Abstract: Adolescence tagged as period of stress and storm needs to be comprehended and handled with utmost care. Eating disorder one of the complex problems encountered during adolescence has an impact on the psycho-physiological health. The present study was conducted to assess the vulnerability towards anorexia in adolescent girls and also to compare parental perception, depression and Body Mass Index (BMI) between anorexia vulnerable and non anorexic girls residing in the rural area of Uttarakhand state. It was seen that 40% of girls showed symptoms of anorexia. Data on parental perception, depression and BMI revealed that anorexic vulnerable girls scored low for parental care and high for parental protection, depression and BMI as compared to their non-anorexic counterparts. It may be concluded that anorexia, once considered as disorder of western and urban culture, is now creeping into the rural setup too. Therefore, there is a current need for identifying and perceptively intervening in the problem at the parental level for better management of the problem.

Key Words: Anorexia, Parental perception, Depression, BMI

Introduction: Adolescence is beginning of awareness about physiological changes, searching for identity in family and social groups and also seeking acceptance in peer groups. The tight rope walk while making an effort to scrutinize earlier established norms in the light of their self-analyzed experiential worldly information at times, results in friction with the norm setters. Behavioral problems like anxiety, stress, depression, eating disorders, and violent /aggressive behavior in adolescents are reported with considerably high prevalence. (1) The most stressed and rebellious label stuck to this phase of life needs to be re-explored to unveil the underlying hidden fragility of emotions and their adjustment to the hauling psychosocial and physiological demands. The broad understanding of the etiology of adolescents’ turmoil is mainly confined to hormonal play and peer pressure. This etiological simplification subdues the various schematic hues in the psyche of an adolescent. There are various potential sources of psychological input which influence the social, cognitive and emotional processes of an adolescent, like, culture, parenting, media etc. (2-4) In this crucial phase of development, parental behavior, expectations and opinions not only influence the adolescents’ expectations of their achievements but also, in the development of lifestyle modification habits that is, eating patterns, smoking, etc. (5-7) Gravity of the parental role in adolescence has been universally accepted. In Asian countries the rising prevalence of deviated eating patterns in adolescents has become a matter of concern and India poses a complex picture of eating disturbances. (6) Thin ideal body image has been unveiled in Western studies.(9,10) In Indian studies also body image dissatisfaction is revealed in adolescents and it has been noted that it is no longer a western concept. (11)The parental involvement in understanding the adolescent pattern of schematic, self-image, emotional and peer pressure development is associated with good parenting. On one hand, parental involvement can be vital in the provision of the adequate guidance, on the other hand, paucity of information is available (especially in Indian context) regarding the nature of the parental involvement. The above concerns encourage the conduction of the present study with the following objectives:

1. To study the parental perceptions in vulnerable to anorexia and non anorexic adolescent girls.
2. To investigate the depression levels in vulnerable to anorexia and non anorexic adolescent girls.
3. To assess the BMI levels in vulnerable to anorexia and non anorexic adolescent girls.

Materials and Methods
In the present ex post facto study, a sample of 90 school going adolescent (16-18 years) girls was randomly taken from two government schools of Nagar Palika area of Didihat, District Haridwar, Uttarakhand.

Citation

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Original Article:
Parental Perceptions, Depression and BMI: A Road to Understand the Occurrence of Vulnerability to Anorexia in Adolescent Girls.

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anorexic counterparts. It was seen the overprotection score was significantly higher for anorexia vulnerable girls compared to non anorexic. The girls who were overprotected by both the parents (mother and father) exhibited vulnerability towards anorexia. The maternal protection mean score was 19.22 in case of AV girls as compared to 17.18 for NA girls. The father overprotection mean score was 18.83 for anorexic girls compared to a score of 16.73 for non anorexic girls (Table 1).

