Introduction:
Adolescence is a transition period from childhood to adulthood and is characterized by a spurt in physical, endocrinal, emotional, and mental growth. As the direct reproducers of future generations, the health of adolescent girls influences not only their own health, but also the health of the future population. Almost a quarter of India’s population comprises of girls below 20 years.¹

One of the major physiological changes that take place in adolescent girls is the onset of menarche, which is often associated with problems of irregular menstruation, excessive bleeding, and dysmenorrhea. Of these, dysmenorrhea, recurrent, cramping lower abdominal pain during menstruation is one of the common problems experienced by many adolescent girls. The prevalence of dysmenorrhea among adolescent girls ranges from 60 to 83 percent. Many adolescents reported limitation on daily activities, such as missing school, sporting events, and other social activities, because of dysmenorrhea. However, only 15 percent of females seek medical advice for menstrual pain, signifying the importance of screening all adolescent females for dysmenorrhea.²

The society for menstrual cycle research reports a survey conducted in Eastern Turkey with 1951 girls from 26 high schools on the effects of dysmenorrhea on the school performance and relationship with family and friends. Unsurprisingly, more than half of the girls surveyed reported that dysmenorrhea does affect their ability to perform well at school, with 50% of the girls reporting "lack

Keywords: Adolescent girls, dysmenorrhea, menstrual characteristics.
of focus on the content of the courses" and 26.9% reporting "not being able to answer the questions in exams despite having the knowledge". Majority 77.3% reported "having problems with their families" when they are experiencing menstrual pain.  

A descriptive cross-sectional study was conducted in the schools in Sidon city, Lebanon among 389 schoolgirls on their menstrual experiences. It shows that 97% used negative words like "disgusting" (30.5%), "painful" (9.1%), "bad" (8.8%), "I hate it" (5%), "It’s hard" (3.9%), "depressing" (3.8%), "like a disease" (3.4%), "tiring" (3.4%), "I wish I never had it" (0.9%), "ridiculous" (0.9%), "like a virus", "embarrassing" (0.6%) and others (0.3%). The findings indicates that the dysmenorrhea is higher among the girls having negative menstrual experiences. This shows that even though menstruation is a blessing most of the girls are not able to perceive it and consider it as a curse throughout their life due to the pain associated with it.2

Another study was conducted to find the incidence of dysmenorrhea among 1648 adolescent girls in selected districts of Karnataka. In that the incidence of dysmenorrhea was found to be 87%, of these 46.69% had severe pain during menstruation. Among those 63% of girls experienced dysmenorrhea before the onset of bleeding and 37% experienced after the onset of bleeding3.

Statement of the problem
A descriptive study to assess dysmenorrhea, Characteristics and associated symptoms among adolescent girls in selected residential schools of Udupi district, Karnataka.

Aims and objectives
1. identify dysmenorrhea and associated symptoms among adolescent girls in selected residential schools of Udupi district.
2. assess the characteristics of dysmenorrhea among adolescent girls in selected residential schools of Udupi district.
3. find out the association between dysmenorrhea and selected variables.

Materials and methods:
A descriptive survey was used for the study. The settings for the study were residential schools in Udupi district. Only adolescent girls between 12 to 17 years, studying in residential schools were included in the study. Simple random sampling was used to select the four residential schools in Udupi district by using lottery method. The schools selected were Sharada residential school, Udupi, Sri Bhuvanendra residential school, Karkala, Little rock residential school, Brahmavar and Jawahar Navodaya Vidyalaya, Hebri. All the adolescent girls who met the sampling criteria were included in the study. The total sample size was 233. The data was collected from 5th January to 10th March 2013.

The tools developed by the researcher were validated by seven experts. Data were collected in January 2013, after obtaining permission from concerned school authorities and participant’s informed consent. Tool 1: Baseline proforma, Tool 2: Dysmenorrhea questionnaire, Tool 3: Numerical Pain Scale. The baseline proforma consisted of the background information of the samples. Dysmenorrhea questionnaire was constructed to know in detail regarding the history, characteristics and symptoms associated with dysmenorrhea. It consist of four sections. Section 1 – Menstrual history, section 2 – Dysmenorrhea associated symptom checklist, section 3 – Dysmenorrhea characteristics and section 4 – Effects of Dysmenorrhea. The intensity of pain was measured by using a numerical pain scale. It’s a line with equidistant marks from 0 to 10. The minimum score was 0 and maximum score was 10. The scores were arbitrarily classified as mild dysmenorrhea (1-3), moderate dysmenorrhea (4-7) and severe dysmenorrhea (8-10).

