduce intentional injuries in children. The purpose of this study was to identify the common causes and consequences of injuries in school going children in Peshawar.

The leading cause of morbidity and mortality in school aged children is head injury. Impaired cognition, motor impairments, disruption of attention, information processing and psychiatric disturbances are some of the problems caused by head injury. These deficits occur even after mild to moderate head injury but are markedly greater after severe injury. In United Kingdom, head injury in infancy and childhood is the single most leading cause of death and permanent disability. Pakistan is sixth most swarming country in the world with current approximation of 185 million people, interestingly, 35.6% of our population comprise of children from 0-12 years. Although in Pakistan nationwide head injury data in school going age group is not available, but in fact children injuries are the leading cause of morbidity and mortality in Pakistan. The present study was undertaken to evaluate the frequency of head
injury among school going children to assess the magnitude of the problems and to collect actionable evidence and to form a base for meaningful preventive strategies to address this major public health issue in Pakistan.

There were over 100,000 deaths in children due to injury as reported by World Health Organization in 2002.  The rate of head injury in Pakistan is 81 out of 100,000 per annum with mortality rate of 15%, it is also a major cause of morbidity worldwide. Head injury is a crucial contributor to child’s short and long run illnesses while the fear of injury to the children is a major contributing factor to parent’s anxiety. Identification of causes and consequences of these injuries is mandatory for developing programs to reduce children injuries. Intervention programs for reducing these injuries will differ from one region to another due to cultural, social, economic differences.

Play is essential for development because it contributes to the cognitive, physical, social and emotional well-being of children and youth. Play offers an ideal perspective for parents to engage fully with their children. It has been observed that in spite of the benefits resultant from play for both children and parents, time for liberated play has been noticeably reduced for some children. Play is essential to educational setting, it ensures that school setting attends to the requirements of the social and emotional development of children as well as their cognitive development.

Sports Injuries

The susceptibility of children to sport injuries during play is due to a variety of reasons. According to various studies children below eight years are less coordinated and have slower reaction times than adults which may be a contributing factor to children injuries. The individual differences in development of children, which causes substantial differences in height and weight of children in same age group, may increase the risk of injury as when the children of varying rises play together. Children may take risks in certain activities because of their unawareness of the dangers associated to them; leading to injuries.
Head injury is a trauma to the head that does not necessarily include brain damage. Brain injury and head injury are often used interchangeably in medical literature. Brain may be damaged even if the skull is intact or the brain injury can be more brutal than the external head injury. Also, the brain may not be damaged even if external injuries are severe. Head injury during childhood consists of injury to scalp, skull fracture, concussions, bruises (contusions) and tears (lacerations) of the brain, accretion of blood within the brain and skill and injury to nerve cell throughout brain.

Head injuries fall into two forms, external and internal head injuries, external injuries usually consist of injuries to scalp while those injuries of skill blood vessels witting and the brain are included in internal head injuries. Another classification of head injury is that it may be open or closed. A closed head injury (non-missile) is the one in which the skull is not fractured whereas in penetrating or open head injury an object penetrate the skull. Brain injuries may be dispersing, occurring over a wide area, or central, located in a diminutive, specific area.

**Possible Consequences of Head Injury**

Most head injuries are not serious the severity of the head injury can be identified by certain indicators i.e. drowsiness, vomiting, irritability or paleness that prolongs for more than six hours. Moreover, loss of consciousness, inability to move or feel part of the body, coma, confusion, personality change, seizures, housed and inability to distinguish people or surroundings. In severe cases inability to sustain balance tribulations with speech or sight problems, or seeing drainage of clear fluid (cerebrospinal) from the nose or ear, severe headache are the symptoms that indicate the worsening of brain functioning. If any of them accrued in an adult or a child medical concentration should be sought instantly.

Play permits children to gain knowledge of how to work in groups, to share to discuss, to eliminate conflicts and learn self advocacy. Child driven play allows children to practice decision mating skills, to more at their own pace, discover their aptitude and ultimately engage fully in passions they wish to pursue explained homelier, but unattended problems including head injuries. About half of head injuries are the
result of an unsafe game environment. Falls, physical attack and misfortune during sports and recreational activities are also common children campaign explains that bicycle accidents are also a general cause of head injury related deaths and disability, especially among children.

