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Journal of Mental Health Education

The **Journal of Mental Health Education** is the official publication of **The Department of Mental Health Education, NIMHANS**. The journal is peer-reviewed, is published annually, and accepts high-quality work or writings in the broad fields of mental, neurological and neurosurgical health and promotion. With the goal of dissemination of knowledge to increase the wider public awareness of mental health and to promote research in the field Mental Health Education, the Department of Mental Health Education publishes the Journal of Mental Health Education, a peer-reviewed online Journal with Annual print compilation of issues. The first issue of the journal was published in 2017 under the Editorship of Prof. S.K. Chaturvedi and Dr. Meena K.S.

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Editorial

Health Education for Bipolar Disorder- A key towards empowering patients

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“People with bipolar disorder experience more suffering than most – they did not ask for it. Our job is to reduce their suffering, irrespective of what we call our medications and to find new treatments” – Nierenberg, 2017

The above statement aptly summarizes what clinicians must do for persons with bipolar disorder (BD). BD is a chronic mental health disorder characterized by pathological changes in mood varying from excessive happiness (mania) to extreme sadness (depression) that persists for weeks or months. The prevalence of BD is at about 1-2% of the general population. The national mental health survey pegged the prevalence of BD in the Indian population at about 0.5% which translates into 65 lakh individuals with this disorder, with a treatment gap of more than 70%. Suicide is fairly common in BD.

The challenges that clinicians face in treating BD include different polarity of mood episodes, frequent relapses and recurrences, incomplete recovery or remission, residual symptoms between episodes, presence of psychotic symptoms and comorbidities. An ideal mood stabilizer remains elusive despite newer additions to the treatment

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armamentarium, with lithium still being the mainstay of treatment. Non-adherence to treatment is the biggest challenge to treatment. From a patient perspective, the major challenges include denial or reluctance to accept the diagnosis, stigma, misconceptions about the illness, inadequate support from the health systems and poor awareness about the disorder among patients and their families leads to poor adherence. In addition, intolerance to side-effects also impacts treatment adherence negatively. The economic burden of the disorder is significantly high (Nestsiarovich, 2017).

Health education or psychoeducation is an important component of treatment in patients with BD. There is sufficient evidence that health education enhances recovery and improves treatment outcomes in BD. One of the earliest reports on group psychoeducation in 120 remitted BD subjects reported significantly reduced the number of relapsed patients and the number of recurrences per patient, and increased the time to depressive, manic, hypomanic, and mixed recurrences. The number and length of hospitalizations per patient were also lower (Colom, 2003). Group psychoeducation that focussed on caregivers also reduced the rates of recurrence for manic/hypomanic episodes (Reinares, 2008). Further, group psychoeducation was shown to reduce any recurrence and increase the time to recurrence of mood episodes over a five-year period (Colom, 2016).

A review article concluded that “psychoeducation, used alone or as a component of more complex interventions, makes it possible to improve the course of the illness, notably by increasing the patients' and their families' knowledge of the disorder and of treatment options, by decreasing the risk of (hypo)manic or depressive relapse and of hospitalization and by improving treatment compliance and psychoeducation should be part of the integrated treatment of BD”.

It is with this objective of creating awareness about BD and its treatment, that world bipolar day is being observed every year on March 30. Let's educate and empower our patients with BD.

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Original Article

Development of videos: An innovative approach to parent training

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ABSTRACT

Background of The Study: Normative misbehaviours such as non compliance, temper tantrums, and aggression can be stressful for parents. While these misbehaviours may disappear in the course of development, they may put children at risk for psychopathology if not handled sensitively. While parent management training is proven to be the evidence-based treatment option, it is important to develop innovative and effective ways of disseminating it to parents in need. This paper presents the development of parent-training videos to impart parent management training.

Methods: The study was carried out in two stages: the needs assessment stage and the video development stage. In the needs assessment stage, the sample size was 34 parents, and the tools

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used were the Parenting Stress Index and a semi-structured interview. Data collection was carried out from parents in the community until data reached saturation, and was subjected to content analysis. In the video development

stage, a total of 11 child actors and 14 parent actors volunteered to act in the videos. The tools used were a screenplay, video shooting equipment, editing software, and expert feedback form. A total of 14 videos were shot. Descriptive statistics and inductive content analysis were carried out.

Results: The findings will highlight challenges to parenting within a rapidly changing socio-cultural milieu, and the steps involved in developing parent-training videos for child behaviour problems as a preventive and promotive measure

Keywords: Parent-training videos, children, Behaviour problems

Introduction:

Normative misbehaviours such as non-compliance, temper tantrums and aggression can be stressful for parents. While these misbehaviours may disappear in the course of development, they may put children at risk for psychopathology if not handled sensitively. The major hazards to development in children are overly strict discipline, over-protection, excessive demands or competition and persistent failure resulting in feelings of inferiority, inadequacy and incompetence. ^[1]

Parenting in contemporary India can be conceptualized as striving for a delicate balance between deep-rooted Indian traditional notions of child rearing, and new challenges within a rapidly changing socio-economic milieu. There is a change in the lifestyle of urban women, role strains on mothers, disappearance of the joint family system, excessive distraction and increasing rates of divorce, to name a few of the complexities. Despite the shift from exclusivity to interchangeability in parenting roles, mothers continue to take on primary responsibility for the care of young children in India. ^[2]

Parent Management Training (PMT) is proven to be the evidence-based treatment option. Numerous studies have demonstrated that videos are superior to written materials, lectures, live modeling, or rehearsal. ^[3,4] There are few parents training videos available for parents of children with Behavioural disturbances, for parents of children with special needs like Autism, Intellectual Developmental Disorder etc. ^[5,6,7,8] Indian literature on parenting and parenting intervention explicitly recommends the use of videos in parent training due to their well-documented advantages. ^[2,9,10] The paper proposes to make a small beginning to develop parent-training videos for the first time in the Indian setting, as per published literature till 2020.

Materials and Methods:

The study was carried out after obtaining approval from NIMHANS ethics board. The study was carried out in two stages: Needs assessment stage and Video development stage. Written informed consent was obtained from the participants (Principals of schools, pediatricians, general physicians, parents, children and actors) across both stages of the study. Limits to confidentiality of the information elicited were explained. Participants were informed that there were no tangible benefits for participation in the study and that they could withdraw from the study at any point of time.

Needs assessment stage:

Sample:

Snowball sampling was used to contact parents from the community for the study. Parents of three to eight years old children who reported stress in the role of parenting over and above other life stressors were included. Parents with a diagnosable psychiatric condition (currently symptomatic) or having a disabling physical illness and children with diagnosable psychiatric, neurological or prolonged physical illness/ disabilities were excluded. Parents were either directly recruited or recruited using schools or pediatricians as entry points. The final sample size recruited was 34 parents (five father- mother dyads and 24 mothers alone). Information about 33 children aged between three and eight years was obtained. Data was collected until problem Behaviours derived from interviews reached saturation. Parenting suggestions were offered to parents who requested the same. For parents requiring further help, referrals were made to help them obtain professional guidance.

Tools:

Screening tools:

- Preliminary two question interview: This was prepared for the study, to establish whether a given *parent experiences difficulty* in handling any of the child's Behaviour problems in the last six months, *over and above other difficulties*, if any.

Only parents who reported 'yes' were included in the study.

- Mini International Neuropsychiatric Interview version 6.0 (M.I.N.I. 6.0).^[11]
The M.I.N.I. is a short, structured psychiatric interview developed for DSM-IV and ICD-10 psychiatric disorders. The M.I.N.I. has been used by mental health professionals and health organizations in more than 100 countries. With an administration time of approxi-

-mately 15 minutes, it elicits all the symptoms listed in the symptom criteria for DSM-IV and ICD-10 for 24 major Axis I diagnostic categories, one Axis II disorder and for suicidality. In the present study, M.I.N.I. 6.0 was used to exclude parents who are currently symptomatic with diagnosable psychiatric disorders.

- The Strengths and Difficulties questionnaire. ^[12]

The Strengths and Difficulties Questionnaire (SDQ) is a brief Behavioural screening questionnaire for children aged between 3-16 years developed by Goodman in 1997. It has five subscales: hyperactivity, emotional symptoms, conduct problems, peer problems and pro-social Behaviour scale. As a screening tool in the current study, the parent version of the 25 psychological attributes with the ‘impact supplement’ for 3 (and 4) year olds and 4–16-year-old children were used. Children's symptoms which were suggestive of the child being a ‘case’ with mental health disorders were excluded, i.e., a score of above 17 on the total difficulties score.