Content validity was established by the percentage of agreement of experts. The test-retest method was employed to find out the reliability, where ‘r’ was found to be 0.98.

Results:
1. Description of baseline variables
Majority of the adolescent girls 159(68.2%) belonged to...
the age group of 12 -14 years as shown in Table 1. In that most of the adolescent girls 151(64.8%) were staying in nuclear family. Out of 233 sample, most of the adolescent girls 117(50.2%) were having the family history of dysmenorrhea. Majority of the adolescent girls 167(71.7%) were having mixed diet and in that 192(82.4%) of them were not having any known medical problems.

2. Dysmenorrhoea and associated symptoms
Majority of the adolescent girls 146 (62.7%) experienced dysmenorrhea as shown in Table 2. Further analysis was conducted to find out the severity of dysmenorrhea and from fig 1, it can be seen that out of 233 samples, 28(12%) had mild pain, 77(33%) had moderate pain and 41(17.6%) had severe pain during menstruation.

There were 24 symptoms grouped under physical, gastrointestinal, eliminational and psychological symptoms in dysmenorrhea associated symptom checklist. The ranking of the symptoms in Table 3, showed tiredness 110(75.34%), back pain 106 (72.60%) and irritability 97(66.43%) as the most common symptoms associated with dysmenorrhea. Diarrhoea 10(6.84%), nausea 16(10.9%) and vomiting 16(10.9%)were the least common symptoms associated with dysmenorrhea among adolescent girls.

3. Dysmenorrhoea characteristics

3.1 Description of Menstrual history
Majority of the adolescent girls 146(62.7%) attained menarche at the age of 12-13 years and in that most of the adolescent girls 125(53.6%) are having a menstrual cycle of 21-28 days duration as shown in Table 5. Of the total 233, most of the adolescent girls 135(57.9%) are having a menstruation for 5-6 days in a month and they are changing an average of 2-3 soaked pads per day147(63.1%) as depicted in table 4.

3.2 Description of samples based on menstrual pain characteristics.

As depicted in table 5, most of the adolescent girls 68 (46.6%) are having dysmenorrhea from their first menstruation onwards. It’s also found that majority of the adolescent girls 71(48.6%) experienced dysmenorrhea for 1-4 hours. In that most of the adolescent girls 66(45.2%) are having severe pain during their first day of menstruation and when considering the body parts having pain most of them 53(36.3%) are having back pain and lower abdominal pain.

3.3 Description on the effects of menstrual pain
Dysmenorrhoea affects the studies of most of the adolescent girls 53(36.3%), in that majority of them are feeling weak and tired. When considering the hours of rest, majority 77(52.7%) are taking rest only for <6 hrs during the time of dysmenorrhoea. Only least number of participants shows those dysmenorrhea affects their daily activities 66(44.5%) and sleep 57(39%). Further analysis was conducted to know about the action taken for dysmenorrhea during school hours and results showed that majority of the adolescent girls 74(50.7%) manage the situation by self and 42(28.8%) ask permission from teacher and go to hostel during the time of dysmenorrhoea. Only very few adolescent girls are having the habit of skipping meals during dysmenorrhea and in that most of them are skipping lunch 35(23.9%).

4) Association between dysmenorrhoea and selected variables
Study showed an association between family history and dysmenorrhea (Z=16.673,p-value=0.001) and there is no association between age in years, onset of menarche, duration of menstrual flow, dietary pattern and family history of dysmenorrhea.

Table 1: Frequency and percentage distribution of baseline variables.

