Life Satisfaction as a Determinant of Life Engagement

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Abstract
The aim of this study was to investigate the impact of life satisfaction on life engagement. A total of 210 University students participated in the study. Before conducting the study, the Satisfaction With Life Scale (SWLS) and the Life Engagement Test (LET) were translated into Bangla and validated in Bangladeshi culture. Exploratory Factor Analysis identified a one factor model for the SWLS, accounting for 55.55% of the total variance and a one factor model for the LET, accounting for 46.80% of the total variance. Both the measures showed good internal consistency (Cronbach’s α=.79, for SWLS and Cronbach’s α=.77 for LET), and construct validity. The regression analysis showed that the model was significant and explained 19.3% of the variance in subject’s life engagement ($R^2=.193$, $p=.001$). Standardized β value indicates that life satisfaction was positively correlated with life engagement ($β=.444$, $p=.001$) and significantly predicted this criterion. Implications of the findings for theory, research and practice are discussed.

Introduction
Satisfaction with life is one of the several aspects of positive mental health. It refers to a cognitive, judgmental process. It is not a direct, verifiable experience, nor a known personal fact, but a cognitive product that involves a comparative process between the individual’s current life situation and internalized standards, allowing respondents to use the information they subjectively deem relevant when evaluating their own lives (Cummins & Nistico, 2002). It is the way a person perceives how his or her life has been and how they feel about where it is going in the future. Shin and Johnson (1978) defined life satisfaction as "a global assessment of a person's quality of life according to his chosen criteria". Judgments of satisfaction are dependent upon a comparison of one's circumstances with what is thought to be an appropriate standard. It is important to point out that the judgment of how satisfied people are with their present state of affairs is based on a comparison with a standard which each individual sets for him or herself; it is not externally imposed.

Life satisfaction is an overall assessment of feelings and attitudes about one’s life at a particular point in time ranging from negative to positive. It is one of the major indicators of subjective well-being (Diener, 1984). Subjective well-being represents a hedonic well-being concept with roots in the mid-seventies when Andrews and Whitey (1976) introduced a well-being structure consisting of three factors: cognitive evaluation, negative affect, and positive affect. Some years later Diener (1984) rephrased the concept
using the narrower name subjective well-being, with the intention of accentuating the importance of assessing the subjective experience of life in contrast to an assessment of life conditions using an absolute, fixed standard as a reference. According to him, subjective well-being covers two main components: one affective including negative and positive emotions, and one cognitive; namely life satisfaction.

![Diagram](source: Diener, 1984)

**Figure-1:** The Concept of Life Satisfaction in a Subjective Well-Being Framework

Diener (1984) also explained that subjective and objective perspectives are used to explain the determinants of life satisfaction or quality of life. The subjective construct hypothesizes that perceived quality of life is influenced by personality or dispositional factors (e.g., optimism, pessimism, isolation, self-worth, and neuroticism). On the other hand, the objective construct proposes that life quality is affected by environmental or situational factors (e.g., family, job, leisure, neighborhood, community, and satisfaction with standard of living) (Leung, 2009). According to the objective determinants of life quality, people’s quality of life tends to be a direct function of their evaluations of important life domains such as social support, leisure activities, and standard of living of overall life (Andrews & Withey, 1976; Diener, 1984).

Although satisfaction with current life circumstances is often assessed in research studies, Diener, Suh, Lucas, & Smith (1999) also include the following under life satisfaction: desire to change one’s life; satisfaction with past; satisfaction with future; and significant other’s views of one’s life" (Beutell, 2006). It is a measure of well-being and may be assessed in terms of mood, satisfaction with relations with others and with achieved goals, self-concepts, and self-perceived ability to cope with daily life. It is having a favorable attitude of one's life as a whole rather than their current feelings (Diener, 1984). It is for this reason that we need to ask the person for their overall evaluation of their life, rather than summing across their satisfaction with specific domains, to obtain a measure of overall life satisfaction. As Tatarkiewicz (1976) wrote, “...happiness requires total satisfaction, that is satisfaction with life as a whole” (p. 8).
Life satisfaction can also be looked at in a new one as influenced by a family. Family life satisfaction is a pertinent topic as everyone's family influences them in some way and most strive to have high levels of satisfaction in life as well as within their own family. As discussed by Gary L. Bowen (1988) in his article "Family Life Satisfaction: A Value Based Approach", family life satisfaction is enhanced by the ability of family members to jointly realize their family-related values in behavior. It is important to examine family life satisfaction from all members of the family from a "perceived" perspective and an "ideal" perspective. Greater life satisfaction within a family increases through communication and understanding each member’s attitudes and perceptions. A family can make all the difference for someone's life satisfaction. Because hard times come around and oftentimes people count on their peers and family to help them through, it is no surprise that a higher life satisfaction level was reported of people who had social support, whether it be friends, family, or church. The people who personally valued material items were found to be less satisfied overall in life as opposed to people who attached a higher amount of value with interpersonal relationships. So these things can influence people to have higher satisfaction in their life as well as enhance people’s ability to identify valued goals of their life. An American study conducted on 134 young people revealed that Inner (cognitive) Fitness can have a substantial positive influence upon an individual’s life engagement and the wellbeing (Fletcher, 2007).

Life satisfaction can reflect experiences that have affected a person in a positive way. These experiences have the ability to motivate people to pursue and reach their goals. Positive views and life satisfaction are completely mediated by the concept of self-esteem, and the different way ideas and events are perceived by people. One's mood and outlook on life can also influence one's own perception of their life satisfaction. Satisfaction or dissatisfaction with standard of living is likely to spill over to influence subjective well-being (Leung, 2009) and this quality of life can be associated with life engagement which is also an important aspect of mental health. A study in USA showed that life engagement was a significant predictor of elders' life satisfaction (Lazar, 2000).

Life satisfaction which is another focus of the present study refers to the purpose in life. It also refers to the engagement in behavior that sustains life (Carver & Scheier, 1998). It is defined in terms of the extent to which a person engages in activities that are valued (Scheier et al., 2006). Given the central role that behavior plays in living, it is important to ask why people act. What is it that causes people to behave and remain engaged in what they do?

Recent models of behavioral self-regulation (Carver & Scheier, 1981, 1990, 1998), themselves descendents of generations of expectancy value models of motivation (Atkinson, 1964; Feather, 1982; Shah and Higgins, 1997; Vroom, 1964) suggest that two elements are important in creating behavior:
(a) the ability to identify goals that are valued and
(b) the perception that those goals are attainable.

Of these two elements, it is the value dimension that is of interest here. Valued goals are important because they provide a purpose for living. Valued goals also provide the mechanism by which a person remains behaviorally engaged in life. According to this view, behavior occurs either because the behavior represents a valued goal in and of itself (e.g., exercising for exercise sake) or because it is instrumental in achieving a more abstract, higher order goal that is valued (e.g., exercising in order to be “healthy”). Researchers found that there was a significant positive effect of engaging in deep discussion and reflection on one’s life goals, toward both increased purpose and increased psychological well-being (Bundick, 2009).

**Rationale of the Present Study**

The present study was conducted on university students. We chose university students because there age is characterized by psychological and developmental dynamics. Selecting the ‘right’ or ‘good’ decision in this age is an important issue. It is the appropriate time to take decision about life’s valuable goals and engage in them. Their cognitive judgment about their satisfaction can affect their decision regarding life engagement because life satisfaction is an indispensable part of subjective wellbeing. People who are satisfied with their life become motivated to identify valued goals of their life. If people are less satisfied with their life then we can assume that they might also have difficulties to be engaged in activities that sustain their life and make their life purposeful. Previous studies indicate strong relations among meaningful engagement, purpose, and psychological well-being (Bundick, 2009). Williamson & Carolyn (2011) also found that psychological meaningfulness and work engagement were significant predictors of life satisfaction. Contrary to a plethora of these studies that examined the relationship of life satisfaction with other variables, only few researches were conducted on life engagement and the association between life satisfaction and life engagement is still unknown. What scientists have known till today about life satisfaction and life engagement reflects the story of the western or advanced cultures and societies. Data are not available from a collectivistic or conservative society like Bangladesh. Collectivistic cultures focus on the primacy of one’s in group goals over individual wishes and desire, requiring individuals to adjust their behaviour to the group more than individualistic cultures (Matsumoto, Hossain, Uddin & Karim, 2007). Unlike individualistic cultures, collectivistic cultures therefore emphasize values such as conformity, obedience and in-group harmony.

These differences lead to the assumption that the present concept in Bangladesh might have different aspects and impacts on our personal life, family life and social life as well. Thus life satisfaction and life engagement of Bangladeshi people have been poorly understood. It is, therefore, essential to conduct a study in Bangladesh. The findings of
this study will give some understanding of how life satisfaction is associated with life engagement. Also public health measures to improve wellbeing would benefit from an understanding of life satisfaction and life engagement of students. This will help the administrators, policy makers, therapists and counselors to give attention to these matters and to handle them skillfully.

**Objective of the Present Study**
We assume that higher life satisfaction will lead to increase life engagement. Thus the present study was designed to see whether life satisfaction has any impact on life engagement.