Table 1: Parental bonding scores in anorexia vulnerable (AV) girls in comparison to non anorexia (NA) girls

<table>
<thead>
<tr>
<th>Dimensions of parenting</th>
<th>AV (N=36)</th>
<th>NA (N=54)</th>
<th>F-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother's over protection</td>
<td>19.22 (4.2)</td>
<td>17.18 (4.75)</td>
<td>4.30</td>
<td>0.041</td>
</tr>
<tr>
<td>Father's overprotection</td>
<td>18.83 (4.49)</td>
<td>16.70 (4.67)</td>
<td>4.619</td>
<td>0.034</td>
</tr>
<tr>
<td>Overprotection</td>
<td>38.05 (7.45)</td>
<td>33.87 (8.38)</td>
<td>5.87</td>
<td>0.017</td>
</tr>
<tr>
<td>Mother's Care</td>
<td>22.86 (4.55)</td>
<td>24.25 (4.39)</td>
<td>2.12</td>
<td>0.149</td>
</tr>
<tr>
<td>Father's care</td>
<td>22.44 (4.74)</td>
<td>23.72 (4.69)</td>
<td>1.587</td>
<td>0.211</td>
</tr>
<tr>
<td>Care</td>
<td>45.30 (8.08)</td>
<td>47.98 (7.82)</td>
<td>2.459</td>
<td>0.12</td>
</tr>
</tbody>
</table>

The mean score for care was less for AV girls (45.3) as compared to NA participants (47.98), though the difference was not significant. Both the mother and father of anorexia vulnerable girls revealed lesser score for care than the parents of non anorexic girls (Table 1).

Level of depression:
On deploying BDI-II scale on both the groups it was observed that anorexic vulnerable girls showed significantly higher level of depression (26.69) as compared to their non-anorexic counterparts (21.03). Depressive symptoms were more common in girls vulnerable to anorexia than those who were not vulnerable to anorexia (Table 2).

Table 2: Comparative data for depression and BMI between anorexia vulnerable (AV) and non-anorexia (NA) adolescent

<table>
<thead>
<tr>
<th>Parameters</th>
<th>AV (N=36)</th>
<th>NA (N=54)</th>
<th>F-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>26.69 (9.77)</td>
<td>21.03 (8.71)</td>
<td>8.251</td>
<td>.005</td>
</tr>
<tr>
<td>BMI</td>
<td>21.03 (3.17)</td>
<td>19.48 (2.1)</td>
<td>8.023</td>
<td>.006</td>
</tr>
</tbody>
</table>

Body Mass Index (BMI):
BMI is used to assess whether a person’s weight is in healthy range or not and helps in classification of an individual as underweight or overweight. It was seen the girls who showed symptoms of anorexia had higher BMI (21.03kg/m²) than those who did not showed symptoms of anorexia (19.48 kg/m²), although the BMI was in the normal range for both the groups (Table 2).

Discussion
Overprotection and less care score by the parents in case of anorexia vulnerable girls indicated dysfunctional parental bonding between children and parents. This dysfunctional bonding of parents with their daughters may be a risk factor in predisposing anorexia. Similar results were found in a systematic review which showed that women with eating disorders experience difficulties in parental bonding. (15) Lesser parental care and over protection may hinder independence, generate unhelpful beliefs and thus, may lead to unbalanced eating behavior. AV girls perceive both parents as having a multiple etiology and therefore, various factors like psychological, physiological and sociological, which may predispose the anorexic behavior, were studied and compared between anorexia vulnerable (AV) and non-anorexic (NA) girls. The results are shown in Table 1 and 2.

Parental perceptions
Six items of parental perceptions were assessed and compared between adolescent girls vulnerable to anorexia and their non-

Anthropometric details: To assess the nutritional status of the subjects, Body Mass Index (BMI) was computed using following formula: BMI= Weight (kg)/Height(m)^2.

Results
Ninety adolescent girls in the age range of 16-18 years were screened for vulnerability towards anorexia nervosa and it was found that 36 girls (40%) were vulnerable to anorexia and 54 (60%) were categorized as non-anorexic. Anorexia nervosa has a multiple etiology and therefore, various factors like psychological, physiological and sociological, which may predispose the anorexic behavior, were studied and compared between anorexia vulnerable (AV) and non-anorexic (NA) girls. The results are shown in Table 1 and 2.