Child and parent data collection tools:

- General information schedule: This schedule was prepared for the study to obtain personal and family history of the child and other psycho-social information.
- Semi-structured interview schedule: This interview schedule was also prepared for the purpose of the study to obtain as many detailed anecdotal instances of common problem situations faced by parent/s following a broad ‘antecedent-Behaviour-consequence’ framework. Special attention was given to capture subtle nuances and details to make it appropriate for conversion into vignettes and screenplay.
- Parenting Stress Index- Short form (PSI/SF). ^[13]

The PSI Short Form was developed by Abidin in 1986. This tool yields a ‘Total Stress’ score from three scales: Parental Distress (items signal parental distress coming from a variety of aspects of their experience), Parent-Child Dysfunctional Interaction (items indicate the degree to which the parent derives satisfaction from interaction with their child and how much the child meets their expectations), and Difficult Child (items here are related to the child’s temperament). In the current study, this scale was used to understand the extent of parenting stress and to identify the sources of stress in terms of certain salient child characteristics, parent characteristics, and situations that are directly related to the role of being a parent.

Procedure:

Total of 40 parents were contacted. One dyad refused to participate due to difficulty in taking time out from their work schedules, and another dyad refused consent because the father did not perceive any difficulties in parenting their child and also, he did not consent his wife to take part in the study. Hence, only 36 parents (six father-mother dyads and 24 mothers) provided consent to participate. After mothers provided informed consent, every parent was met individually at a mutually convenient time and venue. The screening tools were administered. One father-mother dyad was excluded from the study because the score on SDQ was interpreted as 'abnormal'. They were offered referral related guidance for seeking professional help for the child.

The general information schedule and the questionnaires were administered to the final sample. Fathers were involved as informants in the semi-structured interview alone. This process took about 60 minutes with each mother/father-mother dyad.

Qualitative analysis was carried out for the data collected in the semi-structured interview. This analysis led the researcher to choose which problem Behaviours were relevant to be converted into videos based on the frequency with which they were reported (those that appeared frequently were chosen). Antecedents and consequences pertaining to a specific problem Behaviour from all interviews were analyzed to see which situations best lent themselves to be video graphed. In this way, vignettes were prepared for each problem Behaviour in a 'negative-positive' format.

Video development stage:

The researcher underwent brief training in the technical aspects of videography at the "The Film making Course" at the Suchitra Cinema and Cultural Academy, Bangalore. Video development stage consists of video shooting, video editing and evaluation of the contents. Firstly, vignettes from the needs assessment stage were converted into formal screenplays. Potential parent-child actors were contacted. Those who provided informed consent and assent were recruited for acting. The screenplay was handed over to actors and the videographer beforehand. Time and venue for the shooting were fixed based on the mutual convenience of all the parties involved (actors, videographer and researcher). The age of the child for any given video was decided by averaging the age of the children in whom the problem Behaviour was reported in the interviews. The actors were reassured that they didn't have to memorize the dialogues. Parents and children also volunteered with their own dialogues because they felt that the situation in the video was an

‘every day event’ for them. They were free to do so as long as the dialogues corroborated with the message conveyed in the voice-over. The professional videographer recorded the play directed by the researcher and acted by the child and the adult actor in a home setting using the video shooting equipment. The video was then edited by the researcher and the videographer using an editing software. Each video took about 2 to 4 hours to shoot and 7-8 hours to edit.

Sample:

Parents and children conversant in English, with an ability to demonstrate some basic acting skills on request of the researcher (such as depicting sadness, repeating a line in an angry tone etc.) were included. A total of 11 child actors and 14 parent actors volunteered to act in the videos. Informed consent and assent were obtained from parent and child actors. Five parents reported reluctance to act and hence refused informed consent. It was assured to parents and children that the videos will not reveal personal identifying information, if they wished so. Actors were informed that videos may be used in NIMHANS or at other professional centers such as schools or clinics for purposes of parent education.

Procedural details for Video development:

- **Screenplay:** Every video developed in the study was guided by a screenplay. The structure of the formal screenplay and voice-overs was obtained from suggestions given in the book “Screenplay- Writing the Picture”.^[14] The contents of the screenplay were based largely on an analysis of interviews with parents in the needs assessment sub-stage. Techniques offered in the ‘positive ‘interactions screenplays were derived from three sources: a) theory and literature on Behaviour modification and positive parenting, b) Indian research on parenting interventions,^[10] and c) success experiences of the participant parents and inputs from the research guide.
- **Video shooting equipment:** Professional 1000 watts sun gun lighting, boom microphone and Panasonic HD camera were used to shoot the videos. The researcher benefitted from the expertise of a qualified videographer in this process.
- **Editing software:** The licensed version of the Avid Studio Toolkit version 5.7 software was used for the purpose of editing.

- Video feedback form for experts: This form was prepared for the purpose of the study to evaluate the credibility and dependability of the videos developed. Following five questions were prepared:
 - o The video has two parts to it. What do you think is the basic difference between the two parts?
 - o Any suggestions for future videos?
 - o What are the techniques/suggestions that you noticed in this video?
 - o Did you feel that the techniques suggested are relevant to the problem Behaviour?
 - o What do you think is the problem Behaviour being addressed in this video?

Methodological rigor:

Across the two stages, efforts were made to establish methodological rigor. Following is a description of the concrete research actions taken to this end.

Credibility:

- Pilot phase was conducted to *tune the ability of the researcher* to obtain desired information in a manner that aided video development.
- During the process of interviewing, parents were prompted to *elaborate* antecedents and consequences of every problem Behaviour in detail. The researcher *repeated and reframed* the information collected in order to confirm the accuracy of her understanding.
- *Triangulation* was carried out in the information collected by means of inviting fathers to provide their version of the difficult parenting situations. 5 fathers were available during the interview. When mothers were the sole informants, they were requested to provide their understanding of what fathers and other members of the family felt / did in a given situation.
- There was *prolonged contact* (for about a month) maintained with some parents after the interviews. This was done when parents were provided suggestions to handle some of the problem Behaviours in their children. They were followed up by the researcher every week over the telephone to enquire about the implementation and effectiveness of the techniques suggested. They were also free to enlighten the researcher about any new technique that helped them. This helped to increase the credibility of the techniques suggested in the videos, basing them strongly on the feasibility in real-life.

- *Member checking* was carried out, where the videos developed from the information obtained from particular parents were shown back to them. The parents confirmed an accurate representation of the information provided by them in the videos. It was also carried out as a part of the research audit trail, the elaboration of which is subsumed under the next sub-head.

Dependability:

- *Two independent raters* blind to the researcher's coding, coded a portion of the interview transcripts. There was high agreement amongst the three coders in the coding of problem Behaviour and techniques reported by the parents in the interviews.
- A *research audit trail* was presented to experts. The experts were a) one qualified child psychiatrist with over 30 years of experience, b) one clinical psychologist and one psychiatric social worker with over ten years of experience, c) two parents and d) one primary school teacher and experienced parent. A powerpoint presentation was made to each member individually, describing the research steps taken from the start of a research project to the development and reporting of findings. Following this, they were requested to randomly pick up three slips of paper consisting of a code denoting a video (known only to the researcher). Each video starred children of different age groups i.e. 3-4 years, 5-6 years and 7-8 years. Each video was presented without the title. They were free to *request for any part of the video to be replayed, if needed*. At the end of every video, they were handed the video feedback form. All experts were able to identify that the two major parts in each video were 'negative' and 'positive' ways of handling a given Behaviour. The experts' decision about the problem Behaviour being addressed in all videos corroborated the intent of the videos. All experts were able to note down techniques suggested. Modifications were suggested for the 'Academics and School' video. These were incorporated by re-editing the video.

Analysis

- ***Quantitative analysis:***
 - Descriptive statistics namely frequencies, percentages, mean and standard deviation were computed for data collected.

- **Qualitative analysis:**

- Inductive content analysis: [15] It was carried out for the semi-structured interview data to help the researcher decide which problem Behaviours were relevant to be converted into the videos (i.e., those with higher frequency were chosen). Analysis was conducted in three main phases: Given in Figure 1.

Results

Average age of the mothers was 32 years. 48% were graduates or diploma holders, and majority of them were homemakers. 95% of mothers had no illnesses before, during or just after birth of child, 5% had problems like low platelet count, diabetes mellitus and infertility. Average age of the fathers was 37 years. 45% were graduates or diploma holders and majority of them were managers or engineers or doctors. All families belonged to middle or higher SES.

Parental relationships and relationship of the primary caregiver with other family members were cordial. 76% of mothers reported the presence of division of labor, while 24% of them reported role-strain. There were no major medical or psychiatric illnesses in a large majority of the families.