**Hypothesis**
As satisfaction with standard of living influences subjective well-being, this cognitive judgment can also be associated with life engagement which is also an important aspect of mental health. So it can be hypothesized that people who have higher life satisfaction would have more life engagement.

**Method**

**The Sample**
A total of 210 undergraduate and graduate students studying in the University of Dhaka voluntarily participated in the study. Among the participants 117 (55.7%) were females and 93 (44.3%) were males. Their age ranged from 22 to 25 years with a mean of 23.38 and standard deviation of .97. 11% of the participants were from lower class family, 70.5% were from middle class family and 18.5% were from upper class family. 3.23% of the male participants and 14.53% of the female participants were married, whereas 29.03% of the male participants and 39.32% of the female participants were in a relationship.

**Measures**

**Satisfaction With Life Scale (SWLS).** A 5-item Satisfaction With Life Scale, originally developed by Diener, Emmons, Larsen and Griffin (1985), was used to measure global cognitive judgments of one’s life satisfaction. It is a 7-point Likert type scale ranging from 1 (strongly disagree) to 7 (strongly agree). Individuals on the SWLS can be classified as extremely dissatisfied (5 – 9), dissatisfied (10 – 14), slightly dissatisfied (15 – 19), neutral (20), slightly satisfied (21 – 25), satisfied (26 – 30), and extremely satisfied (31 – 35). The scale has high internal consistency and temporal reliability (Yoon & Lee, 2008). It has moderately strong correlations with other SWB measures (e.g., Rosenberg Self-Esteem Scale, Marlowe-Crowne Social Desirability Scale).

**Life Engagement Test (LET).** The 6-item Life Engagement Test, originally developed by Scheier et al. (2006), was designed to measure purpose in life. It is a 5-point Likert type scale ranging from 1 (strongly disagree) to 5 (strongly agree). Higher scores on the LET indicate more life engagement. The test-retest reliabilities range from .61 to .76. The correlation between the LET and the Purpose in Life Scale is .73 supporting the convergent validity of the measures (Scheier et al., 2006).
Procedure

Translating the measures into Bangla

The SWLS. The SWLS items were first translated into Bangla, called the first draft. It was then given to four judges, including one expert in Bangla, one expert in English and two experts in Psychology/Psychometrics. Their native language was Bangla, but being professors/lecturers of a university or college they had also very good command in English. Their task was to judge the accuracy of translation and relevance/suitability of each item for measuring life satisfaction in the socio-cultural context of Bangladesh. Each expert independently rated the translation using a 2-point scale (0 = Not correct, 1 = Correct) and the relevance of each item using another 2-point scale (0 = Not relevant, 1 = Relevant). Following their evaluation, accuracy of the translation was examined by calculating for each item the Accuracy Index (AI = Number of rating at 1/Number of experts; Karim & Nigar, 2014). The item yielding an AI of 1 (AI = 4/4) was considered to be correctly and reliably translated (Karim & Nigar, 2014). All the four experts rated 4 items’ translation at 1, the AI for each of them becoming 1. The remaining 1 item yielded an AI of less than 1. The experts suggested some corrections to the clarity, wording and organization of this item. By reviewing this item in the light of their comments and suggestions the accuracy of translation was ensured. The relevance/suitability of the items in Bangladeshi culture was examined by calculating for each item the Relevance Index (RI = Number of rating at 1/Number of experts; Karim & Nigar, 2014). The item yielding an RI of 1 or .75 (RI = 4/4 or RI = 3/4) was considered to be relevant or suitable (Karim & Nigar, 2014). All the four experts rated the relevance of each item at 1, the RI for them becoming 1. Thus the second draft of the Bangla version SWLS was finalized to administer on the selected participants.

The LET. The LET items were translated into Bangla following the same procedure as for the SWLS. All the four experts rated 4 items’ translation at 1, the AI for each of them becoming 1. The remaining 2 items’ yielded an AI of less than 1. By reviewing these items in the light of the expert’s comments and suggestions the accuracy of translation was ensured. All the four experts rated the relevance of each item at 1, the RI for them becoming 1. Thus the second draft of the Bangla version LET was finalized to administer on the selected participants.

Data acquisition

The students participated in the study on a voluntary basis. Each participant was briefed about the general study purpose and assured that their responses would be kept confidential and used only for research purposes. The survey components included an informed consent statement, socio-demographic section, the SWLS and the LET. Participants were given a general instruction verbally and were asked to sign on the consent paper, record the socio-demographic information, and read carefully the standard instructions of how to respond before going through the items of the testSCALE. Also further clarifications were done whenever they faced any problems to understand the items. Before answering any questions they were asked to provide general demographic
data (age, gender, marital status, relationship status, SES etc.). Thus the surveys were administered and data were collected over an 8-week period from all the participants.

Results

Cross-Cultural Validation of the Measures

Participant’s responses to the scale/test items were scored according to the scoring principles of the SWLS and the LET. Data for the 210 participants were fed into computer for item analysis and factor analysis on IBM SPSS Statistics 20. According to standard textbook authors and researchers, the minimum sample size for factor analysis varies from 100 (e.g., Gorsuch, 1983; Kline, 1979) to 250 (e.g., Cattell, 1978), and there is practice of applying factor analysis even to the data for less than 100 participants (e.g., Widyanto and McMurran, 2004). There is another set of recommendations varying from a minimum SV (subjects-to-variables) ratio of 2:1 (e.g., Guilford, 1956; Kline, 1979) to 10:1 (e.g., Everitt, 1975; Kunce et al., 1975; Marascuilo and Levin, 1983; Nunnally, 1978). The number of participants in this study was more than 35 times the number of LET items/variables (6). Thus the sample size required for factor analysis was satisfied. However, before carrying out factor analysis, we examined the response distributions of all SWLS items and LET items and estimated their internal consistencies by investigating inter-item correlations and item-total correlations. Then we analyzed the data in Exploratory Factor Analysis, EFA (a method widely used to uncover the underlying structure of a relatively large set of variables) for SWLS and LET. We also examined the translation and convergent validity of the measures and the reliability by estimating internal consistency (Cronbach’s α) of both the tests/scales.

Factor structure

Item analyses. Item analyses were done by estimating internal consistencies of both the SWLS and LET. Inter-item correlations were examined for the SWLS and LET. The results are presented below.

The SWLS. Response distributions of the SWLS items indicated that none of these variables/items were excessively skewed or kurtotic (Karim & Nigar, 2014; Kendall & Stuart, 1958). The correlation matrix for the SWLS (R-matrix, Table-1) contained no negative and non-significant values. That is, all of the 10 inter-item correlation coefficients were significant. Inter-item coefficients for the 5 items ranged from .22 to .69, the average value being .44. The item-total correlations were also significant and ranged from .65 to .82 with a mean of .74. So, no item was excluded on the basis of the item response distributions or correlation matrix.
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Table-1: Correlation matrix (R-matrix) for SWLS

<table>
<thead>
<tr>
<th>Item</th>
<th>SWLS 01</th>
<th>SWLS 02</th>
<th>SWLS 03</th>
<th>SWLS 04</th>
<th>SWLS 05</th>
<th>SWLS Total</th>
</tr>
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<tbody>
<tr>
<td>SWLS 01</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>SWLS 02</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<td>SWLS 03</td>
<td>.40**</td>
<td>.69**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWLS 04</td>
<td>.34**</td>
<td>.48**</td>
<td>.53**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SWLS 05</td>
<td>.22**</td>
<td>.44**</td>
<td>.38**</td>
<td>.41**</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>SWLS Total</td>
<td>.65**</td>
<td>.82**</td>
<td>.80**</td>
<td>.74**</td>
<td>.68**</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: N=210, average inter-item correlation = .44, average item-total correlation = .74

** p< .01 (one-tailed)

*Determinant = .205

The LET. Item analysis was done for the LET following the same procedure as for the SWLS. Response distributions of the items were not skewed or kurtotic. The correlation matrix (R-matrix, Table-2) contained no negative values and out of 15 inter-item correlation coefficients, 14 were significant. That is 93.33 percent inter-item correlations were significant. Inter-item coefficients for the 6 items ranged from .07 to .55, the average value being .35. But, the item-total correlations were all significant and ranged from .56 to .76 with a mean of .68. So, no item was excluded on the basis of the item response distributions or correlation m

Table-2: Correlation matrix (R-matrix) for LET

<table>
<thead>
<tr>
<th>Item</th>
<th>LET 01</th>
<th>LET</th>
<th>LET</th>
<th>LET</th>
<th>LET</th>
<th>LET</th>
<th>LET Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>LET 01</td>
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<td></td>
</tr>
<tr>
<td>LET 02</td>
<td>.26**</td>
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<td></td>
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<tr>
<td>LET 03</td>
<td>.51**</td>
<td>.44**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LET 04</td>
<td>.33**</td>
<td>.55**</td>
<td>.53**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LET 05</td>
<td>.26**</td>
<td>.35**</td>
<td>.28**</td>
<td>.28**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LET 06</td>
<td>.33**</td>
<td>.35**</td>
<td>.36**</td>
<td>.38**</td>
<td>.07</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>LET</td>
<td>.64**</td>
<td>.74**</td>
<td>.76**</td>
<td>.75**</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>.56**</td>
<td>.63**</td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Note: N=210, average inter-item correlation = .35, average item-total correlation = .68