<table>
<thead>
<tr>
<th>Sl.no</th>
<th>Sample characteristics</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Age in years</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12-14</td>
<td>159</td>
<td>68.2</td>
</tr>
<tr>
<td></td>
<td>15-17</td>
<td>74</td>
<td>31.8</td>
</tr>
<tr>
<td>2)</td>
<td>Year of study</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7th</td>
<td>45</td>
<td>19.3</td>
</tr>
<tr>
<td></td>
<td>8th</td>
<td>51</td>
<td>21.9</td>
</tr>
<tr>
<td></td>
<td>9th</td>
<td>68</td>
<td>29.2</td>
</tr>
<tr>
<td></td>
<td>10th</td>
<td>69</td>
<td>29.6</td>
</tr>
<tr>
<td>3)</td>
<td>Type of family</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nuclear Family</td>
<td>151</td>
<td>64.8</td>
</tr>
</tbody>
</table>
### Table 1: Sample characteristics

<table>
<thead>
<tr>
<th>Sl.no</th>
<th>Sample characteristics</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Joint family</td>
<td>79</td>
<td>33.9</td>
</tr>
<tr>
<td>2)</td>
<td>Extended Family</td>
<td>3</td>
<td>1.3</td>
</tr>
<tr>
<td>3)</td>
<td>Family history of dysmenorrhoea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>117</td>
<td>50.2</td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>116</td>
<td>49.8</td>
<td></td>
</tr>
<tr>
<td>4)</td>
<td>Dietary pattern</td>
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<td></td>
</tr>
<tr>
<td>vegetarian</td>
<td>66</td>
<td>28.3</td>
<td></td>
</tr>
<tr>
<td>mixed diet</td>
<td>167</td>
<td>71.7</td>
<td></td>
</tr>
<tr>
<td>5)</td>
<td>Any known medical problems</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anemia</td>
<td>12</td>
<td>5.2</td>
<td></td>
</tr>
<tr>
<td>Headache</td>
<td>17</td>
<td>7.3</td>
<td></td>
</tr>
<tr>
<td>other problems</td>
<td>12</td>
<td>5.2</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>192</td>
<td>82.4</td>
<td></td>
</tr>
</tbody>
</table>

### Table 2: Frequency and percentage of dysmenorrhoea

<table>
<thead>
<tr>
<th>Presence of dysmenorrhoea</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>146</td>
<td>62.7</td>
</tr>
<tr>
<td>No</td>
<td>87</td>
<td>37.3</td>
</tr>
<tr>
<td>Total</td>
<td>233</td>
<td>100.0</td>
</tr>
</tbody>
</table>

### Table 3: Frequency and percentage distribution of the dysmenorrhoea associated symptoms

<table>
<thead>
<tr>
<th>Physical symptoms</th>
<th>Frequency</th>
<th>Percentage (%)</th>
<th>Ranking of the symptoms</th>
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</thead>
<tbody>
<tr>
<td>Tiredness</td>
<td>110</td>
<td>75.3</td>
<td>1</td>
</tr>
<tr>
<td>Headache</td>
<td>42</td>
<td>28.7</td>
<td>11</td>
</tr>
<tr>
<td>Giddiness</td>
<td>33</td>
<td>22.6</td>
<td>15</td>
</tr>
<tr>
<td>Sleeplessness</td>
<td>47</td>
<td>32.19</td>
<td>10</td>
</tr>
<tr>
<td>Increased sleep</td>
<td>41</td>
<td>28.08</td>
<td>12</td>
</tr>
<tr>
<td>feeling fullness in lower abdomen</td>
<td>71</td>
<td>48.6</td>
<td>7</td>
</tr>
<tr>
<td>back pain</td>
<td>106</td>
<td>72.6</td>
<td>2</td>
</tr>
<tr>
<td>tenderness of breasts</td>
<td>24</td>
<td>16.4</td>
<td>17</td>
</tr>
<tr>
<td>knee pain</td>
<td>50</td>
<td>34.2</td>
<td>9</td>
</tr>
<tr>
<td>swelling of legs</td>
<td>23</td>
<td>15.7</td>
<td>18</td>
</tr>
<tr>
<td>facial puffiness</td>
<td>33</td>
<td>22.6</td>
<td>15</td>
</tr>
<tr>
<td>Gastrointestinal symptoms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loss of appetite</td>
<td>39</td>
<td>26.7</td>
<td>13</td>
</tr>
<tr>
<td>Increased appetite</td>
<td>22</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>Nausea</td>
<td>16</td>
<td>10.9</td>
<td>20</td>
</tr>
<tr>
<td>Vomiting</td>
<td>16</td>
<td>10.9</td>
<td>20</td>
</tr>
<tr>
<td>Eliminational symptoms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>constipation</td>
<td>29</td>
<td>19.8</td>
<td>16</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>10</td>
<td>6.8</td>
<td>21</td>
</tr>
<tr>
<td>Increased frequency of urination</td>
<td>50</td>
<td>34.2</td>
<td>9</td>
</tr>
<tr>
<td>Profuse sweating</td>
<td>38</td>
<td>26</td>
<td>14</td>
</tr>
<tr>
<td>Psychological symptoms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>57</td>
<td>39</td>
<td>8</td>
</tr>
<tr>
<td>Mood swings</td>
<td>78</td>
<td>53.4</td>
<td>5</td>
</tr>
<tr>
<td>Irritability</td>
<td>97</td>
<td>66.4</td>
<td>3</td>
</tr>
<tr>
<td>Inability to concentrate</td>
<td>82</td>
<td>56.1</td>
<td>4</td>
</tr>
<tr>
<td>Nervousness</td>
<td>77</td>
<td>52.7</td>
<td>6</td>
</tr>
</tbody>
</table>

