Original Article

Effect of Educational Module on Knowledge of Primary School Teachers Regarding Early Symptoms of Childhood Psychiatric Disorders

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ABSTRACT

Context: University-based pre-service educational programs do not adequately prepare the teachers to have sufficient knowledge and skill for identifying a wide variety of symptoms related to mental health disorders among children. **Aims:** To assess the effect of educational module on knowledge of primary school teachers regarding early symptoms of childhood psychiatric disorders. **Settings and Design:** A pre experimental study on a sample of 35 primary school teachers was done in selected schools of Delhi. **Materials and Methods:** Self-instructional module on early symptoms of childhood psychiatric disorders (SIM on ESCD) was developed. Data was collected by using standardized tools including the structured questionnaire for 'Demographic and selected variables' and pre-test knowledge questionnaire. The subjects were exposed to SIM on ESCD for a period of 15 days. Knowledge regarding early symptoms of childhood psychiatric disorders was assessed twice, first one being before exposure to module and the next one on 16th day of exposure to module. **Statistical Analysis:** Data were analyzed using statistical package STATA 9.0 version. **Results:** Primary school teachers who have been teaching in government schools had high pre-test knowledge score than that in private sector. There was significant difference in mean knowledge score of primary school teachers before (9.71) and after (15.60) the administration of SIM on ESCD. Younger teachers and those who had less years of teaching experience had more knowledge gain score than those who were older and had more teaching experience. **Conclusions:** In the absence of adequate pre-service and in-service education of primary school teachers on early symptoms of childhood psychiatric disorders, SIM on ESCD is a highly effective and viable method for improving primary school teachers' knowledge on early symptoms of childhood psychiatric disorders.

Key words: *Autistic disorders, childhood psychiatric disorders, conduct disorders, attention deficit hyperactivity disorder, early symptoms, educational module (SIM on ESCD), effect, knowledge, learning disorders and communication disabilities, primary school teachers*

INTRODUCTION

The global burden of disease indicates that by the year 2020, childhood neuropsychiatric disorders will increase by more than 50% internationally to become one of the five most common causes of morbidity and disability among children. An exploratory study on adult attention deficit hyperactivity disorder (ADHD) in India revealed

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that children who are diagnosed with ADHD grow up and become an adult patient of ADHD. Identifying them early and treating them would reduce the burden of this disorder and may help in better treatment of the co-morbid conditions in these patients.[1] Similarly, if learning disabilities are not picked up at an earlier stage and case-appropriate management strategies are not adopted, there is a possibility of worsening of the child's academic and social functioning.[2]

Early identification and intervention have shown better prognosis in a number of childhood psychiatric disorders including disruptive and autistic spectrum disorders. Therefore, it is important to sensitize the teachers about childhood psychiatric disorders and make them understand and utilize their crucial role in early identification of problems and early referral. University-based pre-service educational programs do not adequately prepare the teachers to have sufficient knowledge and skill for identifying a wide variety of symptoms related to mental health disorders.[3] Hence, this study was undertaken to find out the possibility of improving knowledge of primary school teachers on early identification of childhood psychiatric disorders. The objectives of the study were (1) To assess the knowledge of primary school teachers regarding early symptoms of childhood psychiatric disorders before and after the administration of self instructional module on early symptoms of childhood psychiatric disorders (SIM on ESCD). (2) To find out the association between knowledge gain score of primary school teachers regarding early symptoms of childhood psychiatric disorders and selected variables. (3) To find out the acceptance of 'SIM on ESCD' by primary school teachers.

MATERIALS AND METHODS

A pre-experimental, one group before-after design was adopted for the study. The data were collected from 35 primary school teachers who were selected by total enumeration sampling from four different schools of Delhi. A structured questionnaire was used for assessing the demographic data of primary school teachers. The knowledge regarding early symptoms of childhood psychiatric disorders was assessed by using a structured knowledge questionnaire which was developed by the researcher. Reliability of the tool was established by using test-retest method. (r=0.91). Pre-test assessment was done on first day to see the knowledge of teachers regarding early symptoms of childhood psychiatric disorders. A self-instructional module on early symptoms of childhood psychiatric disorders (SIM on ESCD) was distributed to the primary school teachers followed by introductory session of half an hour duration to explain the SIM. The subjects were asked to study the SIM for a period of 15 days. The researcher gave phone calls

to subjects on 7th and 14th day to remind them to read and review the SIM and also about the post-test date. Post test was done on 16th day of exposure to SIM on ESCD. Data were analyzed using statistical package STATA 9.0 version.