** p< .01 (one-tailed)

*Determinant = .229
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Factor analyses

**The SWLS.** The SWLS items were subjected to the Principal Component Analysis (PCA). The rotation method was varimax with Kaiser Normalization. Before performing PCA, the suitability of the data for factor analysis was assessed by carrying out the measures of sampling adequacy on the 5-item SWLS. Inspection of the correlation matrix for SWLS revealed a substantial number (90%) of coefficients .30 and above. The determinant of R-matrix was .205 (>0.00001, Field, 2005). It indicates that there was no multicolinearity (very highly correlated variables) or singularity (perfectly correlated variables) problems. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy indicated a value of .782 which exceeded the recommended value of .60 (Kaiser, 1970). Bartlett’s test of sphericity indicated a Chi-Square value of 327.587 (p< .001). All this together supports the factorability of the R-matrix of the SWLS. Data for the full set of SWLS items were therefore subjected to Exploratory Factor Analysis (EFA). The analysis with eigenvalue >1.00 (the Kaiser-Guttman criterion) extracted 1 factor, accounting for 55.55% of the total variance. Inspection of the scree plot (Fig 2a) also revealed a clear break after the first component (Cattle, 1966; Floyd & Widaman, 1995). Thus it was evident that the SWLS is a unifactorial measure. That is, the scale has factorial validity meaning that all the items of the scale measure the same thing.

![Scree Plot](a) ![Scree Plot](b)

**Figure-2:** The scree plots generated in EFA: (a) for 5 items of SWLS, and (b) for 6 items of LET.

**The LET.** Factor analysis of the LET was done following the same procedure as for the SWLS. Inspection of the correlation matrix for LET revealed a substantial number
(66.67%) of coefficients .30 and above. The determinant of R-matrix was .229 (>0.00001, Field, 2005) which indicates that there was no multicolinearity (very highly correlated variables) or singularity (perfectly correlated variables) problems. The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy indicated a value of .784 which exceeded the recommended value of .60 (Kaiser, 1970). Bartlett’s test of sphericity indicated a Chi-Square value of 304.167 (p< .001). All this together supports the factorability of the R-matrix of the LET. Data were therefore subjected to Exploratory Factor Analysis (EFA). The analysis with eigenvalue > 1.00 (the Kaiser-Guttman criterion) extracted 1 factor, accounting for 46.80% of the total variance. Inspection of the scree plot (Fig 2b) also revealed a clear break after the first component (Cattle, 1966; Floyd & Widaman, 1995). Thus it was evident that the LET is a unifactorial measure. That is, the scale has factorial validity meaning that all the items of the scale measure the same thing.

**Validity**

**Translation validity.** Content validity of both the Bangla version SWLS and LET were examined by the experts (for details see Method section). For examining the face validity of both the measures, each participant answered some questions about the readability, feasibility, clarity, comprehensiveness, ease of answering and style and formatting of the items of the scale. The questions were added at the end of each measure. Each participant answered the questions by a check mark (√) on either of the two options, ‘Yes and No’. For a question about style and formatting, the options were: ‘acceptable’ and ‘not acceptable’.

99.5% participants reported that the SWLS was readable, 89.5% reported that it was feasible, 91.9% reported that it was clear, 93.3% reported that it was comprehensive, 88.1% reported that it was easy to answer and 93.8% reported that the style and formatting of the scale was acceptable. On the other hand, 98.6% participants reported that the LET was readable, 89.5% reported that it was feasible, 93.3% reported that it was clear, 93.3% reported that it was comprehensive, 89% reported that it was easy to answer and 93.8% reported that the style and formatting of the test was acceptable. Thus, both the measures have good face validity.

**Convergent validity.** Convergent validity of the Bangla version SWLS and LET were examined by correlating them with each other. We hypothesized a positive correlation between them in order for these measures to have convergent validity. Results indicate that the scales were positively correlated with each other (r = .44, p<.01), demonstrating their convergent validity.

**Reliability**

**Internal consistency.** The inter-item correlation matrices of the SWLS (Table 1) and LET (Table 2) contained no negative values, indicating that the items of the respective scales were measuring the same characteristics. Estimates of internal consistency were examined for both the Bangla version SWLS and LET. The coefficients of Cronbach’s α were calculated. Cronbach’s α (standardized) for the full SWLS was .79 and Cronbach’s
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α (standardized) for the full LET was .77. Theoretically, it varies from 0 to 1. Ideally, it should be above 0.70 (DeVellis, 2003). Thus it was evident that the Bangla version SWLS and LET are reliable measures.

**Preliminary analysis**

Before collapsing data across gender, marital status, relationship status and SES, one MANOVA was conducted using these socio-demographic variables as independent variables and the major variables (i.e., life satisfaction and life engagement) as dependent variables. No significant multivariate effect was detected for gender (F (2,193) = .086, p=.917), marital status (F (2,193) = .199, p=.820), relationship status (F (2,193) = .364, p=.695) and SES (F (4,388) = .978, p=.420). On the basis of these findings, we decided to collapse the data across gender, marital status, relationship status and SES.

**Main analysis**

To examine the impact of life satisfaction on life engagement, data were analyzed in linear regression using life satisfaction as the predictor variable and life engagement as the criterion variable (Table 3). The regression model was significant and explained 19.3% of the variance in subject’s life engagement (R$^2$ = .193, F$_{1, 208}$=51.127, p=.001). Standardized β value indicates that life satisfaction was positively correlated with life engagement (β=.444, p=.001) and significantly predicted this criterion. Thus people who have higher life satisfaction would get themselves in more life engagement.

**Table 3: Regression of life engagement on life satisfaction**

Adjusted R$^2$ = .193 (F$_{1, 208}$=51.127, p=.001)

<table>
<thead>
<tr>
<th>Predictor variable</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>t</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>(constant)</td>
<td>17.785</td>
<td>.916</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Life satisfaction</td>
<td>.279</td>
<td>.039</td>
<td>.444</td>
<td>7.150</td>
</tr>
</tbody>
</table>

**Discussion**

The present study was designed to investigate the impact of life satisfaction on life engagement. Reviewing the relevant literature, it was hypothesized that people who have higher life satisfaction would have more life engagement. Before conducting the study, the SWLS and LET were translated into Bangla and adapted within the socio-cultural context of Bangladesh. When explored the psychometric properties of the Bangla version SWLS and the Bangla version LET, factor analysis extracted one factor model for both the SWLS and the LET. The one factor model of the LET is absolutely consistent with the original scale and the past study (Pearson et al., 2012; Scheier et al., 2006). Similarly, the one factor model of the SWLS fits with the model identified by most of the past
studies (Atienza, Balaguer & Merita, 2003; Clench-Aas, Nes, Dalgard & Aaro, 2011; Diener, Emmons, Larsen & Griffin, 1985; Gouveia, Milfont, da Fonseca, & Coelho, 2009; Pavot & Diener, 1993; Pavot, Diener, Colvin & Sandvik, 1991; Shevlin, Brunsden & Miles, 1997; Villarroel, Urzúa, Pavez, Celis-Atenas, & Silva, 2012). However, it is inconsistent with a few past studies which suggested a two-factor structure for the SWLS. For example, Gouveia et al. (2009) and Pavot & Diener (1993) identified two factors for the SWLS namely, “present” (i.e., items 1–3 measure the status at the moment) and “past” (i.e., items 4 and 5 measure the individual to reflect the status over the life sequence).

The one factor SWLS accounted for 55.55% of the total variance and one factor LET accounted for 46.80% of the total variance. Internal consistency (Cronbach’s α) of the Bangla SWLS was 0.79. This is consistent with the past studies which demonstrated that internal consistencies ranged from 0.79 to 0.92 (Arrindell et al., 1991; Clench-Aas et al., 2011; Diener et al., 1985; Gouveia et al., 2009; Pavot & Diener, 1993; Pavot et al., 1991; Shevlin et al., 1997; Villarroel et al., 2012). Thus the SWLS scale has sufficient reliability. On the other hand, internal consistency (Cronbach’s α) of the Bangla LET in the present study was 0.77. This is also consistent with the past study where the scale demonstrated sound internal consistency (Cronbach’s α 0.82 - 0.84; Pearson et al., 2012). The correlation coefficient indicates that the SWLS and LET were positively correlated with each other (r = .44, p<.01), demonstrating that they have convergent validity. This result is also consistent with the past studies where correlations of the SWLS with other conceptually related constructs (e.g., global life satisfaction) established convergent validity (Arrindell et al., 1991; Clench-Aas et al., 2011; Diener et al., 1985; Pavot et al., 1991; Pons, Atienza, Balaguer, & Garcia-Merita, 2000).

As per purpose of the study, association between life satisfaction and life engagement were investigated by using linear regression, taking life satisfaction as the independent variable and life engagement as the dependent variable. The result shows that life satisfaction was positively associated with life engagement and significantly predicted this variable (β=.444, p<.001). The standardized (β) coefficient for life satisfaction indicates that one unit increase in raw score of life satisfaction leads to .444 unit increase in raw score of life engagement. The value of Adjusted R² indicates that life satisfaction contributes 19.3% of the variance in life engagement.