Majority of the school going adolescent girls in Didihat block of Pithoragarh district are attending government schools, hence, the sample was limited only to the girls going to the government schools for a better representation of the population. The girls who reported being under medication for any physiological and psychological ailment were excluded from the sample as their medical condition may influence the anorexia scores. The adolescent girls who reported lack of parental (mother, father or both) contact during early 16 years of their lives either due parental death, separation (divorce or left family) or parental job in cities were not included in the study as in these cases parenting is not directly influencing the behavioral and development patterns of the adolescent.

The following tools were employed for the collection of the data:
1. **Personal Data Schedule (PDS):** The self developed questionnaire focused mainly upon the demographic details and psychophysiological status.
2. **Anorexia Test (AT):** Anorexia test was standardized on adolescent females (15-18 years). It is 30 item self-rating scale based on the symptoms found in the patients of anorexia nervosa. The items were confined to different categories as: food avoidances, medical complications, body of figure consciousness, psychological factors. The reliability of the test is 0.97. The content validity of the test is adequate. (12)
3. **Beck Depression Inventory-II edition (BDI-II):** The Beck Depression inventory-second edition is a 21-item self-report instrument for measuring the severity of depression in adults and adolescents aged of 13 years and older. The BDI consists of 4 scales. The cut score guideline for these scales from total scores of patients diagnosed with major depression is 0-13 for minimal depression, 14-19 for mild depression, 20-28 for moderate and 29-63 for severe depression. The reliability of the tool is .74 and the construct validity of the tool is 0.93. (13)
4. **Parental Bonding Instrument (PBI):** The parental bonding instrument is a self-report questionnaire including 25 items, each describing a parental attitude toward the subject. There are 12 “care” item reflecting the dimensions of care/involvement versus indifference/intrusion versus encouragement of independence. And 13 are “overprotection” item. Participants are asked to rate each parent on a 4-point liker scale, in which 0 is very like, 1 is moderately like, 2 is moderately unlike & 3 is very unlike the parent in question. Reliability and validity of the tool was found to be satisfactory. (14)
5. **Anthropometric details:** To assess the nutritional status of the subjects, Body Mass Index (BMI) was computed using following formula: BMI= Weight (kg)/Height(m)^2.
as less caring and more protective. (16, 17) Parents can play a vital role in initiation, proliferation and management of the disorder. The AV adolescent girls experienced depression in conjunction with eating disorder. The depression may contribute to dissatisfaction with their body image or vice versa and thereby leading to deviated eating behavior. The high depression among AV girls is in agreement with the previous study, which reported that adolescents’ suffering from any form of eating disorder exhibit depressive symptoms compared to their control counterparts. (18)

In the present study, the girls having slightly higher weight showed vulnerability towards anorexia. A significant positive correlation between eating disorder and BMI was observed by Babu and Aroor. (19) This may be due to the fact that girls with higher weight may be suffering from higher pressure to lose their weight and therefore showed more inclination towards anorexic behavior. Although the BMI of girls vulnerable to anorexia was normal still they showed anorexic symptoms. Probably their counterparts had lesser weight and their own perception of ideal body weight coupled with peer pressure may have led to body image dissatisfaction. Similar explanation was seen in a study which states that having more weight than the peers or looking less lean than peers is associated with poor body image among adolescent girls, which may further lead to development of eating disorder. (20)

Conclusion

Anorexia nervosa which was earlier considered to be an eating disorder associated with western and urban culture is teaching in the rural Indian setup as well. Vulnerability towards anorexic tendency was observed among adolescent girls. Physiological as well as psychosocial factors contributed to the vulnerability. The ideal body image expectations burden levied by self, society, peers and media for an adolescent may have repercussions as evident in form of high levels of depression. Parental role remains vital. More such researches in the rural setup are required for identifying the etiology and outcome of disorder for a better and timely management of the disorder.

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