### Table 4: Frequency and percentage distribution based on menstrual history

<table>
<thead>
<tr>
<th>Sl.no</th>
<th>Sample characteristics</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Age of menarche</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;12</td>
<td>54</td>
<td>23.2</td>
<td></td>
</tr>
<tr>
<td>12-13</td>
<td>146</td>
<td>62.7</td>
<td></td>
</tr>
<tr>
<td>14-15</td>
<td>31</td>
<td>13.3</td>
<td></td>
</tr>
<tr>
<td>&lt;15</td>
<td>2</td>
<td>0.9</td>
<td></td>
</tr>
</tbody>
</table>

**Keywords**: Adolescent girls, dysmenorrhoea, menstrual characteristics. - Nayana S. George
### Table 5: Frequency and percentage distribution of adolescent girls based on dysmenorrhoea characteristics

<table>
<thead>
<tr>
<th>Sl.no</th>
<th>Sample characteristics</th>
<th>Frequency</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Experience of pain due to menstruation</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>first menstruation onwards</td>
<td>68</td>
<td>46.6</td>
</tr>
<tr>
<td></td>
<td>within an year after first menstruation</td>
<td>34</td>
<td>23.3</td>
</tr>
<tr>
<td></td>
<td>after one year</td>
<td>30</td>
<td>20.5</td>
</tr>
<tr>
<td></td>
<td>after two or more years</td>
<td>14</td>
<td>9.6</td>
</tr>
<tr>
<td>2)</td>
<td>Day of menstruation with severe pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>One day before the onset of menstruation</td>
<td>31</td>
<td>21.3</td>
</tr>
<tr>
<td></td>
<td>On the first day</td>
<td>66</td>
<td>45.2</td>
</tr>
<tr>
<td></td>
<td>On the second day</td>
<td>50</td>
<td>34.24</td>
</tr>
<tr>
<td></td>
<td>Any other days</td>
<td>13</td>
<td>8.90</td>
</tr>
<tr>
<td>3)</td>
<td>Total duration of pain in hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>&lt;1</td>
<td>39</td>
<td>26.7</td>
</tr>
<tr>
<td></td>
<td>1-4</td>
<td>71</td>
<td>48.6</td>
</tr>
<tr>
<td></td>
<td>5-8</td>
<td>28</td>
<td>19.2</td>
</tr>
<tr>
<td></td>
<td>&gt;8</td>
<td>8</td>
<td>5.5</td>
</tr>
<tr>
<td>4)</td>
<td>Body parts having pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>lower abdomen only</td>
<td>46</td>
<td>31.5</td>
</tr>
<tr>
<td></td>
<td>lower abdomen and back only</td>
<td>53</td>
<td>36.3</td>
</tr>
<tr>
<td></td>
<td>lower abdomen, back and legs</td>
<td>43</td>
<td>29.5</td>
</tr>
<tr>
<td></td>
<td>other body parts</td>
<td>4</td>
<td>2.7</td>
</tr>
<tr>
<td>5)</td>
<td>Measures taken to get relief from abdominal pain:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>medicines</td>
<td>15</td>
<td>10.2</td>
</tr>
<tr>
<td></td>
<td>hot applications</td>
<td>18</td>
<td>12.32</td>
</tr>
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<td></td>
<td>massage</td>
<td>15</td>
<td>10.2</td>
</tr>
<tr>
<td></td>
<td>bedrest</td>
<td>108</td>
<td>73.97</td>
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<tr>
<td></td>
<td>any other</td>
<td>5</td>
<td>3.42</td>
</tr>
<tr>
<td></td>
<td>no measures</td>
<td>4</td>
<td>2.73</td>
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</table>