RESULTS

Profile of socio-demographic characteristics of subjects
The mean age of the subjects was 36.37 years (SD=9.4) and the mean years of experience was 11.43 years (SD=7.4). Majority (97%) of the subjects were female. Most of the subjects were married (85%) and most of them followed Hindu religion (80%). Three-fourth (77%) of the subjects lived in nuclear families. More than half of the subjects (54%) had the monthly family income of Rs. 10,000-20,000. More than half (57%) of the subjects had the educational qualification of graduation or post graduation with B.Ed. Two-thirds (68%) of the subjects were teaching in primary classes and most of them (71%) had 30-40 students in each section to teach.

Profile of subjects according to selected variables (past experience regarding childhood psychiatric disorders)
Half of the subjects (51%) had come across with children who had psychological disorders in past 1 year. Most (74%) of the subjects had studied regarding childhood psychological disorders in their teacher's training. More than half (57%) of the subjects never attended any in-service education program on childhood psychological disorders. Two-thirds (63%) of subjects had read articles on childhood psychological disorders from various news papers. More than half (67%) of the subjects reported that they were not confident in identifying a child with childhood psychological disorders and all of them felt the need for having frequent in-service training programs on childhood psychiatric disorders.

Difference in pre-test knowledge score of subjects according to their selected variables
Pre-test score of subjects between different types of school was significantly different (P=0.001). However, post-hoc 'Bonferroni test' showed that the significant difference in pre-test knowledge score was present between the subjects of government school and public school (Trust). There was also a significant difference between subjects from different family income groups (P=0.001). Post-hoc test showed that a significant difference was present between pre-test knowledge score of subjects who had monthly family income of < Rs. 20,000 and who had the monthly family income between Rs. 20,000 and Rs. 40,000.

Difference in pre-test knowledge score of subjects according to their experience with childhood psychiatric disorders

Pre-test knowledge score of subjects was associated with their selected variables i.e., those who attended in-service education program in the past ($P=0.001*$) and also for subjects who were confident to identify children with psychiatric disorders ($P=0.011*$).

As shown in Table 1 that, mean pre-test knowledge score of subjects was 9.71 ± 4.1, whereas the mean post-test knowledge score of subjects was 15.60 ± 3.3. Both these scores were significantly different from each other ($P=0.001*$).

Hence, it can be interpreted that, self-instructional educational module (SIM on ESCD) significantly increased the knowledge of subjects regarding early symptoms of childhood psychiatric disorders.

Association of knowledge gain score of subjects with their demographic characteristics (selected variables)

Knowledge gain score of subjects was significantly high in the unmarried group ($P=0.01$) and in those subjects who taught in private schools ($P=0.003$) and followed Hindu religion ($P=0.02$).

Association of knowledge gain score of subjects with their past experience with childhood psychiatric disorders (selected variables)

Knowledge gain score of subjects was significantly high in subjects who never attended in-service education in the past than those who attended ($P=0.028$).

Level of acceptance of SIM on ESCD by primary school teachers

As shown in Figure 1 that, there was 100% agreement of subjects on the following acceptance criteria of SIM i.e., (a) content is based on objectives, (b) content is clear and unambiguous, (c) sequence is good, (d) motivating to read, (e) interesting to read, and (f) practicable to implement. Whereas, some of the subjects (11%) have disagreed to the criteria, i.e., language is clear and simple and one-fourth of the subjects (23%) have disagreed to the criteria of 'easy to understand'.

Hence, it can be interpreted that SIM on ESCD was an acceptable educational module and also practicable and viable method for the use of primary school teachers.

Additional findings no. 1

Identification of case vignettes in each childhood psychiatric disorders by subjects (pre-test and post-test comparison).

Case vignette no. 1 (ADHD)
As shown in Table 2, the pre- and post difference in the identification of diagnosis of case vignette on ADHD by subjects was significant ($P=0.001*$).