This result supports the hypothesis of this study that people who have higher life satisfaction would have more life engagement. This might happen because life satisfaction is the way a person perceives how his or her life has been and how they feel about where it is going in the future. People who are satisfied with their life are able to make them engaged to identify the purposes of life. If their satisfaction level is hampered by any other variable, it will be difficult for them to engage in activities that will sustain their life and make their life purposeful. This cognitive fitness has a substantial positive influence upon an individual’s life engagement and the wellbeing (Fletcher, 2007). This
result is consistent with the past findings. For example, the positive association between life satisfaction and life engagement had been suggested in previous literatures (Bundick, 2009, Lazar, 2000, Williamson & Carolyn, 2011).

We selected university students as the participants of the present study. These groups are part of the young group and their age is characterized by psychological and developmental dynamics. It is the high time for them to make the ‘right’ or ‘good’ choices, to take decision about life’s valuable goals and engage in them. As because people’s quality of life tends to be a direct function of their evaluations of important life domains such as social support, leisure activities, and standard of living of overall life (Andrews & Withey, 1976; Diener, 1984), many things, such as, desire to change one’s life; satisfaction with past; satisfaction with future; and significant other’s views of one’s life, affect people’s cognitive judgment of satisfaction (Beutell, 2006). If their life satisfaction level becomes poor, they find difficulty to be engaged in life. On the other hand, the happier the people are, the less they are focused on the negatives. This finding is also consistent with other research findings (Seligman, 2002).

This study has some limitations. First, the study was conducted with a moderate number of participants (n=210). Second, the sample was chosen conveniently only from one University. It makes difficult to assure how much these findings can be generalized to the whole population of Bangladesh. Third, this study focused on the relationship between life satisfaction and life engagement without addressing the possibility that other variables might also influence both the variables. Finally, the questionnaires were self-reported. It was therefore possible that many participants might not give their accurate responses.

Conclusion
Despite the above limitations, the findings of the present study can serve as a base for further research. This finding can be used to design fruitful suggestions for the psychological outcome of life satisfaction and life engagement on subjective wellbeing. This study also equips us with psychometric tools, the Bangla version SWLS and the Bangla version LET. Research using these tools can help us to understand Bangladeshi people’s judgment about their life satisfaction and their purposes of life. All this together will help maintain good mental health among people, particularly among the student population of the country.

References


Life Satisfaction as a Determination of Life Engagement


The Effect of Emotion Focused Orientation at Retrieval on Emotional Memory for Younger and Older Adults  

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Abstract  
This study examined how emotion focused orientation at retrieval affects memory for emotional versus neutral images for younger and older adults. It was hypothesized that, 1) emotion focused retrieval will increase the number of emotional words in the responses of participants in both age group, and 2) emotion focused orientation will enhance positivity effect in younger adults but will not affect the older adults. A total of eighteen younger adults, age range from 19 to 25 years, and eighteen older adults, range from 43 to 78 years, were shown thirty images (10 positive, 10 negative and 10 neutral) and then were asked to recall them. At emotion focused orientation participants were instructed to focus on emotion related information (e.g. emotional content of the images and emotional reactions induced by those images). In two control conditions, participants were either asked to focus on visual content of the images or were just instructed to view the images without focusing on anything specific. The results confirm the first hypothesis; the number of emotional words is significantly greater in experimental condition ($F=34.01, p<.05$). But, neither positivity effect nor negativity effect was found ($F=1.60, p<.05$).

Introduction  
The concept of memory has long been an interesting question mark for many curious researchers on the field of cognitive psychology. People often describe memory as a continuous recording of experiences. Others say that memory is a process by which we can save information in the brain. In any case, memory represents the key psychological processes that allow us to re-experience our past events and to remember the behaviors we learned. In other words, memory holds our sense of self and our personal identity.

Memory is a very diverse, complex and mysterious component of our everyday life. For such immense diversity of phenomena psychologists, neurologists and neuropsychologists found tremendous scope of research on memory.

Earlier attempts to study memory ignored the effects of emotion on cognition by trying to ensure neutral emotional state of participants in memory experiment laboratory. But our everyday life observation provides lot of evidence that emotion surely adds weight to our special life events and enhances our memory for those events. People often think that
they can remember emotional life events in greater detail and with enhanced vividness (Conway, 1990). There are three popular ways in which emotional memories have been studied in the experimental laboratory: 1) eyewitness memory, 2) flashbulb memory and 3) memories for traumatic events.

In studies of emotional memory two different dimensions of emotions have been found to be important for memory enhancement. One of them is valence (how positive or negative the stimulus is) and the other is arousal (how exciting and calming the stimulus is). Although the relative contribution of these two dimensions was not clearly specified, Ochsner (2000) showed that emotional arousal is a critical mediator of the memory enhancement effect. However, the importance of valence is not negligible either.

The curious memory researchers then moved on to the divergent idea of adding age variable to the emotional memory studies. Age related emotional memory studies have enriched the field of cognitive psychology with lot of interesting findings. Generally, emotional well-being is not deteriorated with age, but a number of declines in cognitive abilities have been reported. For many reasons, memory performance for older adults would be poorer than that of younger adults. But, surprisingly, a growing body of literature suggest that, emotional memory is improved at old age (Carstensen & Charles, 1994; Charles, Mather, & Carstensen, 2003). Although Baumeister, Bratslavsky, Fickenuer, &Vohs (2001) found a general negativity effect (processing preference for negative over positive/neutral information) in younger adults, this effect was much reduced in older adults (Murphy & Isaacowitz, 2008). Rather, older adults showed preference for positive information over negative or neutral information (Mather & Carstensen, 2005). According to Socioemotional Selectivity Theory (SST), as people grow older, they become more aware of the limited time left in their life and intend to focus on maintaining a sense of positive well-being (Carstensen, 1995; Carstensen, Isaacowitz, & Charles, 1999), which leads to their age related positivity effect. A study by Mather, Carstesen and Charles (2003) supported this socioemotional selectivity theory.

The current research, in particular, placed greater emphasis on various types of orientations given to the participants. One group of participants, from both age groups, was instructed to focus on their felt emotion while watching emotional images at retrieval phase of the experiment. This is called emotion focused orientation. Yang and Ornstein (2011) showed that emotion focused retrieval orientation enhances positivity bias in younger adults but it does not affect older adults. More recently, emotion focused instruction (i.e. rating images for emotionality) was also given at encoding phase in memory experiment, that did not prove to be affective for older adults’ emotional memory but improved younger adults’ recall of neutral images (Emery & Hess, 2008). On the other hand, retrieval is both intentional and controlled on which this emotion focused instruction may work. To check these effects, in the present study, emotion focused orientation was given to the experimental condition, where participants were
instructed to focus on emotional content of the images and the participants’ emotional reaction to those images, and there were two other control conditions namely information focused orientation condition (control with manipulation), in which participants were instructed to focus on visual content of images rather than emotional aspects while attempting to recall them, and no instruction control condition (control without manipulation), in which participants were not orientated to focus on anything special at retrieval.

There are some inconsistencies among these age related emotional memory studies where emotion focused orientation was provided to the participants. Some studies showed that this emotion focused instruction enhances positivity bias in older adults and negativity bias in younger adults, while some others found that emotion focused orientation enhances younger adults’ preference for positive stimuli but does not affect older adults (Yang, et al., 2001). So, this study was designed to observe whether emotion focused orientation induces positivity bias in younger or in older adults. And also, what effect does this emotion focused orientation has on the response of both age groups in terms of the number of emotional words.

The objectives of the current study were 1) to examine whether emotion focused orientation condition at retrieval increased the number of emotional word in the response of younger and older participants, and 2) to compare whether emotion focused orientation at retrieval moderates the positivity effect in emotional memory of younger and older adults.

Based on earlier findings, it was hypothesized that emotion focused retrieval orientation will enhance memory performance for positive and negative stimuli over neutral ones, especially for positive stimuli, in younger adults but will not affect older adults.

First of all, this research is an attempt to have relatively clear understanding concerning the conflicts among earlier studies. And then to add some more findings to the age related emotional memory studies. The concept of orientating participants emotionally before retrieval is a new one. More research findings on this topic will enrich the theoretical field of cognitive psychology. There are possibilities that more research findings on various attempts of increasing memory capacities will help memory patients to deal with in different daily issues.

**Method**

**Participants**
Thirty six participants, in total, were used in this experiment. Among them, eighteen were younger adults (Mean age=22.83, SD=1.76) and eighteen were older adults (Mean age=55.66, SD=5.79). The participants were selected by using purposive sampling. There were equal number of males and females in each age group. The participants were physically fit, five of the older participants wear glasses. None of the participants complained about any kind of memory problems.
Apparatus
Thirty images were selected to conduct the present experiment. Among them 10 were positive (Mean valence=8.73) 10 were negative (Mean valence=1.49) and 10 were neutral (Mean valence=5.25). The mean valence of the images was obtained from the scores of the valence rating scale which was scored by each of the thirty six participants. The content of the images were sufficiently distinct from each other. All the pictures were presented to the participants in a random order of valence by using Microsoft Power Point Software 2007 in a HP Net book with a screen of 10 inches. The screen containing images was placed near about 12 inches apart straight from the eyes of the participants.