Of the 33 children, 58% were boys and 42% were girls. Sixty one percent of the children were aged between 3-5 years, and the rest were between 6-8 years of age. All children were biological. None of the children had any major illness soon after birth or at any time. Their developmental milestones were age-appropriate. All children were predominantly satvik (easy) in their temperament. All children, as per parents' reports, had an overall secure pattern of attachment.

Despite overall secure patterns of attachment, favorable family conditions, and a dominant satvik temperament, mothers reported moderate levels (45%) of stress in parenting in the Parenting Stress Index. The pie chart (Figure 2) shows that a large amount of parental stress originated from the difficult Behaviours of the child. This is substantiated by a high incidence of Behaviour problems in their children. Table 1 illustrates the frequency and nature of child Behaviour problems reported by parents in the interviews.

A total of fourteen videos were developed. The titles of the videos are Excessive Shyness, Morning Routine, writing on the wall, Screen Addiction, Temper Tantrums, Fussy Eater, Inconsistent Disciplining, Child too Clingy, Academics and School, Sibling Fights, Disrespectful, Won't Share, Outdoor Temper Tantrums and Parents & School. The development

of NIMHANS parent training videos has thus made a small step towards attending to the lacunae on parenting intervention for urban middle, higher socio-economic strata. All the videos are available on Youtube by typing the keyword “NIMHANS Parent training videos” in the search area.

Evaluation of the study:

From a public health perspective, the video-based parent training programme can be incorporated as a part of a preventive intervention for child Behaviour problems in the community. This study has potential to pave the way for more controlled studies on the efficacy & effectiveness of the use of videos in general medical, psychiatric & pediatric settings.

However, the limitation of the current study was that the actors in the video do not have expertise on the visual arts. Further, the research audit trial was done only with the experts and not with the parents. The expert feedback was sought based on only the content of the video and not on the quality of the video/ audio, actor’s performance etc.

Conclusion:

This paper has two essential conclusions. First, even when all conditions seem favorable, there is a felt-need for help with parenting their children among parents in the urban communities. Second, the study has confirmed the feasibility of developing video material in the area of parent training, which is not only promising, but also the need of the hour.

Figure 1. Process of inductive content analysis

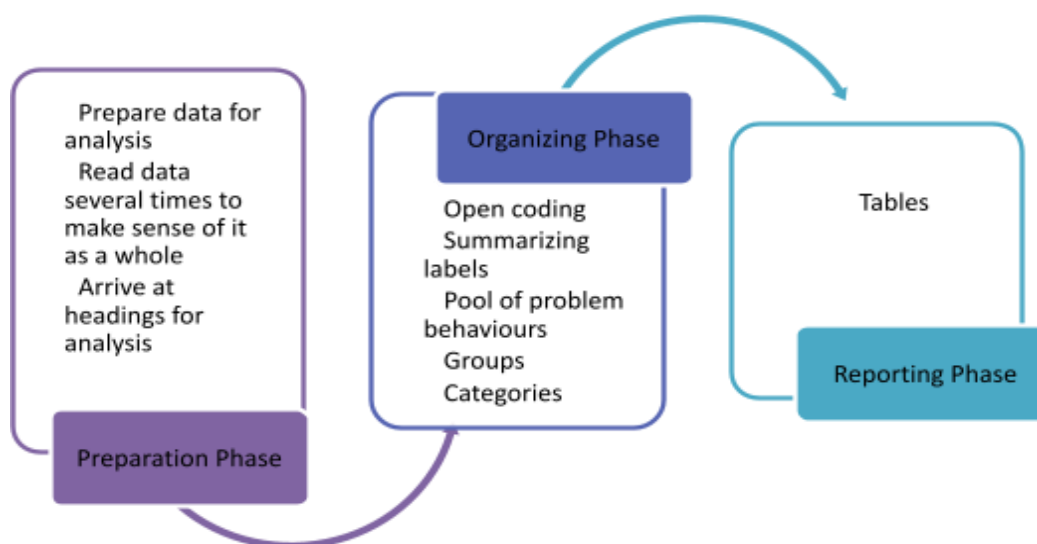


Figure 2. Source of Parenting stress

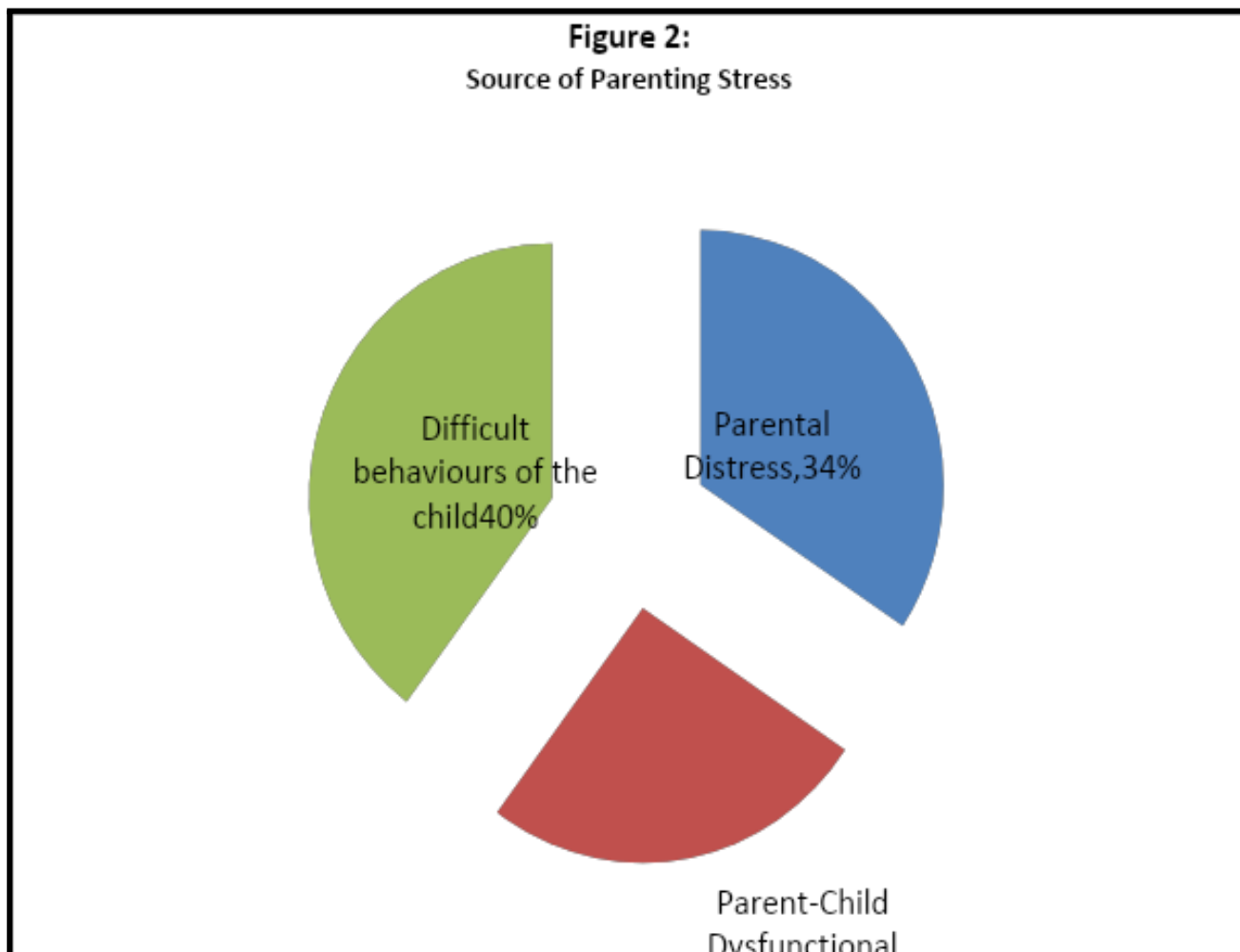


Table 1. Shows the categories, sub-categories, frequency and percentage of difficult Behaviours in children.