Case vignette no. 2 (autism)
As shown in Table 3, the pre- and post difference in the

Table 1: Comparison of knowledge score of subjects before and after intervention (SIM)

Knowledge score of subjects	Mean±SD	Minimum score	Maximum score	*P* value
Pre-test	9.71±4.1	2	18	0.001*
Post-test	15.60±3.3	9	22	

*Paired *t* test *P*<0.05, *n*=35, SIM – Self-instructional module

**Table 2: Pre and post-test comparison of case vignette no. 1 (ADHD)**

Case vignette no. 1 (ADHD)	Identified the diagnosis correctly (f)	Could not identify the diagnosis correctly (f)	*P* value
Pre-test	12	23	0.001*
Post-test	28	7	

*McNemar's test *P*<0.05, *n*=35, ADHD – Attention deficit hyperactivity disorder

Table 3: Pre-post-test comparison of case vignette no. 2 (autism)

Case vignette no. 2 (Autism)	Identified the diagnosis correctly (f)	Could not identify the diagnosis correctly (f)	*P* value
Pre-test	12	23	0.001*
Post-test	28	7	

*McNemar's test *P*<0.05, *n*=35
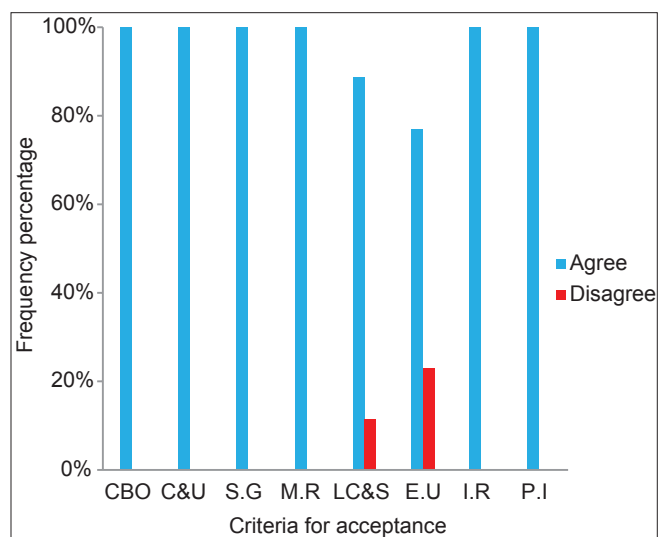
Figure 1: Acceptance of SIM on ESCD by subjects (*n*=35), CBO – Content based on objectives; C&U-Content clear and unambiguous; S.G – Sequence is good; M.R – Motivating to read; LC and S-Language is clear and simple; E.U – Easy to understand; I.R – Interesting to read; P.I – Practicable to implement

identification of diagnosis of case vignette on autism by subjects was significant (*P*=0.001*).

Case vignette no. 3 (conduct disorder)
As shown in Table 4, the pre- and post difference in the identification of diagnosis of case vignette on conduct disorder by subjects was significant (*P*=0.001*).

Case vignette no. 4 (specific scholastic skills disorders)
As shown in Table 5, the pre- and post difference in the identification of diagnosis of case vignette on specific scholastic skills disorders by subjects was significant (*P*=0.001*).

Comparison of pre-test and post-test knowledge score of subjects according to childhood psychiatric disorders under study

As shown in Table 6, the knowledge score of subjects in each disorder significantly increased after the administration of SIM on ESCD compared to the knowledge score before exposure to SIM. Hence, it can be interpreted that pre-test and post-test difference in knowledge scores of subjects was real not by chance.

DISCUSSION

Having optimum knowledge regarding childhood psychiatric disorders among primary school teachers can help in making early identification of symptoms which would eventually help in reducing the burden of these disorders. The present study reported a significant increase in knowledge of primary school teachers regarding early symptoms of childhood psychiatric disorders after exposure to the self instructional module (SIM on ESCD). This finding was similar with another study in which in-service training on childhood psychiatric disorders could improve teacher's knowledge.[4] In the present study, pre-test knowledge score was high in primary school teachers who were teaching in government school as well as among those who had attended in-service training programs in the past. Whereas, after the intervention, primary school teachers from private schools gained more knowledge than other types of school, it might be due to their felt need to learn more about childhood psychiatric disorders. Most of the primary school teachers (74%) in the present study had learnt about childhood psychiatric disorders during their teachers' training. However, their knowledge score was not significantly different from those who did not study these topics during their training. The possible reason could be that, though at the pre-service level teachers learn basic general psychology, they do not receive specific training to identify a wide variety of symptoms related to childhood psychiatric disorders.[5]