This study would be beneficial to the society in terms that the findings would help to bring awareness impact of head injury on the play behavior of children. The basic aim of this program was to spread awareness among the school going children about the causes and prevention of head injury to control the prevalence rate of head injuries in the community. For this purpose study was conducted in twenty-four different schools of Peshawar including children from both genders. Based on the literature review, it is hypothesized (1) Head injury awareness program tends to affect the play behavior of children. (2) Head injury awareness program tends to provide more knowledge about the causes and consequences of head injury. (3) Head injury awareness program tends to provide more information about safety and preventive measures from head injuries.

METHOD

Sample

Inclusion Criterion

The children from grade 4th to 8th were considered only, both male and female gender from nine years to twelve years were included in the study

Exclusion Criterion

Children from grade one to three and grade nine to ten, for less than nine years and more than fourteen years.

Sampling technique

Non randomized convenience sampling technique was used; the data was collected in four months time. The data was gathered from schools of Peshawar.
Demographics
The participants in this study were (n=800) school going with the age ranging from nine years to twelve years from grade 4th to 8th was selected through non randomized convenient sampling technique. The total number of 800 children i.e. (n=400) were from grade 4th to 6th and 400 from grade 7th and 8th were randomly selected and completed both pre and post test questionnaires. Participants were categorized into two groups based on grades and sequences of research: children (4-6 grade) and children (7-8 grade). The male ratio in the selected sample was comparatively greater than females. A comparative study was conducted at schools on children less than 14 years of age. This study captured the majority of children who were enrolled in school and were present during the study period. The subjects were selected with the help of non randomized convenient sampling. A list of all children enrolled in the schools during the study period was obtained from the concern school. Demographic records were obtained from the child information from schools and each record was reviewed manually. The following child data were collected from the school records: date of birth, gender, date of admission, socio economical status, and academic progress. The collected data were analyzed using SPSS Statistics software.

Measures

1. **Demographic Information Scale**
   Demographic scale was developed and administered on participants in order to get general information about the age, gender, education, family status, and birth order of children.

2. **A Self Constructed Questionnaire**
   A self-constructed questionnaire was designed by the researcher in order to get information about causes and consequences of head injury. The questionnaire was composed of five sub-scales. Experts in child development were given the task to review the questionnaire to provide an indication of its practicability. The sub-scales on the questionnaire corresponding most closely to the evaluation were selected for the analysis. The first part of the questionnaire comprised of 10 items that dealt with the general knowledge about the causes of head injury. The second part consisted of 20 items that were about the child’s understanding of head injury. The third part includes 12 items which were about information about safe play. The forth part consisted of 14 items regarding preventive measures during play in order to reduce the
chances of head injury. The fifth and sixth part was concerned about the consequences of head injury having 22 items and was administered in class room situation before attending the awareness program. In order to determine the internal consistency of self-constructed questionnaire, item analysis was performed while using the technique of item-total correlation as specified. The item-sum correlations ranged from .366* to .898 ** and are significant at (p<.01) for all items of the scale.

3. Self-Constructed Questionnaire:
A thirty items questionnaire was used to get information about child’s opinion about head injury program, all items were required to answer as ‘Yes’ or ‘No’, was administered in field after attending the awareness program.

Procedure
Prior to collecting the data and seeking access to the participants, the researcher produced a formal letter to the administration of the schools; the said letter explained the nature of topic and its utility. The informed consent of principals was taken verbally that they allowed the researcher to come to their institution and conduct research. The research was designed to provide one hour Power point presentation concerning foremost causes of head injury, possible consequences of head injuries during play and preventive measures taken during play in order to reduce the incidence of head injuries among school going children were given. Picture and storytelling methods were adopted for children of grade four and five. At the end of presentation one hour question-answer session was arranged and students were permitted to ask questions about head injury and they were also inquired a few questions to ensure their comprehension. Secondly the participants were requested to fill in the thirty items questionnaire with the help of their teachers about their opinion regarding head injury program.