Experimental Design
In this present experiment two independent variables were involved. The first variable was orientation condition, that varied through three levels, emotion focused orientation condition, information focused control condition and no instruction control condition. The second variable of this experiment is age and it has two levels younger adults and older adults. Thus the study involved 3x2 factorial design. The conditions were: emotion focused orientation condition, information focused orientation condition and no-instruction control condition. Participants under these three conditions were provided with three different instructions.

Procedure
The experiment started with the task of viewing images (10 positive, 10 negative and 10 neutral), sequenced in random order of valence. The participants were simply instructed to “view a series of images carefully”. Each image was shown for 1 minute followed by a white blank screen for 1 second.

After they have seen all the images, they were asked to recall them under three different conditions. The conditions were counterbalanced among the participants. For Emotion focused orientation condition, the participant was instructed to focus on the emotional content of each image and the internal emotional state of the participant in reaction to each image when they tried to recall the pictures. In Information focused orientation condition, the participants were asked to focus on the precise visual content of each image, such as the number of people or objects or the color of the object etc, when they attempted to retrieve the pictures. In No instruction control condition, the participants were simply instructed to recall as much images as possible.

After providing clear instructions to the participants under three distinct conditions, they were given a piece of paper and a pen to write down, in as much detail as possible, the description of images they could remember under one of the three different orientation conditions within 10 minutes. The time limit was strictly measured by using stop watch.

Scoring
First of all, to check the effect of orientation condition, two judges separately counted number of emotional words in the response sheet of all the participants. The coding of two judges was highly consistent (r= 0.97).
The Effect of Emotion Focused Orientation at Retrieval on Emotional Memory for Younger...

Results

To analyze the effect of emotion focused orientation across the conditions for both age groups 2 (age) X 3 (condition) UNIANOVA was performed on the proportion of emotional words. The data are shown in Table 1.

Table-1: Results of 2X3 UNIANOVA for number of emotional words

<table>
<thead>
<tr>
<th>Effect</th>
<th>Sum of squares</th>
<th>Mean Squares</th>
<th>F</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>0.563</td>
<td>0.563</td>
<td>0.15</td>
<td>0.902</td>
</tr>
<tr>
<td>Condition</td>
<td>2497.181</td>
<td>1248.590</td>
<td>34.010*</td>
<td>0.000</td>
</tr>
<tr>
<td>Interaction</td>
<td>58.625</td>
<td>29.312</td>
<td>0.798</td>
<td>0.459</td>
</tr>
</tbody>
</table>

*P<.05

From the Table-1, it is seen that there was no significant age effect \([F(2, 34)=0.15, p>0.05]\), and interaction \([F(2, 34)=0.798, p>0.05]\). But there was significant condition effect \([F(2,34)=34.010, p<0.05]\).

To analyze the effect of valence on age, 2 (age) X 3 (valence) mixed factor ANOVA was performed on number of positive, negative and neutral images recalled by both age groups. To analyze the effect of valence across the conditions 3 (condition) X 3 (valence) mixed factor ANOVA was performed on number of positive, negative and neutral images recalled in three conditions. The data are shown in Table 2 and in Table 3.

Table-2: Results of 2X3 Mixed Factor ANOVA for number of positive, negative and neutral images recalled

<table>
<thead>
<tr>
<th>Effect</th>
<th>Sum of Squares</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>17.926</td>
<td>17.926</td>
<td>2.729</td>
<td>0.108</td>
</tr>
<tr>
<td>Valence</td>
<td>86.681</td>
<td>86.681</td>
<td>21.403*</td>
<td>0.000</td>
</tr>
<tr>
<td>Interaction</td>
<td>0.125</td>
<td>0.125</td>
<td>0.031</td>
<td>0.862</td>
</tr>
</tbody>
</table>

*P<.05

From Table-2, it is seen that there was no significant age effect \([F(1, 34)=2.729, p>0.05]\) and interaction effect \([F(1, 34)=0.031, p>0.05]\). But the effect of valence was significant \([F(1, 34)=21.403, p<0.05]\).

Table-3: Results of 3X3 Mixed Factor ANOVA for number of positive, negative and neutral images recalled across the conditions

<table>
<thead>
<tr>
<th>Effect</th>
<th>Sum of squares</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig. (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Condition</td>
<td>1.907</td>
<td>0.954</td>
<td>0.131</td>
<td>0.877</td>
</tr>
<tr>
<td>Valence</td>
<td>86.681</td>
<td>86.681</td>
<td>21.403*</td>
<td>0.000</td>
</tr>
<tr>
<td>Interaction</td>
<td>27.028</td>
<td>13.514</td>
<td>4.025*</td>
<td>0.027</td>
</tr>
</tbody>
</table>

*p<.05

From Table-3, it is seen that there was no significant condition effect \([F(1, 34)=0.131, p>0.05]\). But the effect of valence \([F(1, 34)=21.403, p<0.05]\) and interaction \([F(1, 34)=4.025, p<0.05]\) were significant.

Discussion

The current research points out two important findings: the emotion focused orientation increases the number of emotional words in recall responses of younger and older adults.
but does not induce positivity bias in any age group. It was hypothesized that, emotion focused instruction would increase emotional expression of participants in terms of emotional words. They were asked to focus on the emotional aspect of the images and their own emotional reactions to these images. For this reason, participants under emotion focused orientation condition used significantly more emotional words in order to express their emotion. Interestingly, participants under this condition used emotional words even for describing neutral images. In the other two conditions i.e., information focused orientation condition and no instruction control condition, participants used few emotional words. May be this is because; people remember emotional stimuli more vividly than neutral stimuli. The significant effect of emotion focused orientation was not confounded by gender effect. The other aspects, such as health condition and years of education were also, more or less, the same for both age groups.

The other hypothesis was not supported in this experiment. There was no positivity effect found in younger and older adults. There might be several reasons behind this result. First of all, the number of participants was not enough to prove such effects. This is, of course, a limitation of this experiment. Another important reason might be that, the age range of the older people used in this study was 48 to 70. This range signifies, more or less; middle aged people in other countries because of high mean life expectancy. The average life expectancy in America is 81 years for women and 76 years for men, according to life expectancy map, National Geographic Society, (2013). But, in our country, life expectancy for men is 68.48 years and for women is 72.31 years. In this study, ten among the eighteen older participants were service holders. So, they are far more prompt in cognitive tasks like this because they are still performing those in their workplaces. According to socio-emotional selectivity theory (Carstensen, Issacowitzs & Charles, 1999) when time is perceived as open ended, knowledge related goals are priority to people, but when time is perceived as limited, emotional goals assumes priority. Later on, Komp, Tilburg and Groenou (2012) found the evidence that retirements and declined health conditions made the old people aware of limited time left in life. But, maybe, in this research people did not find themselves closer to death, and many of the participants are still working in job or business sectors, thus, the socio-emotional selectivity theory did not prove to be applicable here. Moreover, the issue of positivity effect has long been controversial. According to Baumeister et al. (2001) younger adults prefer negative stimuli over positive and neutral ones, but for Yang et al. (2001), younger adults would prefer positive stimuli, if placed under emotion focused orientation condition. However, this research cannot find such effects in younger adults. Murphy and Issacowitz (2008) conducted a meta analysis using 1085 older adults and 3150 younger adults and found small to medium salience effect (preference for emotional stimuli than neutral ones), positivity effect (preference for positive stimuli over negative ones) and negativity effect (preference for negative stimuli over positive ones) in both age groups. There was a little age effect. This finding, is however, similar to that of the current one, where there was no age effect at all. Furthermore, aged people rely more on general rather than specific information (Koutstaal & Schacter, 1997). And in tasks where general theme is enough
for performing sufficiently, positivity effect for older adults are much reduced or even eliminated (Kensinger & Schacter, 2003). Maybe this research could not solve this conflict because of limited number of participants.

Finally, it is obvious that this study is not beyond limitations. First of all, more aged participants with the mean age of approximately 60 may produce different result. And again, using more participants can also depict different picture in the context. Moreover there is very few research in this area in Bangladesh, so there might be some implicit cultural factors which may interplay in this phenomenon. So the cultural factors behind positivity and negativity bias can be studied extensively. And finally, with advancement of technology, neurological correlates behind this positivity bias can also be an interesting topic of research in Bangladesh.