<u>Sl. no</u>	<u>Generic category</u>	<u>Specific problem Behaviours</u>	<u>Frequency</u>	<u>Percentage</u>
1.	Nature of the child	Being too shy or too outspoken, disliking any hard work, dislike for stories, asking too many questions, being too clingy	25	76

2.	Basic needs	Poor and fussy eater, sleeping problems at afternoon and night, bed wetting, not hygienic	22	67
3.	Daily routines	Repeating routines, getting child ready for school	17	51
4.	Temper tantrums	Indoor and outdoor temper tantrums	17	51
5.	Multiple care-givers	Differences between in-laws, between father-mother, maid, preferring father over mother	15	45
6.	Non-compliance	Specific Behaviours (hair-cut, writing on wall, run to cross doors), adamant, does only what he/she wants, difficult to convince, does opposite of what is told	13	39
7.	Addicted to screens	Excessive TV, Phone, Laptop, tablet (Genesis: to make kids eat food)	13	39
8.	Manners and values	Refuses to return other's things, doesn't share, interrupts mother in conversation	10	30
9.	Sibling fights	Over trivial issues, one sibling feeling left out	9	27
10.	Academic/school	Low attention span for homework, not picking up writing/ reading, teacher/friend-parent rule conflict	9	27

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Original Article

Impact of Adolescent Health Education Programme on Mental wellbeing of adolescents

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ABSTRACT:

Background: India has the world's largest youth population despite having a smaller population than China. Adolescence is the main period for mental well-being growth and conservation. Mental illnesses affect 10-20 percent of kids and teenagers globally. Ten percent of children (5 to 15 years) have diagnosable psychological issues. All around the world, depression is the 9th driving reason for disease and disability among all young people. Based on these contexts, the present study i.e., Adolescence Health Educational Programme (AHEP) is carried out to assess the AHEP's effectiveness in terms of improvement in the mental wellbeing of adolescents.

Methods: One hundred twenty, 9th standard adolescents were randomly selected and allocated to the intervention and control group (60 in each). The intervention group received AHEP sessions for 10 weeks (about 2 and a half months). The mental wellbeing of both

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groups was assessed before and after the intervention with General Health Questionnaire Short Form Version 2 (SF 36 V2)

Results: It showed that the majority of adolescents have above average level of mental wellbeing. The statistical test shows that there was a significant improvement in the mental wellbeing of adolescents from baseline to the first month; later it gradually reduced after 6 months. Further religion is associated with the mental well-being of adolescents.

Conclusions: A consistent Adolescent Health Education Programme, in the long run, will improve and sustain the adolescents' mental wellbeing

Keywords: Adolescent; Mental Wellbeing; Health education programme.

Introduction

One in every six people in the world is an adolescent (WHO, 2018), and 90% of them live in developing countries (UNFPA, 2010). India is the second-most populous nation in the world with 1210 million people and above. Teenagers (10-19 years) make up a sizable part of the population, accounting for over 21% of the total population, or 253 million people. Karnataka has a population of roughly 61 million people, with 11 million (10%) of those aged 10 to 19 years old (Census, 2011)

Globally, 10-20 percent of children and teenagers suffer from mental illnesses (Consolacion, Russell, & Sue, 2004) (Barry, Clarke, Jenkins, & Patel, 2013). Ten percent of children (5-15 years of age) have diagnosable mental disorders. (P. Shastri, 2009). In the age group 13-17 years, the prevalence of mental problems was 7.3 per cent and roughly equal in both genders in India (Gururaj G, Varghese M, Benegal V, Rao GN, Pathak K, Singh LK, Mehta RY, Ram D, Shibu Kumar TM, Kokane A, Lenin Singh RK, Chavan BS, Sharma P, Ramasubramanian C, Dalal PK, Saha PK, Deuri SP, Giri AK, Kavishwar AB, Sinha VK, Thavody J, Chatterji R, Akoijam, 2016). As adolescents grow, several factors such as Competitive academics, peer pressure, socio economic problems, and increased availability and accessibility of technology affect their mental wellbeing. (Alcorn, 2014). Mental well-being is key to good health and prosperity and affects social and economic outcomes across life expectancy. Adolescence is the vital period for setting up the healthy development of good mental health and great emotional well-being. (Barry et al., 2013). In the world, depression is the 9th leading cause of disease and disability among young people; mental health and psychological problems account for 16% of the global burden of disease and injury in many

dangerous health behaviours, such as taking substances or taking sexual risks, begin in adolescence. Poor psychological wellness in adolescence may lead to school dropout, delinquency and substance abuse. Interventions that promote positive emotional wellbeing provide adolescents with the necessary foundational abilities, supports, and resources to fulfill their full potential and overcome adversity. Academic stress, violence, including bullying, sexual permissiveness, easy drug availability and abuse, crowding, poor infrastructure, and social divide are only a few of the significant difficulties that youth in India faces. Even in the face of adversity, an empowered youngster can cope with life's obstacles by utilizing available resources. (Bharath Srikala, 2018)

Bardhan A (2016) piloted research to find the impact of life-skills education in changing Behavioural changes. The research showed that ongoing life skills education together with organized counseling helped adolescents with Behavioural issues to develop beneficial changes. The training helped them to develop a friendly relationship between teachers, peers and parents. It also shows that continued participation with school officials, their friends and counselors has improved adolescent mental well-being (Bardhan, 2016). An RCT conducted on a Sports-Based Youth Development Program among 664 students revealed that the intervention was effective in terms of mental well-being, psychological assets, physical fitness, and physical activity levels of teens (Ho et al., 2017). A systematic review conducted by Das K et al (2016) showed that a mixture of social competence and social inspiration methods were effective against substance abuse (Das, Salam, Arshad, Finkelstein, & Bhutta, 2016). The mediations targeting multiple drug abuse were effective in school centered programs (Das et al., 2016). Research studies conclude that the school-based alcohol prevention interventions were highly effective (Salam, Das, Lassi, & Bhutta, 2016) and improved mental wellbeing (Eschenbeck et al., 2019).

Research studies confirm the practicability and usefulness of incorporating mental health promotion mediations into education (Barry et al., 2013). Some of the effective interventions in improving the mental wellbeing of adolescents include Samata (Mazzuca et al., 2019), Mindfulness (Shambhu, Rajesh, & Subramanya, 2018), face-to-face interventions (Eschenbeck et al., 2019), teenage sexual and reproductive health, pregnant adolescent diet programs, micronutrient supplementation, youth immunization procedures and substance abuse interventions (Salam et al., 2016). A systematic review of the effectiveness of

school/community based mental health promotion interventions for the positive mental health of teenagers in low and middle-income countries, reveals that most campus-based approaches are powerful, reasonable quality, with findings signifying optimistic effects on pupils' confidence, inspiration and self-competence. Research studies show the possibility and adequacy of coordinating emotional well-being intercessions into schooling.

Research studies show the attainability and viability of coordinating mental health promotion interventions into education (Barry et al., 2013). The classroom environment offers a platform for promoting mental and social skills and scholarly education and offers a way of reaching a substantial number of teenage people with psychiatric problems (P. C. Shastri, 2009). However, Michelle O'Reilly argues that still there is a strong need for good evidence-based school health interventions for the promotion of adolescents' mental wellbeing (O'Reilly, Svirydzenka, Adams, & Dogra, 2018).

Further, the existing school-based interventions were focused mainly on a few specific aspects of adolescents' health and the evidence from India was limited. With this background, a PhD study was undertaken to assess the effectiveness of an Adolescence Health Education Programme (AHEP) on the health of adolescents studying in selected schools of Bangalore, Karnataka, India. The current study is designed based on the Indian context with comprehensive coverage of all the aspects of adolescents' health. In this project, health was assessed in terms of the physical, mental, social and spiritual wellbeing of adolescents. In this article, the impact of AHEP on the mental wellbeing of adolescents is presented in detail.

Methods:

Sample:

A Randomized Controlled Trial design was used for the study. Multistage random sampling technique was used to select the sample for the experimental and control group. Bangalore consists of three districts such as Bangalore North, South and Rural. Bangalore north was selected for the study by lottery method (Stage 1). Further Bangalore North district has four zones like North 1, 2, 3 and 4. North 2 was selected by lottery method (Stage 2). To keep homogeneity of the sample, matching was done with the following characteristics of schools i. e. Private Aided, Secondary school, Coeducation, Location

(Mathikere and Yeshwanthpur) and Medium of instruction (English). Bangalore North 2 zones form 190 secondary schools with various management such as Department of education, Government of Karnataka (11), Central government (03), Private aided (32), Private Unaided (138), and Local body (6).

Out of thirty-two private aided schools (Stage 3), 29 schools have coeducation and 3 schools were only for girls. Locality wise there are six schools in Mathikere and Yeshwanthpur (three in each). Out of these six schools, three schools have followed English as the medium of instruction. In that one High school was randomly assigned to experiment and another High school was assigned to a control group (Stage 4). Further sixty, 9th standard students from each school were randomly selected for the study through the table of random numbers (Stage 5).