Results
Some background information about the selected sample was collected through the “questionnaire results”, of which are presented in this section.
Table-1 Demographics of Participants N= (800)

<table>
<thead>
<tr>
<th>Category</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>Mean</th>
<th>SD</th>
<th>Mean</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Family income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group-1 Grade 4th to 6th</td>
<td>400</td>
<td>55.95</td>
<td>13.44</td>
<td>14.76</td>
<td>10.95</td>
<td>48.46</td>
<td>47.50</td>
</tr>
<tr>
<td>Group-2 Grade 7th to 8th</td>
<td>400</td>
<td>55.04</td>
<td>15.23</td>
<td>14.09</td>
<td>11.40</td>
<td>46.91</td>
<td>25.33</td>
</tr>
<tr>
<td>F</td>
<td>800</td>
<td>1.06</td>
<td>(ns)</td>
<td>1.69</td>
<td>(ns)</td>
<td>1.98</td>
<td>(ns)</td>
</tr>
</tbody>
</table>

Results of the present study indicates the mean difference of three subgroups of children that are group-one children from grade 4th to 6th (55.95) and group-two children from grade 7th and 8th (55.04) and group three children from comparison groups (54.60) were similar in respect of socioeconomic status, academic achievements and religion.

Table-2: Within group analysis of pre-test and post–test means and t-value of group-1 about causes of head injury during play (N=800)

<table>
<thead>
<tr>
<th>Causes Of Head Injury (10 Items)</th>
<th>N</th>
<th>Pre-test X</th>
<th>Post -test X</th>
<th>t</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group-1 Grade 4th to 6th</td>
<td>400</td>
<td>5.27</td>
<td>8.88</td>
<td>3.61**</td>
<td>p&lt;.05</td>
</tr>
<tr>
<td>Group-2 Grade 7th to 8th</td>
<td>400</td>
<td>5.26</td>
<td>7.39</td>
<td>2.13**</td>
<td>p&lt;.05</td>
</tr>
</tbody>
</table>

Table-2 shows that there were also significant differences between the pre-test (before attending the awareness program) and post-test (after attending the awareness program) means of the group-2 on their knowledge about the causes of head injury after this awareness program. The difference between the scores on sub-scale of knowledge about head injury within group was found significant. Children from group-1(grade 4th to 6th) have gained more knowledge about the causes of head injury after attending the awareness program. The difference between the
scores on sub-scale of knowledge about head injury within group was found significant.

Table-3: Within group analysis of pre-test and post –test means and t-value of group-1 about general idea of head injury during play (N=800)

<table>
<thead>
<tr>
<th>General Idea About Head Injury.(20 Items)</th>
<th>N</th>
<th>Pre-test ( \bar{X} )</th>
<th>Post-test ( \bar{X} )</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group-1 Grade 4th to 6th</td>
<td>400</td>
<td>17.9</td>
<td>18.4</td>
<td>0.5</td>
<td>p&lt;.05</td>
</tr>
<tr>
<td>Group-2 Grade 7th to 8th</td>
<td>400</td>
<td>16.85</td>
<td>18.75</td>
<td>1.9</td>
<td>p&lt;.05</td>
</tr>
</tbody>
</table>

Table-3 shows that majority of the children from group-1 were found to be more informative after attending the awareness program. The group analysis within two groups indicates significant differences from pre-test to post test. The difference between the scores on sub-scale of general idea about head injury within group was found significant. Children from group-2 (grade 7th to 8th) are clearer about the meaning of head injury. Furthermore this awareness program helps them to understand more about the causes and consequences of head injury during play. The difference between the scores on sub-scale of general idea about head injury within group was found significant.

Table-4: Within group analysis of pre-test and post –test means and t-value of group-1about safety measures from head injury during play (N=800)

<table>
<thead>
<tr>
<th>Information About Safety Measures. (12 items)</th>
<th>N</th>
<th>Pre-test ( \bar{X} )</th>
<th>Post-test ( \bar{X} )</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group-1 Grade 4th to 6th</td>
<td>400</td>
<td>34.50</td>
<td>40.61</td>
<td>6.11</td>
<td>p&lt;.01</td>
</tr>
<tr>
<td>Group-2 Grade 7th to 8th</td>
<td>400</td>
<td>39.20</td>
<td>41.77</td>
<td>2.57**</td>
<td>p&lt;.01</td>
</tr>
</tbody>
</table>

Table –4 shows the mean difference between the pre and posttest means of groups on the score of subscale of safety measures. Group-1 indicates
a difference between pre and post testing on information about safety measures from head injuries. These findings have provided evidence that the students exceeded in knowledge of head injury awareness as well as about the safety measures after attending the awareness s program. The mean difference between the pre and post -test means of groups on the score of subscale of safety measures. Group-2 indicates a difference between pre and post testing on information about safety measures from head injuries. This awareness program also influenced their play patterns by making them more aware about the possible causes of head injury. This program appeared to have had a positive impact on the children play activities. Therefore, based on data from the study, head injury awareness program has the potential to provide children with information and understanding which can increase their carefulness in present and future play activities by making them more conscious about playing safe games.