Keywords: Adolescent girls, dysmenorrhoea, menstrual characteristics. - Nayana S. George
Table 6: Frequency and percentage distribution of the effects of menstrual pain

<table>
<thead>
<tr>
<th>Sl.no</th>
<th>Sample characteristics</th>
<th>Frequency</th>
<th>Percentage(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1)</td>
<td>Effect on daily activities</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>yes</td>
<td>65</td>
<td>44.5</td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>81</td>
<td>55.5</td>
</tr>
<tr>
<td>2)</td>
<td>Effect on studies</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>school absenteeism</td>
<td>5</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>feeling weak and tired</td>
<td>53</td>
<td>36.3</td>
</tr>
<tr>
<td></td>
<td>lack of concentration</td>
<td>32</td>
<td>21.91</td>
</tr>
<tr>
<td></td>
<td>Not interested to study</td>
<td>21</td>
<td>14.38</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>48</td>
<td>32.9</td>
</tr>
<tr>
<td>3)</td>
<td>Effect on sleep</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>yes</td>
<td>57</td>
<td>39</td>
</tr>
<tr>
<td></td>
<td>no</td>
<td>89</td>
<td>61</td>
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<tr>
<td>4)</td>
<td>Rest during the time of dysmenorrhoea</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>&lt;6hrs</td>
<td>77</td>
<td>52.7</td>
</tr>
<tr>
<td></td>
<td>6-18hrs</td>
<td>24</td>
<td>16.4</td>
</tr>
<tr>
<td></td>
<td>18-24hrs</td>
<td>5</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>&gt;24hrs</td>
<td>2</td>
<td>1.4</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>38</td>
<td>26</td>
</tr>
<tr>
<td>5)</td>
<td>Action taken for dysmenorrhoea during school hours</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>inform class teacher and seek help</td>
<td>8</td>
<td>5.4</td>
</tr>
<tr>
<td></td>
<td>inform friends and get help</td>
<td>30</td>
<td>20.5</td>
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<tr>
<td></td>
<td>manage the situation by self</td>
<td>74</td>
<td>50.7</td>
</tr>
<tr>
<td></td>
<td>ask permission from teacher and going to hostel</td>
<td>42</td>
<td>28.8</td>
</tr>
<tr>
<td></td>
<td>other measures</td>
<td>2</td>
<td>1.8</td>
</tr>
<tr>
<td>6)</td>
<td>Skipping meals during dysmenorrhoea</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>breakfast</td>
<td>17</td>
<td>11.6</td>
</tr>
<tr>
<td></td>
<td>lunch</td>
<td>35</td>
<td>23.9</td>
</tr>
<tr>
<td></td>
<td>dinner</td>
<td>21</td>
<td>14.3</td>
</tr>
<tr>
<td></td>
<td>any other</td>
<td>5</td>
<td>3.4</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>84</td>
<td>57.5</td>
</tr>
</tbody>
</table>

Table 7: Association between dysmenorrhoea categories and selected variables.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Dysmenorrhoea categories</th>
<th>Chi-square</th>
<th>p-value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mild</td>
<td>moderate</td>
<td>severe</td>
<td></td>
</tr>
<tr>
<td>1. Age in years</td>
<td>12-14</td>
<td>16</td>
<td>53</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>15-17</td>
<td>12</td>
<td>24</td>
<td>16</td>
</tr>
<tr>
<td>2. Onset of menarche</td>
<td>&lt;12</td>
<td>8</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>12-13</td>
<td>18</td>
<td>48</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>14-15</td>
<td>2</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>&gt;15</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>3. Duration of menstrual flow</td>
<td>&lt;3</td>
<td>1</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>3-4</td>
<td>12</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>5-6</td>
<td>13</td>
<td>46</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>&gt;6</td>
<td>2</td>
<td>10</td>
<td>6</td>
</tr>
<tr>
<td>4. Dietary pattern</td>
<td>vegetarian</td>
<td>4</td>
<td>22</td>
<td>13</td>
</tr>
<tr>
<td></td>
<td>mixed diet</td>
<td>25</td>
<td>56</td>
<td>27</td>
</tr>
</tbody>
</table>
**Variables** | **Dysmenorrhea categories** | **Chi-square** | **p-value** | **Significance**
--- | --- | --- | --- | ---
7. Family history of dysmenorrhea | | | | |
yes | mild | moderate | severe | 16.673 | 0.001* | Significant |
no | 12 | 37 | 11 | |
8. Sleep | | | | |
yes | 10 | 32 | 15 | 0.439 | 0.803* | Not significant |
No | 18 | 45 | 26 | |
*Pearson chi-square test was used
**Fissure exact test was used for categories with less than 5 samples.