**References**


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Cognitive Abilities as Related to Academic Achievement of Undergraduate Students

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Abstract
The present study was designed to determine the relative and composite contributions of cognitive abilities (intelligence, memory, and academic motivation) on academic achievement of undergraduate students. One hundred students were selected purposively as respondents in the present study. In order to measure intelligence, auditory short-term memory, visual short-term memory, and academic motivation, the Bangla version of Otis Self Administering Test of Mental Ability, Digit Span Test and Academic Motivation Scale were administered on the respondents respectively. Their previous semester results were recorded as academic achievement. Five hypotheses were formulated to test: i) significant relationship will be found between auditory short-term memory and academic achievement; ii) significant relationship will be found between visual short-term memory and academic achievement; iii) significant relationship will be found between intelligence and academic achievement; iv) significant relationship will be found between academic motivation and academic achievement; v) memory, intelligence and academic motivation will be the significant predictors of academic achievement. The obtained data were analyzed by applying Pearson product method to determine the correlation coefficients among the dependent and independent variables. To consider the effects of cognitive factors on respondents’ academic achievement, a stepwise multiple regression analyses was also carried out. The results of correlation matrix indicate that there are significant positive relationships of academic achievement with intelligence, short-term memory (auditory, visual) and academic motivation. Results of stepwise multiple regression analyses suggest that intelligence, short-term memory and academic motivation are significant predictors where intelligence is the strongest predictor which alone explains 19.3% of variance as well as these three variables account for 31.8% of variance in academic achievement. Thus, the findings of the present study confirm our formulated hypotheses.

Introduction
Psychology is usually defined as the scientific study of behavior and cognitive processes. To study the human behavior and their cognitive processes elaborately there are many branches of psychology. Cognitive psychology is one of them which examine higher order mental processes (e.g., memory, perception, learning, thinking, intelligence etc). In this study the selected mental processes or cognitive abilities are intelligence, auditory short-term memory, visual short-term memory, and academic motivation respectively which have also been considered as the predictors of academic achievement. Intelligence is the capacity to understand the world, think rationally, and use resources effectively.
when faced with challenges (Feldman, 2012). Short-term memory, both auditory and visual, is the ability to keep information current in mind for a short period, while using this information for the task at hand. On the other hand, academic motivation is a student’s desire regarding academic subjects when the students’ competence is judged against a standard of performance or excellence (McClelland, 1961; Wigfield, & Eccles, 2002). The dependent variable of the present study is academic achievement of the undergraduate students which refers to what a student has acquired or achieved after the specific training instructing has been imparted. In the field of education, the instructors give specific training of a group of students during a specific time. After completing the classes they make some questions to measure their academic performance. If s/he achieves high score, s/he is evaluated as a good student. Research has established that cognitive abilities are related to academic achievement of the students (Ackerman & Heggestad, 1997). Thus, it can be assumed, based on their theoretical nature, that there is a possibility to obtain significant positive relationships among the variables of the present study. Accordingly, this study was designed to investigate the relationships of intelligence, auditory short-term memory, visual short-term memory, and academic motivation with academic achievement of the undergraduate students.

Literature furthermore indicates that intelligence is deemed as a stronger determinant and even positively correlated with several essential outcomes in life like education, occupational attainment and job performance (Gottfredson, 1986; O’Reilly & Chatman, 1994; Schmidt et al., 1992). A recent study by Rohde and Thompson (2007) that examines the relationship between IQ and GPA and SAT scores directly. To some extent, intelligence is the product of what we value and how we assess achievement. Intelligence cannot exist by itself without achievement. Intelligence is the foundation for achievement.

Short-term memory is moreover thought to play a role in maintaining and manipulating information during cognitive tasks (Baddeley, 2003). Previous work on short-term memory and academic proficiency is largely supportive of the notion that measures of short-term memory are better predictors of academic achievement than measures of intelligence. Andersson (2008), for example, found that measures of short-term memory predicted accuracy in children’s performances on mathematical word problems even after variation attributable to intelligence, reading ability and age differences were controlled. Similarly, Swanson and Beebe- Frankenberger (2004) found that short-term memory significantly predicted mathematical calculation and word problem solving accuracy. Swanson (2004) showed that short-term memory contributed about 5% of the unique variance in solution accuracy. In Bull and Scerif’s study (2001), working memory span accounted for 3% more variance in mathematics performance in 7-year-olds than did measures of intelligence and reading ability. Alloway (2009), for example, found that short-term memory provided unique and long term prediction of learning outcomes in reading and mathematics even though differences in intelligence, prior knowledge, and skills were statistically controlled. Samuels and Anderson (1973) found that children who were good readers performed significantly higher than poor readers on visual recognition
tasks. Additionally, the children with high visual recognition scores also tended to perform well on paired associates tasks.

In education, as in other realms of life, achievement motivation plays a crucial role in the performance of students. It is often correlated with actual achievement behavior. A number of studies have shown a moderate-to-strong relation between academic achievement and motivation (Butler & Kedar, 1990). Motivation has been reported in primary, secondary and college education to influence academic performance through study effort as a mediator (Vansteenkiste et al., 2005). Student motivation is a prerequisite of academic performance (Masitsa, 2008). Blank (1997); Dev (1997); Kushman et.al. (2000) and Woods (1995) also stated that high motivation and engagement in learning as consisted link to reduce dropout rates increase levels of student performance. Motivation has been shown to positively influence study strategy, academic performance, adjustment and well-being in students in domains of education other than medical education (Vansteenkiste et al., 2005). Evidence also suggested that student’s social motivation, and their relations with teachers and peers, strongly influence their academic performance and general adjustment to school (Elliot & Dweck, 1988). Furthermore, laboratory research has supported the causal influence of motivation on performance (Boggiano & Barrett, 1985; Elliot & Dweck, 1988; Licht & Deweck, 1984; Butler, 1987, 1988; Butler & Nisan, 1986).

**Rationale of the Study**

There are certain specific reasons for conducting this study: Firstly, it is a scientific curiosity to investigate the relationship between cognitive abilities and academic achievement of undergraduate students; secondly, a large number of studies have been conducted to examine the effect of cognitive abilities on students’ academic achievement but the results of some studies were inconclusive; and thirdly, all the studies, so far, were conducted in western cultures on different levels of students but in Bangladeshi culture it is rare. Considering the above reasons the present authors are intended to carry out this research. The finding of the present study may be helpful for the teachers, parents, researchers, and policy makers etc. to understand the nature of relationship between the cognitive factors and the students' academic achievement. Apart from this, it will add new knowledge to existing literature relevant to academic achievement of the undergraduate students.

**Objectives of the Study**

The present study was an attempt to analyze and explain the effect of cognitive abilities on students’ academic achievement with the following objectives:

- to investigate whether there is any relationship between auditory short-term memory and academic achievement.
- to investigate whether there is any relationship between visual short-term memory and academic achievement.
- to investigate whether there is any relationship between intelligence and academic achievement.
• to investigate whether there is any relationship between academic motivation and academic achievement.

Hypotheses
On the basis of the findings of previous studies, theoretical perspective and above discussion, the following hypotheses were formulated to test in this empirical study:

H₁: Significant relationship will be found between auditory short-term memory and academic achievement.

H₂: Significant relationship will be found between visual short-term memory and academic achievement.

H₃: Significant relationship will be found between academic motivation and academic achievement.

H₄: Significant relationship will be found between intelligence and academic achievement.

H₅: Memory, intelligence and academic motivation will be the significant predictors of academic achievement.

Method

Target Population
The target population of the present study was undergraduate students who studied at different universities in Dhaka city of Bangladesh.

Sample and Sampling Technique
The sample of the study consisted of 100 university level students of different programs in various universities, who were voluntarily participated in the study. The Participants were considered on the basis of convenience and purposive sampling technique. Undergraduate students of Jagannath University and Dhaka University were taken as the participants. All participants belonged to middle class as economic status. The participants’ age range was from 19 to 25 years. The following table shows the category of participants according to their sex and educational institution.

Table-1: Distribution of sample according to sex and education institution

<table>
<thead>
<tr>
<th>Name of institution</th>
<th>Number of participants</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jagannath University</td>
<td>50</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Dhaka University</td>
<td>50</td>
<td>25</td>
<td>25</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>50</td>
<td>50</td>
</tr>
</tbody>
</table>

Design of the study
A cross-sectional survey design was used in the present study. According to this design all data were collected at a single point in time.

Measuring Instrument
Four main instruments were used for data collection. They are:

1) Otis self administering test of mental ability
2) Digit span test
Cognitive Abilities as Related to Academic Achievement of Undergraduate Students

3) Academic motivation scale and
4) Academic achievement test (Teacher made test)

**Otis Self-Administering Test of Mental Ability:** This Intelligence test originally developed by Otis (1918) and adapted by Rahim and Muhammad (2014) labeled Otis Self Administering Test of Mental Ability. The test was developed to measure the level of intelligence of students. It comprises of 75–item questions. Some items are arithmetical, analytical, general knowledge and English related. Thirty minutes were given to answer all of the questions. The cumulative score would be added to give a composite score indicating the level of the student’s ability. To ascertain the reliability of the instrument, it was administered on 20 respondents who were undergraduate students. Analysis of the mental ability scale revealed internal consistency of 0.724 on Cronbach’s Alpha. This indicates that the Bangla version was reliable and valid.

**Digit Span Test:** The auditory and visual working memory capacity of undergraduate university students were determined by the Digit Span Test developed by Millar (1956). The administration of the digit span has been found to be simple and allowed for determination of the digit span as a correlate of working memory capacity. The digit span test has been validated for consistency and is applicable in subjects from different cultural backgrounds. The test-retest reliability of this measure has been found .79, which indicates that there are moderately high correlations among items in this scale. After completion of the task, scores for the digit span test were scored manually. Up to which span subject could recall the series correctly in all three lists that was assumed the Basal Value and then that was also calculated in a particular formula to find out the subjects auditory and visual working or short-term memory capacity.