Table-5: Within group analysis of pre-test and post –test means and t-value of group-1 about preventive measures from head injury during play (N=800)

<table>
<thead>
<tr>
<th>Information about preventive measures (14 Items)</th>
<th>N</th>
<th>Pre-test $\bar{X}$</th>
<th>Post-test $\bar{X}$</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group-1 Grade 4th to 6th</td>
<td>405</td>
<td>16.56</td>
<td>18.62</td>
<td>2.06</td>
<td>p&lt;.01</td>
</tr>
<tr>
<td>Group-2 Grade 7th to 8th</td>
<td>400</td>
<td>18.01</td>
<td>18.21</td>
<td>0.54</td>
<td>p&lt;.01</td>
</tr>
</tbody>
</table>

Table –5 shows the mean difference between the pre and post -test means of groups on the score of subscale of preventive measure. Group-1 indicates a difference between pre and post testing on information about preventive measures from head injuries. The mean difference between the pre and post- test means of groups on the score of subscale of preventive measure. Group-2 also indicates a difference between pre and post testing on information about preventive measures from head injuries.
Table-6: Within group analysis of pre-test and post –test means and t-values of group-1 about awareness about consequences of head injuries. (N=800)

<table>
<thead>
<tr>
<th>Awareness About consequences of Head Injury (10 Items)</th>
<th>N</th>
<th>Pre-test X</th>
<th>Post -test X</th>
<th>t</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group-1 Grade 4th to 6th</td>
<td>405</td>
<td>52.07</td>
<td>55.24</td>
<td>3.17</td>
<td>p&lt;.05</td>
</tr>
<tr>
<td>Group-2 Grade 7th to 8th</td>
<td>400</td>
<td>53.83</td>
<td>55.94</td>
<td>2.11**</td>
<td>p&lt;.05</td>
</tr>
</tbody>
</table>

Table-6 indicates that there is a significant difference in scores of from pre to post testing on sub-scale of awareness about the consequences of head injury. Similarly, analysis of scores about the awareness about consequences of head injury showed significant results. All the groups learn more about the consequences of head injuries after attending this awareness program. Results indicate that there is a significant difference in scores of from pre to post testing on sub-scale of understanding consequences of head Injury. Similarly, analysis of scores about the awareness about consequences of head injury showed significant results.

**Discussion**

This research addresses a variety of risk factors that have reduced play, including insecure play areas, inadequate safety measures, modifications in family organization along with augmented awareness to academics and enrichment activities at the expense of cranny or free child-centered play. This research offers guidelines on how head injury awareness program conducted in schools can help children about safety measures and will reduce the risk of head injuries among school going children. The awareness programs not only benefited the child but were also helpful for families, school systems, and communities. Furthermore, helps them to consider how best to ensure that play is protected as they seek the balance in children’s lives to create the optimal developmental milieu. These findings have provided evidence that the students in the class room and field groups exceeded in knowledge of head injury.
awareness as well as their causes and consequences. Furthermore this head injury awareness program also influenced their play patterns by making them more aware about the causes of head injury. This program appeared to have had a positive impact on the children play activities. Therefore, based on data from the study, head injury awareness program has the potential to provide children with information and understanding which can increase their carefulness in present and future play activities by making them more conscious about playing safe games. Overall, the findings are encouraging. Evidence indicates that head injury awareness did make a difference. Children increased their knowledge of causes, impact, consequences, safety measures and play patterns. The study verified positive impact of this program on children providing useful information about safety measures.

Conclusion

The additional awareness program in schools appeared to have more positive impact on children in making them aware about head injury and its consequences. Therefore, based on data from this study, head injury awareness program has the potential to provide children with information and understanding which can increase their knowledge about the prevention of head injuries and make them more careful and minimize the chances of sport injuries during play.

Recommendations

Research found that falls were the main cause of injury-related admission to the hospital leading to fractures and head injuries in children. Some recommendations are made in order to prevent such injuries. a) Emphasis on continuous education on safety for teachers and children and adult supervision during play is a powerful factor in preventing head injuries. b) Teachers and children should be well-informed on the importance of safety issues at home and school, as well as the proper supervision and modeling that they should provide for children under their care. c) The necessity of modernizing playgrounds will minimize risk of head injuries as children are safer playing in a public playground than on the road.
References