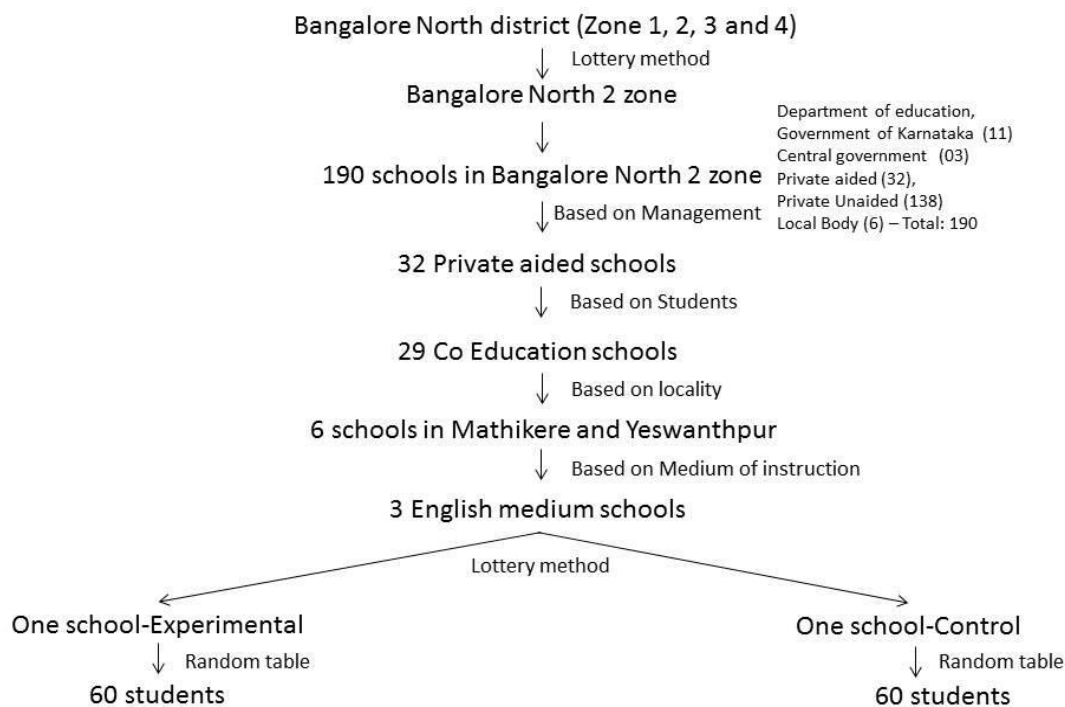


Figure 1 School and sample selection

Instruments:

Socio-demographic proforma: This self-administered questionnaire includes age, gender, religion, diet and BMI.

SF 36 V2: General Health Questionnaire Short Form Version 2 consists of 36 items. It includes eight health domains: physical functioning, role participation with physical health problems (role-physical), bodily pain, general health, vitality, social functioning, role participation with emotional health problems (role-emotional), and mental health. All these eight-scale profiles are reduced to Physical Component Summary (PCS) and Mental Component Summary (MCS) without substantial loss of information by Scoring Software 2.0 (Ware et al., 2008). Mental wellbeing is measured in terms of MCS: higher the MCS score is better the mentalwell-being.

Intervention:

Adolescents in the experimental group had received Adolescence Health Education Programme (AHEP) for 10 weeks. The adolescents were asked to fill the socio-demographic proforma and General Health Questionnaire Short Form Version 2 (SF 36 V2) before AHEP. AHEP has three components. First, an interactive teaching-learning session of 90 mins/week, which covers topics such as growth and development, healthy nutrition, HIV/AIDS and Reproductive Tract Infection, life skills, substance abuse, assertive communication, anger management and spiritual wellbeing. Second, meditation sessions of 90 min/week. Third, a structured physical exercise session for 90 min/week. After 10 weeks of AHEP, adolescents were instructed to follow the meditation and physical exercises on their own. Post-tests were conducted after the first and sixth months of AHEP. Control group adolescents were undergoing regular school activities. *Ethical aspects:* This study is approved by the Ethical Review Board of M.S. Ramaiah Medical College and Hospitals, Bangalore, Karnataka, India.

AHEP is designed to provide information regarding adolescence's health with regards to Physical well being - Growth and Development of adolescent, Healthy Nutrition, Physical

activity, HIV / AIDS & Reproductive Tract Infection; Mental well-being – life skills & Substance abuse; Social wellbeing - General Concepts of social wellbeing, Assertive communication, Assertive communication & Anger management; and Spiritual wellbeing - Relationship between spiritual wellbeing and health & Ways to improve spiritual well being. The programme was carried out for 2 hrs. / Week of classes, 2 hrs. / Week of physical exercise and 2 hrs. / Week of meditation. This was delivered by the research Scholar and Physical education teacher for consecutive 10 weeks.

Results:

Sociodemographic profile:

Table 1: Socio demographic profile of adolescents

n = 120 (60+60)

Variable	Experimental group	Control group f (%)	Chi-Square value (p-value)
Age (years)			
14	40 (67)	41 (68)	0.038 (0.854)
15	20 (33)	19 (32)	
Gender			
Male	30 (50)	30 (50)	-
Female	30 (50)	30 (50)	
Religion			
Hindu	44 (74)	37 (62)	1.8642 (0.393)
Muslim	11 (18)	16 (26)	
Christian	5 (8)	7 (12)	
Diet			
Vegetarian	10 (17)	19 (32)	3.6832 (0.054)
Non-vegetarian	50 (83)	41 (68)	

Table 1 shows that more than half of the adolescents were 14-year-old Hindu, non-vegetarians. The chi-square test shows that both groups are homogenous in their socio-demographic characteristics.

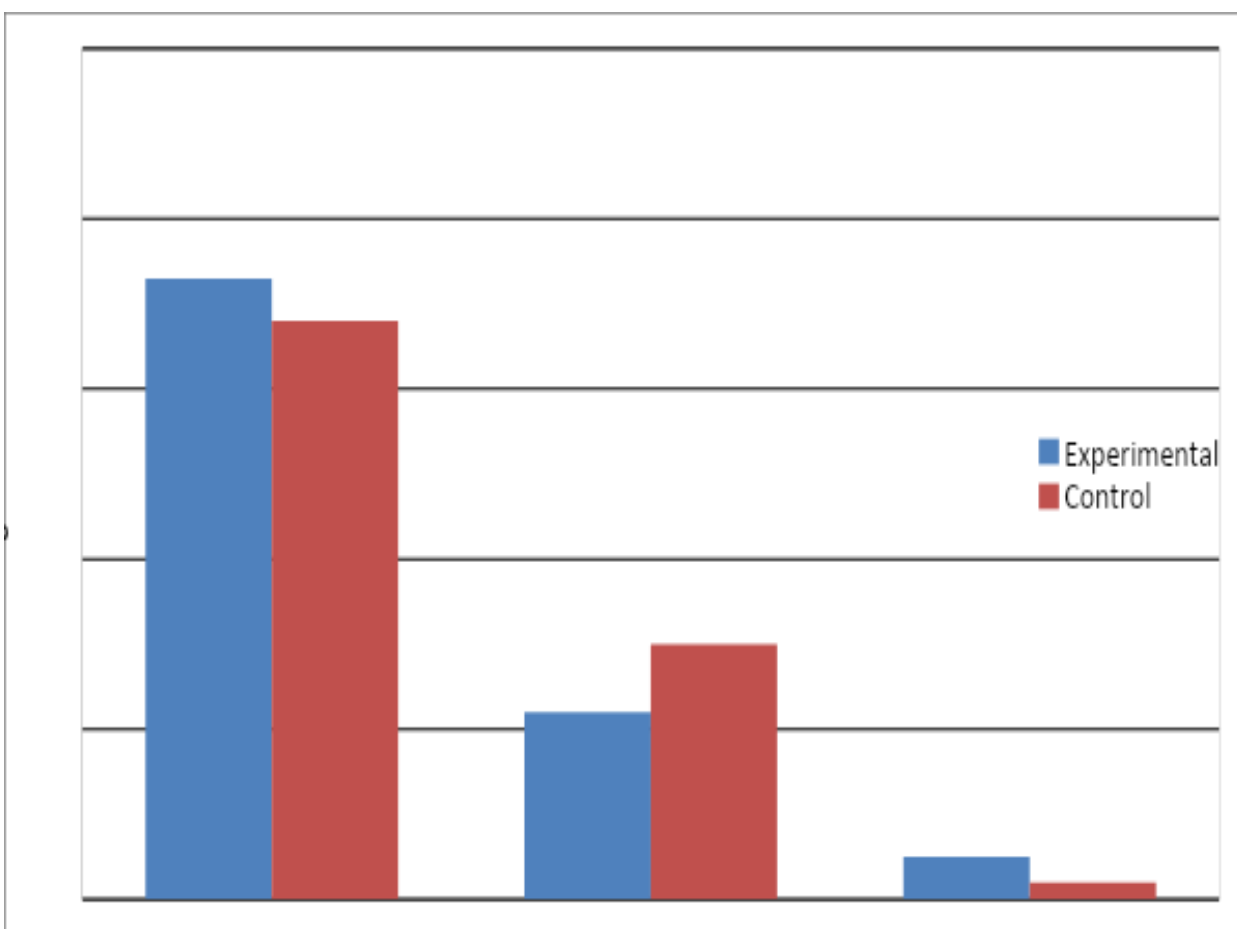


Fig 1: BMI of adolescents

Fig 1 shows that adolescents underweight and overweight are slightly more in number in the experimental group than in the control group. Whereas, adolescents with a normal range of BMI are higher in the control group (30%) than in the experimental group (22%). The chi-square test shows that both groups are heterogeneous in terms of BMI ($\chi^2 = 1.9123$, $p = 0.384$).