**Academic Motivation Scale:** Academic motivation was measured using the Vallerand et al. Academic Motivation Scale. The scale is constructed as an objective measure of academic motivation through questionnaire technique. It was developed by Vallerand, Pelletier, Blais, Briere, Senecal, Vallieres (1992) and adapted by Rahim and Muhammad (2014). The scale consists of 28 items. Among 28 items four are negative and twentyfour are positive. The instrument has 5-point Likert-type scaling model ranging from Strongly Disagree (1) to Strongly Agree (5) but in negative items (5, 12, 19, 26) scoring process was reversed, that is, Strongly Disagree (5) to Strongly Agree (1). The higher the score indicates the higher motivation. The Cronbach’s Alpha was 0.875 for the Bangla version which revealed internal consistency.

**Academic Achievement Test:** Academic achievement of the respondents was measured by collecting CGPA on their recent last semester. Generally, at the university level student’s academic achievement is measured by applying teacher or instructor made questions at the end of the semester. According to University Grand Commission (UGC) grading policy highest CGPA is 4.00.

**Procedure**
For collecting data at the beginning one hundred undergraduate students were selected from two universities in Dhaka city by using purposive sampling technique. Before
applying the instruments each respondent was briefed about the purpose of the study and was requested to cooperate with the researcher. To collect the data a set of questionnaires consisting of all the three measuring instruments was administered to each of the respondent. The questionnaire also included some Personal Demographic Information (PDF) which was to be filled in by the respondents prior to the completion of the three instruments. They were also instructed to complete these tasks without wasting time. Among three instruments at first, Digit Span Test was applied to measure auditory and visual short-term memory. In this test three digit span lists were presented through auditory and visual process. Each digit span in three lists was read in sequence beginning from three to twelve digits. After presenting each digit span respondents were asked to recall that in sequential order after two seconds. After completing the auditory test visual test was taken in the same process. Secondly, to measure academic motivation Academic Motivation Questionnaire was provided and respondents were instructed to read the statements carefully and then to choose one options by giving tick mark (√) from five alternative (from strongly agree to strongly disagree), which is most applicable for that person. It was also stated that there is no right or wrong answers. The respondents filled-in the questionnaire in presence of the investigator. While filling up the questionnaires, some respondents asked about several items that were confusing to them. The participants were requested to reflect their actual feelings and thought about their motivation. Finally, to measure their intelligence Otis Self-Administering Test of Mental Ability was applied. In this questionnaire respondents were asked to answer 75 items within thirty minutes. Upon completion of the questionnaire, the respondents were thanked for cooperation. Data from 100 respondents were thus collected.

Results

In order to analyze the data zero order Pearson correlation and stepwise multiple regression analyses were applied on the obtained scores. According to the objectives the results of the study have been presented in three parts. For example, in the first part, mean and standard deviations of the five sets of scores were determined (table-2).

Table-2: Mean and Standard Deviation of the Scores of the Cognitive Abilities and Students Academic Achievement

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Auditory short-term memory</td>
<td>8.12</td>
<td>0.84</td>
</tr>
<tr>
<td>Visual short-term memory</td>
<td>8.03</td>
<td>0.91</td>
</tr>
<tr>
<td>Academic motivation</td>
<td>97.50</td>
<td>11.30</td>
</tr>
<tr>
<td>Intelligence</td>
<td>93.58</td>
<td>6.30</td>
</tr>
<tr>
<td>CGPA</td>
<td>3.22</td>
<td>0.41</td>
</tr>
</tbody>
</table>

As shown in the table-2, the mean scores of auditory short-term memory, visual short-term memory, academic motivation, and with academic achievement of university students were 8.12, 8.03, 97.50, 93.58 and 3.22 respectively.

Correlation matrix among the dependent and independent variables is shown in table-3. To consider, in second part, the effects of each independent variable on academic achievement, a stepwise regression analysis is performed (table 4, 5 and 6). Stepwise
multiple regression permits the study of the relationship between a set of independent variables and a dependent variable, while accounting for the interrelationships among the independent variables. Here, firstly, the direct effect of each independent variable on academic performance was estimated by the partial standardized regression coefficient with all independent variables in the equation (table-4). R$^2$ change was also calculated for determining the relative importance of each independent variable (table-5). The joint effects of significant predictor variables on academic performance were estimated by R square (table-5). The overall F-test was also performed for determining the joint influences of all independent variables to variation of academic performance (table-6).

**Table-3: Correlation Matrix among Auditory Short-term Memory, Visual Short-term Memory, Academic Motivation, IQ, and Academic Achievement**

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ASTM</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. VSTM</td>
<td>.604**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. AM</td>
<td>.222*</td>
<td>.278**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. IQ</td>
<td>.319**</td>
<td>.440**</td>
<td>.235*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. CGPA</td>
<td>.330**</td>
<td>.432**</td>
<td>.375**</td>
<td>.440*</td>
<td></td>
</tr>
</tbody>
</table>

Auditory Short-term Memory (ASTM), Visual Short-term Memory (VSTM), Academic Motivation (AM), Intelligence (IQ), Academic Achievement (CGPA).

**Correlation is significant at p<0.01 level (2-tailed) & * Correlation is significant at p<0.05 level (2-tailed)**

Simple correlations of each independent variable with dependent variable (such as auditory short-term memory, visual short-term memory, academic motivation, intelligence and academic performance) are presented in table-3. The results indicated that intelligence had the largest correlation \[ r (100)= .440, p <0.05 \] in case of students academic achievement (dependent variables), visual short-term memory the second largest correlation \[ r(100) = .432, p <0.01 \] in case of students academic performance (dependent variables), academic motivation the third largest correlation \[ r(100) = .375, p< 0.01 \] in case of students academic performance (dependent variables), auditory short-term memory the lowest correlation \[ r(100) = .330, p < 0.001 \] in case of students academic achievement (independent variables). On the other hand auditory short-term memory, visual short-term memory, academic motivation and intelligence were positively correlated to academic performance. Results of table 3 further indicated that there were strong inter-correlations among independent variables.

**Table-4:Stepwise Multiple Regression of Students Academic Achievement on Cognitive Abilities**

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Standardized Beta (β )</th>
<th>t</th>
<th>Sig. Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intelligence</td>
<td>.275</td>
<td>2.91</td>
<td>0.005</td>
</tr>
<tr>
<td>Academic Motivation</td>
<td>.243</td>
<td>2.74</td>
<td>0.007</td>
</tr>
<tr>
<td>Visual short-term Memory</td>
<td>.244</td>
<td>2.55</td>
<td>0.012</td>
</tr>
</tbody>
</table>

**Dependent variable: Academic Achievement**
The partial standardized betas (β s) indicated that only thee variables in the model were predictors of academic performance. These variables were IQ (β = .275, p<0.005), academic motivation (β = .243, p<0.007) and visual short-term memory (β=.244, p<0.012). Thus, intelligence was the strongest predictor.

**Table-5: Selected Statistics from Regression of Academic Achievement on Cognitive Abilities**

<table>
<thead>
<tr>
<th>Variables / predictors</th>
<th>R</th>
<th>R²</th>
<th>Adj R²</th>
<th>R² change</th>
<th>Sig. F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intelligence</td>
<td>.440</td>
<td>.193</td>
<td>.185</td>
<td>.193</td>
<td>0.001</td>
</tr>
<tr>
<td>IQ and AM</td>
<td>.521</td>
<td>.272</td>
<td>.257</td>
<td>.078</td>
<td>0.002</td>
</tr>
<tr>
<td>IQ, AM and VSTM</td>
<td>.564</td>
<td>.318</td>
<td>.296</td>
<td>.046</td>
<td>0.012</td>
</tr>
</tbody>
</table>

**Predictors:** Intelligence (IQ), Academic Motivation (AM), Visual short-term memory (VSTM).

**Dependent variable:** Academic Achievement

Results of regression analysis indicated that the strongest predictor of academic achievement was intelligence which alone explained 19.3% of variance. The results of the analysis further indicated that academic motivation was the second important predictor of academic achievement. R-square change indicated that 7.8% of variance in academic achievement was accounted for by the academic motivation and 4.6% of variance in academic achievement was accounted for by the visual short-term memory. R-square indicated that these three variables account for 31.8% of variance in academic achievement.

**Table-6:The overall F-test for Regression of Academic Performance on the Cognitive Abilities**

<table>
<thead>
<tr>
<th>Source of Variations</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig. F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>5.241</td>
<td>3</td>
<td>1.747</td>
<td></td>
<td>0.001</td>
</tr>
<tr>
<td>Residual</td>
<td>11.259</td>
<td>96</td>
<td>117</td>
<td>14.896</td>
<td>0.001</td>
</tr>
<tr>
<td>Total</td>
<td>16.500</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Predictors:** Intelligence, visual short-term memory, academic motivation.