**Fig 1:** Pie diagram showing percentage of adolescent girls with dysmenorrhea.

**Discussion:**

1. **Dysmenorrhea characteristics**

A cross sectional descriptive survey was conducted by Charu Shrotriya and Amita Ray in Mangalore on 560 female medical students, to evaluate the menstrual characteristics. The study findings showed that most of the participants 84.2% (472) had started menstruating between 12-14 years of age. A large chunk of students had menstrual cycle duration of 21 to 35 days; 97.2% (533) and a very small number (2.8%) had cycle length <21 days and >35 days. Most of the interviewees did not have dysmenorrhea among their immediate family members; 60.5% (339). The study findings support the present study findings except incase of family history of dysmenorrhea where 50% of participants had a family history of dysmenorrhea.

A community based cross-sectional study was conducted in 2013, among 440 adolescent girls in the rural area of Bijapur, Karnataka to know their menstrual pattern. The results showed that mean age of menarche of adolescent girls in the present study was 14 years; mean duration of blood flow 3.9±5.07 days and mean intermenstrual period 28.7±3.26 day’s. The findings support the present study findings.

The findings of the present study indicated that 146(62.7%) reported to have menstrual disturbance, of these treatment taken for menstrual discomforts bed rest(73.97%), medicines (10.2%), hot applications (12.32%) and other measures like lime juice, fenugreek water (3.4%). A study was conducted on prevalence and impact of dysmenorrhea on Hispanic female adolescents. A total of 706 Hispanic adolescent girls were interviewed. 85% reported to have dysmenorrhea, of these treatments taken for dysmenorrhea included rest (58%), medications (52%), Hot water application (26%), 49% consulted the physician. The study supports the findings of the present study.

2. **Dysmenorrhea and associated symptoms**

The findings were supported by a cross sectional study conducted in Egypt by Eman Mohammed among the four secondary schools for girls in Assuit city. Simple random sampling was used to select 845 adolescent girls. The results of the study showed that the prevalence of dysmenorrhea was 76.1% (n = 643); of these, 26.6% described their menstrual pain as mild, 32.0% as moderate and 41.4% as severe.

An exploratory survey conducted by Anil K Agarwal to study evidence of severity of dysmenorrhea with associated symptoms and general health status. Multistage cluster sampling technique was used to select 970 adolescent girls of age 15 to 20 years studying in selected higher secondary schools. The results of the study showed that the three

**Keywords:** Adolescent girls, dysmenorrhea, menstrual characteristics. - Nayana S. George
most common symptoms associated with menstruation were lethargy and tiredness (first), depression (second) and inability to concentrate in work (third), whereas the ranking of these symptoms on the day after the stoppage of menstruation showed depression as the first common symptom. This study support the present study findings.

3. Association between dysmenorrhoea and selected variables
The findings are contradicted by a cross-sectional study conducted on 500 healthy females aged 18-28 years in Mysore. Standardized Self-reporting questionnaires were used to obtain relevant data. Majority (72.9%) of the participants experienced menstrual pain. More than 50% dysmenorrheic subjects experienced pain every menstrual cycle. Among the factors studied menstrual flow, length of flow and family history exhibited positive association while family size had an inverse association to a significant extent (p = 0.01).

Conclusion:
Dysmenorrhoea is a very common problem among adolescent girls and they experience a number of physical, gastrointestinal, eliminational and psychological symptoms associated with it. Adolescent girls, almost silently suffer the pain by dysmenorrhoea and the symptoms associated with it. It is found to be a leading cause of low academic performance. The finding of this study indicates the need for appropriate intervention through lifestyle changes.

Acknowledgement:
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References:

Keywords: Adolescent girls, dysmenorrhoea, menstrual characteristics.