*Effectiveness of AHEP on mental wellbeing***Table 2: Comparison of Mental wellbeing between groups**

n = 120 (60+60)

Group	Experimental group Mean (SD)	Control group Mean (SD)	t-test value (p-value)
Baseline	78.92 (12.241)	75.65 (17.806)	1.171 (0.244)
Post-test 1	87.58 (2.770)	78.57(18.275)	3.779 (< 0.001)
Post-test 2	85.28 (9.279)	75.17 (19.277)	3.663 (< 0.001)

Table 2 reveals that there was no significant difference in Mental Component Summary (MCS) between experimental and control group at baseline ($t = 1.171$, $p = 0.244$); while the MCS score was significantly higher in experimental group in post-test 1 ($t = 3.779$, $p < 0.001$) as well as post-test 2 ($t = 3.663$, $p < 0.001$) than control group. It shows that the AHEP has significantly improved the mental wellbeing of adolescents.

Table 3: Comparison of Mental wellbeing within groups

n = 120 (60+60)

Group	Baseline Mean (SD)	Post-test 1 Mean (SD)	Post-test 2 Mean (SD)	F ratio (p-value)
Experimental	78.92 (12.241)	87.58 (2.770)	85.28 (9.279)	14.868 (< 0.001)
Control	75.65 (17.806)	78.57 (18.275)	75.17 (19.277)	0.596 (0.5521)

Table 3 explains that the MCS is significantly different within the experimental group ($F=14.868$, $p < 0.001$), while it is not significant within the control group ($F = 0.596$, $p=0.5521$). Even though the MCS is increased in post-test 1, there is a reduction in post-test 2 in the experimental group. Further post hoc results found that the mean difference from baseline to post-test 1 (8.667, $p < 0.001$), baseline and post-test 2 (6.367, $p < 0.001$) experimental group are statistically significant.

Table 4: Association between Socio demographic variable and mental wellbeing at baseline

n = 120 (60+60)

Variable	f	Mean (SD)	t test value / F ratio (p value)
Age (years)			
14	81	78.41 (15.595)	1.161 (0.248)
15	39	74.95 (14.594)	
Gender			
Male	60	74.92 (15.063)	-1.708 (0.090)
Female	60	79.65 (15.298)	
Religion			
Hindu	81	74.79 (16.027)	3.460 (0.035)
Muslim	27	82.74 (13.495)	
Christian	12	81.83 (9.656)	
Diet			
Vegetarian	29	78.97 (7.576)	0.054 (0.816)
Non-vegetarian	91	77.10 (14.695)	
BMI			
Underweight	85	77.68 (15.727)	0.184 (0.946)
Normal range	31	74.35 (13.514)	
Overweight	4	77.60 (21.582)	

Table 4 shows that Muslim adolescents are having significantly higher well-being, followed by Christian and Hindu ($F = 3.460$, $p=0.035$), while other socio-demographic variables are not significantly associated with mental wellbeing.

Discussion:

The AHEP has significantly improved the mental well-being of the adolescents in the present study. Similarly, life skill training programme has improved the adolescent mental well-being (Bardhan, 2016); a Sports-Based Youth Development Program was effective in improving mental well-being (Ho et al., 2017); Research studies conclude that the school-based improved mental wellbeing (Eschenbeck et al., 2019). However, in the present study, the MCS score of adolescents was above average, this may be because of the family structure in the study locality; these students are taken care of by their parents, so they may have fewer worries about the future, finance and other aspects of life.

This present study shows that there is a significant association between the MCS and religion and there is no significant difference between boys and girls in terms of mental wellbeing. A study conducted by Sankar R, Wani M A and Indumathi R showed the contradictory finding that there was a statistically substantial distinction between boys' and girls' mental health scores. (Sankar, Wani, & R., 2017) Dey M, Gmel G and Mohler-Kuo M conducted a study to find the link between Body Mass Index (BMI) and health-related Quality of Life. (Dey, Gmail, & Mohler-Kuo, 2013) (Dixon, Rice, Lambert, & Lambert, 2015). This finding was contradictory to the present study, where the result shows no association between the MCS and BMI.

Conclusion:

Mental health problems among adolescents are of sincere concern. Unhealthy Behaviours during adolescence represent major public health challenges. To achieve optimal adolescent health and well-being, the planning of policies in health and allied fields should be multidimensional. School-based awareness programmes among young people need to be given prime importance, so that vulnerable adolescents are aware of their choices that form risky Behaviour. Mental issues have become one of the main problems that affect adolescents in their day-to-day life. As the psychological concerns of adolescents are more delicate and difficult to handle, proper measures need to be undertaken by the high schools to prevent mental health issues in the children.

To achieve mental health, measures should be taken to prevent mental disorders and to foster and promote mental health and wellbeing. Mental health cannot be carried out only if disorders are prevented or treated. We need to tackle the problems that hurt school children's psychological well-being, such as vulnerability, drug abuse, poverty, violence, substance use, domestic violence, conflicts in the family and society, insecurity and ill health. The present study found that the AHEP has helped the children in developing the mental wellbeing of all religious backgrounds. In this present study, the parents were not involved, hence we recommend that the upcoming research needs to focus on the involvement of the parents in the programmes, as it may influence parenting habits and for the provision of a better home environment. The present study also suggests that the AHEP is replicable in a school setting and the mental health programme in the school may be made most effective with AHEP. The teachers also may be trained as facilitators in AHEP. Frequent assessment of the mental health of the schools' children may also be done. The findings and inputs may be given to the children to improve their ability and competency in the required areas. We conclude that a consistent Adolescent Health Education Programme in the long run may improve the mental wellbeing of adolescents.

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Original Article

Psychosocial Problems of Adolescent Girls during Menstruation

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ABSTRACT

Aim: To study the psycho social problems of adolescent girls during menstruation.

Methods: Cross-sectional study was conducted in Chennai.

Descriptive research design was used. Sample size: Sixty students were selected randomly by the teacher from Bhoodhur Govt high school, Sholavaram, Chennai and referred to researchers for the study purpose. Inclusion criteria: Adolescent girls who were aged 13–16 years and attained menarche

Results: Majority (71.7%) of adolescent girls belong to the age group of 14 - 15 years, 68%, 12 were in ninth standard. Nearly half of the respondents were using pads (45%) and clothes (42%) as absorbent, majority (65%) preferred to discuss their menstrual problems with mother, 28% with friends about menarche, 7% do not discuss with anyone. Most of them (58%) faced physical problems during menstruation such as premenstrual syndrome

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(55%), menorrhagia (12%), sleep disturbance (12%), body pain (68%), headache (45%), leg (55%) Majority (67%) had psychological problems such as change

in mood (70%) irritability (78%) restlessness, (63%) unstable mood, (58%) feeling stressed). One-third had faced psychosocial problems in terms of unawareness of menarche before the onset (65%), 10% did not have privacy to change sanitary pads and did not know how to use them, 32% faced restrictions during menarche.

Conclusion: Mental health education of adolescents' girls is essential to deal with psycho-social problems related to menstruation.

Keywords: *Menarche, School social work, Adolescents girls, Mental health education*

Introduction

Menstrual health may be defined as a state of complete physical, mental and social well-being and not merely absence of menstrual problems¹. It is essential for improving global public health and achieving sustainable development goals. Psycho-social problems are common during menstruation in adolescent girls. Menstrual problems affect their academic performance, school attendance and social life. Menstrual problems are affective and somatic in nature. Although several studies have reported physical problems faced by adolescent girls during menstruation, however few studies focused on the psychosocial aspects of menstruation.

Adolescent girls face significant psychosocial problems during menstruation in terms of access to clean materials, lack of privacy for changing pads, disposal facilities for sanitary napkins, socio-cultural restrictions, less psychological and social support, poor knowledge about managing pain during menses, non-availability of counseling services, and inadequate information on menstruation and its management, no preparation before menarche, menstrual distress, burden and stigma.