From the present study findings, it can be interpreted that after the exposure to SIM, all of the primary school teachers had better scores in identification of symptoms in the case vignettes than other type of questions (Multiple choice questions-MCQ) on early symptoms of childhood psychiatric disorders. This finding is supported by the fact that, a group of symptoms can be better identified than a single symptom for a specific disorder, because some of the symptoms of childhood psychiatric disorders overlap each other. This is quite congruent with one previous study, in which 72% of teachers reported a low level of knowledge on ADHD while 60% were able to identify two out of three case vignettes of children with characteristics of ADHD.[6] This study was limited in many ways. Firstly, randomization of study setting could not be done. Secondly, though history was taken from the subjects regarding any other exposure (other than SIM) related to information on childhood psychiatric disorders during study period, they could have concealed this information from the researcher. However, SIM on ESCD was a very good and viable method for improving primary school teachers' knowledge on early symptoms of childhood psychiatric disorders.

REFERENCES

1. Sitholey P, Agarwal V, Sharma S. An exploratory clinical

Table 4: Pre-post-test comparison of case vignette no. 3 (conduct disorder)

Case vignette no. 3 (conduct disorder)	Identified the diagnosis correctly (f)	Could not identify the diagnosis correctly (f)	*P* value
Pre-test	12	23	0.001*
Post-test	30	5	

*McNemar's test *P*<0.05, *n*=35

Table 5: Pre-post-test comparison of case vignette no. 4 (specific scholastic skills disorders)

Case vignette no. 4 (specific scholastic skills disorders)	Identified the diagnosis correctly (f)	Could not identify the diagnosis correctly (f)	*P* value
Pre-test	19	16	0.001*
Post-test	33	2	

*McNemar's test *P*<0.05, *n*=35

Table 6: Comparison of pre-test and post-test knowledge score of subjects according to childhood psychiatric disorders under study

Childhood psychiatric disorders	Pre-test score mean±SD	Post test score mean±SD	*P* value
ADHD	2.37±1.37	3.71±1.22	0.001*
Conduct disorder	1.94±1.23	3.34±1.11	0.001*
Autism	1.63±1.19	3.17±1.27	0.001*
Scholastic skills disorders	2.11±1.27	3.20±0.86	0.001*
Speech and language disorders	1.66±0.90	2.17±1.33	0.039*

*Wilcoxon signed Ranks test *P*<0.05, ADHD – Attention deficit hyperactivity disorder

study of adult attention deficit/hyperactivity disorders from India. Indian J Med Res 2009;129:83-8.

2. Jawaid A, Zafar AM, Naveed A, Sheikh S, Waheed S, Zafar MA, *et al*. Knowledge of primary pediatric care providers regarding attention deficit hyperactivity disorder and learning disorder: A study from Pakistan. Singapore Med J 2008;49:985.

3. Rones M, Hoagwood K. School-based mental health services: A research review. Clin Child Fam Psychol Rev 2000;3:223-41.

4. Barbesi WJ, Oslen RD. An ADHD educational intervention for elementary school teachers. J Dev Behav Pediatr 1995;16:192-5.

5. Koller JR, Bertel JM. Responding to today's mental health needs of children, families and schools: Revisiting the pre-service training and preparation of school-based personnel. Education and treatment of children. 2006; 29:197-217. Available from: http://www.reachoflouisville. com/kerry/kerry/h%20Needs%20of%20Children,%20 Families%20and%20Schools%20Revisiting%20the%20 Preservice%20Training%20and%20Preparation%20 of%20School-Based%20Personnel.pdf [Last accessed on 2011 May 25].

6. González TG, González M, Ramírez B, Rivera M. Attention deficit hyperactivity disorder in five schools of the San Juan metropolitan area: assessment of teacher's knowledge. Bol Asoc Med *P* R 2009;101:31-5.

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