Previous studies have reported that adolescents' girls aged 15 - 19 years felt sick, sad, irritable, and missed school during menstruation². They were unable to concentrate and pay attention during school hours. Before menstruation, adolescent girls were irritable and depressed, nervous and sad 7 and during menstruation, these problems got aggravated³.

Most girls were scared at the onset of menarche. Other reactions were worry and sadness⁴. Few college students reported suicidal ideas and death wishes during the pre-menstrual period⁵. Pre menstrual symptoms, depression, irritability, mood swings, sense of losing control, retention were significantly correlated with students who had suicidal ideas compared to women without suicidal thoughts. There seems to be an association between menstruation and suicide⁶.

Most common psychological problems reported by adolescents before menstruation were tiredness, anger, headache and irritability, fear, and depression⁸. Few studies reported psychosocial problems such as pre-menstrual symptoms, sleep disturbances, prolonged bed rest, inability to concentrate on studies, depression, irritability, headache, malaise, fear, anger, tiredness, foul odor, and anxiety, disturbance in daily routine, missed social activity^{8,9,10,11,12,13}. Young girls with premenstrual symptoms reported insomnia, nervousness, fatigue, headache¹⁴ and sleep problems¹⁵. Many girls were unable to perform household activities and attend sports. Dysmenorrhea and menorrhagia increased the risk of school absenteeism among rural girls¹⁶. Coital activity is a common cause of many adolescents menstrual problems¹⁷. Seeking medical help for menstrual problems (dysmenorrhea) is very poor among teenage girls¹⁸. Dysmenorrhea and menstrual irregularities were linked with dietary habits (eating junk food, eating less) and premenstrual symptoms were related to lack of physical activities¹⁹, overweight, eating less, taking junk foods²⁰.

Duration and menstrual cycle regularity were determined by factors such as socio demographic profile, psychosocial stress, disturbed sleep, arduous physical exercise, diet^{21,22,23}. Various studies have reported increased stress during menstruation is the strongest predictor of menstrual irregularities. Unhealthy lifestyle as well contributes to menstrual abnormality. Increased stress was associated with disturbed sleep during menstruation²⁴. Poor knowledge, inadequate information, less awareness about menstrual problems, exclusion and shame lead to misconceptions and unhygienic practices during menstruation among teenagers. Restrictions in social interaction, self-medication, lack of knowledge about unhealthy coping with menstruation were problems experienced by adolescent girls in low and middle-income countries²⁵. Most studies found that girls were restricted from school activity and physical

activities such as play, traveling, attending social gatherings, functions, festivals, marriages, worship, food restrictions, entering a temple, kitchen, others house, doing household work, taking a bath, attending school, touching people and pooja materials^{2,26,27,28,29,30}. Restriction in activity varies from culture and region. In some parts of southern Indian villages, girls were even not allowed to enter their own house, and they were asked to sit and take rest in the house entrance during the menses. Girls were considered dirty and impure during periods. There is an association between educational level, activity restrictions and practice regarding menstruation³¹.

Socio-cultural practices regarding menstruation depend on girls' education, attitude, family environment, culture, and belief³². Adolescent girls in slum areas face multiple restrictions (such as staying out of the house and separation from family members, not touching anyone), not aware of menarche prior to menstruation, do not know the cause of bleeding, and organ where bleeding occurs, disposing the pads open area, using common toilet for changing pads³³.

Urban and rural girls were aware of menstruation before attainment of menarche³⁴. In urban girls, the mother was the main source of information about menstruation, whereas it was a teacher in the rural areas. Regarding onset of menarche, urban girls tend to attain puberty earlier than rural girls. Girls from upper socioeconomic status have lower mean age at menarche in rural and urban areas and higher mean age was found in urban girls involved in rigorous sports³⁵. Cleaning of external genitalia was more satisfactory in urban than rural area³⁶.

Premenstrual symptoms were more in urban than rural girls, whereas school absenteeism due to menstrual problems were more in rural girls. Menstrual practices were better in urban girls as compared to rural girls. More urban girls use sanitary pads than rural girls³⁷. There is a difference between rural and urban girls in terms of awareness about menarche and menstruation, type of absorbent used, method of disposal of the same, cleaning of external genitalia. Majority of rural and urban girls feel no need to seek help from a doctor for menstrual problems and do not get counseling for menstrual hygiene from professionals and most of them were counseled by their mothers regarding menstrual hygiene. Most of them felt depressed and scared about their bleeding and changes in body during menses. Most of the girls perceive that restrictions should not be imposed on them during menstruation³⁸.

There were two systematic reviews and meta-analyses on menstrual hygiene among adolescent girls in India. Van et al (2016)³⁹ reviewed 138 studies published from 2000 to 2015. Outcome measures were menarche awareness, type of absorbent used, disposal, menstrual hygiene, restrictions, and school absenteeism. Results revealed that half of them were aware about menarche, many faced restrictions, inappropriate disposal of absorbent, one-fourth were absent from school during periods, one-third had facilities in schools to change pads, half of them had toilets at home to change absorbent. Rural girls faced scarcity of water, non-availability of toilet, bathing space, lack of privacy and bathing restrictions during menses. Systematic review showed that most were surveys, few used mixed methodology and experimental design. Half of the studies were school based and one-third were community based. More studies were from south India.

A systematic review of 183 out of 1125 studies published to 2019 on menstrual hygiene preparedness among Indian schools. Results revealed that less than half of them were aware of menarche, teachers were fewer common sources of information and half of the schools had separate toilets for girls⁴⁰.

Another systematic review on effects of Menstrual Hygiene Management (MHM) on health and psychosocial outcomes revealed that poor MHM is associated with reproductive tract infections. There is good evidence that educational interventions improve MHM practices and reduce social restrictions⁴¹.

Literature Gap

Most of the studies were focused on awareness, attitude, beliefs, conception, cultural aspects, determinants, experiences, general health, hygiene, help-seeking behavior, knowledge, perceptions, practices, prevalence, problems related to menstruation. Most of the Indian studies were school-based, and very few were community-based. Several studies focused on adolescent girls in rural and urban areas about menstruation, though urban studies outnumbered. Studies on out-of-school adolescents regarding menstruation and intervention studies are less. The majority of studies focused on menstrual patterns, practices and problems. There were no randomized controlled studies on intervention related to menstrual hygiene. No Indian studies have used

standardized instruments to report the problems related to menstruation, preparedness, menstrual hygiene management.

There are no studies in India which focused explicitly on psychosocial problems of adolescent girls during menstruation. Therefore, the present study was carried out.

Materials and Methods

Descriptive research design was used. *Universe:* Study was conducted in Govt high school, Bhoodhur village, Sholavaram Block, Thiruvallur District, Tamil Nadu, among adolescent girls studying in 8th, 9th 10th Std. *Sample:* 60 girl's students aged 13 – 16 years and attained puberty who showed their readiness to participate in the study were selected randomly by the teacher and referred to researchers. *Tools for data collection:* Semi-structured interview schedule consists of socio-demographic factors (9 items), physical problems (3 items), psychological problems (7 items), psychosocial problems of adolescent girls during menstruation (5 items). Interview schedule was used to collect data. *Statistical Analysis:* Frequency, percentage and Chi-square test were used for data analysis. Ethical clearance was obtained from the Institute ethics committee. Oral informed assent was obtained prior to data collection from the girl students. Adolescent girls were briefed about the study before collecting data. Written permission for the study was obtained from the school institution head.

Results

Table 1: Profile of Adolescent Girls

S.NO	Profile of Adolescent Girls	Domain	N	
			f	%
1	Age	13 years	9	15.0
		14 years	21	35.0
		15 years	22	36.7
		16 years	8	13.3

2	Level of Education	8 th Std	05	8.3
		9 th Std	41	68.3
		10 th Std	14	23.3
3	Preference of Sanitary Napkin	Branded	27	45.0
		Home made	8	13.3
		Cloth	25	41.7
4	Duration of Menstrual Period (in days)	1-3	26	43.3
		3-5	27	45.0
		5-7	6	10.0
		7-10	1	1.7
5	Reactions during first menstrual cycle	Shock	27	45.0
		Alarming	7	11.7
		Guilt	5	8.3
		Shame	21	35.0
6	Preference to discuss about menarche	Friend	17	28.3
		Mother	39	65.0
		None	4	6.7

Table 1 shows the majority of the adolescents (71.7%) belong to the age group of 14-15 years in the study, 68% of them were in 9th Grade. Nearly half of the (45%) respondents felt it was convenient to use branded items and few of the (13%) respondents felt it was convenient to use

home-made items. Nearly half of the (45%) respondent's menstrual cycle lasted for 3-5 days, (43%) of respondents had 1-3 days. Nearly half of them (45%) felt shocked during their first menstrual cycle, 35% of the respondents felt shame during menarche. Majority of them (65%) try to discuss their rapid changes with their mother.

Table 2: Psychosocial Problems faced by adolescent girls during menstruation

Problems	Problems during Menstrual Cycle	Agree		Neither agree nor disagree		Disagree	
		f	%	f	%	f	%
Psychological Problems	Sleep disturbance	37	61.6	21	35	2	3.3
	Headache before periods	27	45.0	23	38.3	10	16.6
	Mood change	25	14.1	26	43.3	9	15
	Irritability	42	70.0	16	26.6	2	3.3
	restlessness	47	78.3	9	15	4	6.6
	Stress before periods	35	58.3	21	35	4	6.6
	Unstable & moody before periods	38	63.3	11	18.3	11	18.3
Psychosocial Problems	Withdrawn Behaviour	45	73.4	7	11.7	9	17.0
	Awareness about menarche	22	35	20	33.3	18	30
	Privacy to change sanitary pad	54	90	1	1.6	5	8.3
	Taught to use the sanitary pad	54	90	2	3.3	2	3.3
	Discussing menstrual problems	40	66.7	3	5.0	17	18.3

	Social change after menarche	51	85.0	8	13.3	1	1.7
	Isolation	45	75.0	8	13.3	7	11.7
	Able to move freely	41	68.3	4	6.7	15	25
Physical Problems	Abdominal cramp	37	61.6	19	31.7	4	6.6
	Leg pain before periods	33	55.0	19	31.7	8	13.3
	Body pain	41	68.3	2	20	7	11.6

Table 2 shows that majority (61.6%) of the respondents agreed that they had sleep disturbance during menstrual cycle and 45% had headache before menstrual cycle, majority (61.6%) of them had lower abdominal pain and (68.3%) had back pain before menstrual cycle. Table 2 also indicates that nearly half of them (43.3%) get mood changes during the menstrual cycle and 70% of respondents felt irritated. 78.3% felt restless during the menstrual cycle. More than one-third of them (39%) had stress before the menstrual cycle and 63.3% felt moody & unstable during every menstrual cycle. One-third of them reported that (35%) they were aware of menarche before the onset. Vast majority of them (90%) agreed that they had privacy to change the sanitary pad and they were taught how to use the sanitary pad. Majority of the respondents (68.3%) moved freely with others during the menstrual cycle.

Table 3: Age differences in psychosocial problems of adolescent's girls

S. No	Psychosocial problems	Age	Agreed	Not agreed	χ^2 test	'p' value
1	Mood change	13-14	9	21	3.36	0.06
		15-16	16	14		

2	Irritable	13-14	18	12	2.86	0.09
		15-16	24	6		
3	Move freely with others/ No restrictions	13-14	26	4	9.31	.002*
		15-16	15	15		
4	Feeling Isolated	13-14	26	4	4.36	0.03*
		15-16	19	11		

**Significant at $p < 0.05$ level*

Table 3 shows age difference in psychosocial problems and coping patterns of adolescent girls during menstruation. Chi-square test revealed that young girls aged 13 – 14 years were able to move freely with others ($\chi^2 = 9.31$, $p = 0.02$), and the same time they feel more isolated ($\chi^2 = 4.36$, $p = 0.03$) than girls aged 15- 16 years during periods.

Discussion

Present study showed that more than one-third of girls (35%) belong to 14 -15 years of age respectively. Similar findings were reported by Reddy et al⁸. Present study showed that 58% of them reported physical problems. Before the menstrual cycle, 45% had headache, 61.6% lower abdominal pain and 68.3% had back pain. In this study, more than one-third of them (39%) had experienced stress before the menstrual cycle and 52% of the girls had pre-menstrual syndrome. Most girls felt restless and irritable, unstable mood and stress during menstruation. These findings

were consistent with previous study findings where the majority of girls had irritability during menstruation [2, 7]. Nearly one-fourth of them were embarrassed by pubertal changes and felt shame and guilt³⁰, scared, shy, and sad during menarche³¹. During the first day of menstruation, girls report psychological problems such as nervousness, poor concentration, sadness, irritability, excitement⁷.

Present study showed that about two-third of the adolescents were unaware of menarche before the onset. This finding is inconsistent with previous studies 8^{,10,26,31,28,42,43}. There is a significant finding from the study that 90% of the respondents did not have a problem with regard to privacy to change the sanitary pad. This finding was in contrast to earlier studies where they reported that most of the children do not have adequate privacy and fully covered toilet facilities at school and at home to change the pad²⁷.

Noteworthy finding from the study is that two-third of the respondents did not have restrictions in physical activity and they were allowed to move freely during menstruation. This finding was contradictory to other study findings that almost all of them were practicing at least one kind of taboo related to menstruation³¹.

Reasons for restriction in physical activities could be because of the fact that there is loss of blood when they are involved in physical activity such as running and manual labor would cause more bleeding. To prevent the heavy loss of blood above restrictions might be imposed on girls. However, restrictions on touching others, playing games, entering temples, others house traveling and attending social functions do not have any scientific basis. Another reason could be to avoid discomfort in such places and activities these restrictions might be practiced. Though, these restrictions have some benefits in terms of avoiding discomforts during menses. However, in most of the places, these restrictions were enforced blindly on adolescents. These restrictions can be advised, nevertheless cannot be imposed. Few adolescent girls use pills to delay the menses in order to attend marriages, religious ceremonies, festivals, examinations and outings⁸. Current study showed that 90% of girls were taught how to use the sanitary pad. Out of which nearly half of them (45%) were using napkins and 42% were using clothes as absorbent. Majority of girls had good knowledge about menstrual hygiene in Udupi taluk⁴⁶.

Good menstrual hygiene was more among those whose mothers were literate¹⁰, properly disposed of. Nearly half of them knew about using pads out of which only 11% were using pads, 43% were using old clothes as absorbent²⁷. Majority were using home-made pads in the rural part of East Delhi²⁸. Most of the slum girls used old clothes, very few used pads and 1% did not use anything during the menstrual period. Present study showed only 13% were using home-made absorbent. Majority of girls used soap and water to clean their genitalia 27⁴³.

In India, across cultures most families enforce restrictions during menstruation. Several studies have reported that adolescent girls were restrained from certain physical activities such as household work, attending social functions, worshipping, touching people and pooja materials, entering temples, kitchens, playing outside, traveling and taking baths. Majority of the people practice some sort of taboo during menstruation and half of them avoid holy places, religious functions and few were restricted from kitchen work⁴⁴. Some peculiar misconceptions were widely prevailing such as that placing broom sticks, neem leaves, footwear around the menstruating girl would prevent the entry of evil spirits, excessive sweet intake leads to heavy bleeding, menstrual blood is dirty, and sleeping on bed is prohibited during menstruation⁴⁵.

Hygiene during menstruation is of utmost importance in order to prevent Reproductive Tract Infections (RTI). In India, poor menstrual hygiene is one of the prime reasons for high prevalence of RTI's among adolescents and their sexual health needs mostly remain unaddressed. To address this issue, the Indian government announced a new scheme to provide subsidiary napkins to rural adolescent girls.

There is a need to educate and make them aware about the environmental pollution and health hazards associated with disposable absorbents. Awareness should be created to emphasize the use of natural reusable sanitary products. Banana Fiber Pad (BFP) was highly feasible and acceptable in rural and urban adolescent girls during covid-19 pandemic. Adolescent girls were satisfied with the banana fiber pad in terms of comfort and leakage. The microbial load on a 3-year reused BFP was found to be similar to an unused⁴⁷.

Strengths of the study

This study is first of its kind in India which examined the psychosocial problems of adolescent girls during menstruation.

Limitations of the study

During the study period the researcher approached private schools to conduct the study in and around Chennai. Private schools were not permitted to conduct the study. Hence, the researcher was unable to compare the psychosocial problems faced by adolescent girls in private schools and government schools in urban areas. The study did not use any standardized questionnaire to assess their physical and psychosocial problems. The study findings cannot be generalized to the other population due to limited sample size.

Implications for School Mental Health Education

School Social Workers have a vital role in imparting awareness about menstruation and Menstrual Hygiene Management. Awareness programmes can be delivered through Group Work mode. Knowledge, awareness and dealing with menstrual problems can be covered under menstrual health and life skill training. Following information can be specifically addressed during the programme. Average age at onset of menarche, normal duration of menses, menstrual cycle, pre-menstrual syndrome, common menstrual disorders, body mapping, secondary sexual characteristics, cleaning the genitalia with soap and water, changing the sanitary pad 3–4 times a day according to the need, clarifications about myths and misconception about menstruation, teaching them how to use sanitary pads and proper disposal of pads.

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