**Dependent Variable:** Academic Achievement

The significant F-test \([F (3, 96) = 14.896, p<0.001]\) of table-6 indicated that variation in academic achievement was accounted for by joint linear influences of intelligence, visual short-term memory and academic motivation.

**Discussion**

The present study was designed to investigate the relationship between academic achievement and cognitive abilities (intelligence level, auditory short-term memory, visual short-term memory, academic motivation) of undergraduate students. In order to measure the variables of the present study three questionnaires were applied on one hundred undergraduate students selected from different universities in Dhaka city. The obtained data were analyzed by applying Pearson product method to determine the correlation coefficients among the dependent and independent variables which are
presented in table-3. To consider the effects of each independent variable on respondents’ academic achievement, a stepwise regression analysis was also carried out. Results of regression analyses were presented in table-4 through-6.

Five hypotheses were formulated to test in the present study. The first hypothesis stated that significant relationship will be found between academic achievement and auditory short-term memory. Result presented in table-3 indicates that there is a significant positive relationship of academic achievement with auditory short-term memory. These results are consistent with many investigators’ (Hainlen, 1995; Bull & Scerif, 2001) research findings. They found that auditory short-term memory is positively related to students’ academic achievement. In favor of the findings, it can be assumed that auditory short-term memory helps the students to perceive the materials presented by the course teachers in the class room. Auditory short-term memory is a significant cognitive factor in explaining the students’ academic achievement. The findings also suggest that this variable does not fit in the regression model of academic achievement. As reason, it can be mentioned that, other variables (intelligence, visual short-term memory, academic motivation) are more significant predictors than this variable although auditory short-term memory has important effect on students academic achievement.

The second hypothesis stated that significant relationship will be found between academic achievement and visual short-term memory. Result presented in table-3 indicates that there is a significant positive relationship of academic achievement with visual short-term memory. Standardized Beta (table-4) also indicates that academic achievement is positively related to visual short-term memory. The results of the analysis further indicated that visual short-term memory was the third important predictor of academic performance. R-square change indicated that 4.6% of variance in academic achievement. This result is supported by the findings of the previous studies of Samuels and Anderson (1973). They found that visual short-term memory predict academic achievement. In explaining this finding it can be said, that generally students’ visual capacity helps them to acquire knowledge in a given subject area. Therefore, it is clear that short-term memory has significant effect on students’ academic achievement.

The third hypothesis stated that significant relationship will be found between academic achievement and academic motivation. Result presented in table-3 indicates that there is a significant positive relationship between academic motivation and academic achievement. Standardized Beta (table-4) also indicates that academic achievement is positively related to academic motivation. The results of the analysis further indicated that academic motivation was the second important predictor of academic achievement. R-square change indicated that 7.8% of variance in academic achievement. This finding is consistent with Bank and Finlapson’s (1980) finding. They mentioned that successful students have significant higher motivation for achievement than unsuccessful students. Similarly, the finding is also supported by John (1996). He claimed that academic achievement is highly correlated with student’s motivation. According to Feldman (2012) highly motivated people like to do difficult tasks, compete, achieve more, and win at a game than less motivated people. People with low achievement motivation tend to be
motivated primarily by a desire to avoid failure. As high need for achievement generally produces positive outcome, so based on the finding it can be said that, highly motivated students have high academic achievement tendency.

The fourth hypothesis stated that significant relationship will be found between academic achievement and intelligence. Result presented in table-3 indicates that there is a significant positive relationship of academic achievement with intelligence. Standardized Beta (table-4) also indicates that academic achievement is positively related to intelligence. The results of the analysis further indicated that intelligence was the strongest predictor of academic achievement. R-squire change indicated that 19.3% of variance in academic achievement. This result is supported by the findings of Gottfredson (1986); O’Reilly and Chatman (1994); Schmidt et al., (1992). They claimed that intelligence is deemed as a strong determinant and even positively correlated with several essential outcomes in life like education, occupational attainment and academic achievement. Normally, it is known that highly intelligent people are most often outgoing, well adjusted, healthy, and popular than less intelligent people. So it can be said that students with higher intelligence have high academic achievement. On the other hand, those students who have less intelligence they will be less physically, academically and socially capable than highly intelligent students. Although intelligence is not a universal guarantee of success but it can be assumed that as it is a global capacity, it may contribute to every success.

The fifth hypothesis stated that memory, intelligence, and academic motivation will be significant predictors of academic achievement. Result presented in table (4-6) support this hypothesis. That is, visual short-term memory, intelligence, and academic motivation are the three predictors of academic achievement. It also suggests that these three variables have joint or individual effect on students’ academic achievement. This result is supported by the findings of the previous studies. Therefore, it can be mentioned that regardless of other factors of the students memory, intelligence, and academic motivation have significant role in achieving good grade in the field of education at the university level.

Limitations of the study. The present study has several limitations like the small sample drawn only form Dhaka city and lengthy questionnaires. For these limitations, drawing definite conclusion is not possible. Moreover, results calculated by applying correlation and regression analyses do not demonstrate the casual relation. They just show relationship between two or more variables. Nevertheless, the findings of the present study are very interesting and may contribute to develop insight into important determinants related to academic achievement.

References
Ackerman, P., & Heggestad, E. (1997). Intelligence, personality, and interests: evidence for overlapping traits. Psychological Bulletin, 12, 219–245.
Cognitive Abilities as Related to Academic Achievement of Undergraduate Students


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Relationship of Job Boredom and Job Involvement with Job Satisfaction of Female Nurses

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ABSTRACT
The aim of the present study was to investigate the “relationship of job boredom and job involvement with job satisfaction of female nurses”. A sample of 200 female nurses was purposively selected from Dhaka City. Bangla version of job boredom scale, Brayfield-Rothe job satisfaction scale, job involvement questionnaire were used for this investigation. Three hypotheses were formulated to test in the present study i) Job boredom would be negatively co-related to the job satisfaction, ii) Job involvement would be positively co-related to the job satisfaction iii) Job boredom, job involvement and job satisfaction are interrelated. In order to analyze the data Pearson product moment correlation was carried out on the obtained significant negative scores. Correlation analysis indicated significant negative correlation between job boredom and job involvement and job boredom and job satisfaction. The correlation between job involvement and job satisfaction was positive and significant. Regression analysis indicated that 37.7% of the variation in job satisfaction could be explained by both job boredom and job involvement simultaneously ($R^2= .377$, $p<.01$). These findings indicate that both job boredom and job involvement can influence job satisfaction in female nurses.

Introduction
Nursing is a profession within the health care sector focusing on the care of individuals, families, and communities so they may attain, maintain, or recover optimal health and quality of life. Nurses may be differentiated from other health care providers by their approach to patient care, training, and scope of practice. Many nurses provide care within the ordering scope of physicians, and this traditional role has come to shape the historic public image of nurses as care providers. However, nurses are permitted by most jurisdictions to practice independently in a variety of settings depending on training level. In the postwar period, nursing education has undergone a process of diversification towards advanced and specialized credentials, and many of the traditional regulations and provider roles are changing.
The American Nurses Association (ANA) states that nursing is the protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human response, and advocacy in the care of individuals, families, communities, and populations. It is not unknown that nurses are an integral part of the medical system and it is essential to find out various aspects of their professional life. Hence, the current researchers undertook the task to dig out the relationship of job boredom and job involvement with job satisfaction of female nurses.

Boredom is a distinct emotional state (Fisher, 1993; Farmer & Sundberg, 1986). It is an unpleasant, transient affective state in which the individual feels a pervasive lack of interest and difficulty in concentrating on the current activity [such that] it takes conscious effort to maintain or return attention to that activity (Fisher, 1993, p. 396). Contrary to popular wisdom, boredom is the result of having nothing to do that one likes (as defined by Shuta, 1993) rather than nothing to do at all. There are three types of boredom, all of which involve problems of engagement of attention. These include times when we are prevented from engaging in some wanted activity, when we are forced to engage in some unwanted activity, or when we are simply unable, for no apparent reason, to maintain engagement in any activity or spectacle (Cheyne, Carriere & Smilek, 2006).

Boredom has been associated with performance decrements in jobs with varied work demands such as physical repetition, perceptual discrimination, and sustained attention in laboratory and work settings (Mackworth, 1969; O’Hanlon, 1981; Thackray, Bailey, & Touchstone, 1977). Early evidence suggested that task repetition leads to feelings of boredom and fatigue and produces lowered and more variable work output (Wyatt, Langdon & Stock, 1937) in manufacturing jobs. Caplan, Cobb, Franch, Harrison, and Pinneau (1975) conducted a survey of workers across over twenty jobs and found a significant, positive correlation between self ratings of boredom and repetitive tasks that underutilized one’s ability. Subsequent laboratory and field research concluded that the detrimental effects of monotony in manufacturing setting is most prevalent in jobs requiring work cycles of an hour or more (e.g., Broadbent, 1979; Manenica & Corlett, 1977; Kishida, 1973). There are facts that show boredom at work has serious and really suffering consequences. People suffering from boredom at work have problem with their concentration, sleep and in the long run they experience more job events (Cox, 1980, Drory, 1982, O’Hanlon, 1981). Thus, it is well documented that job boredom is an important factor related to one’s job and hence, needs to be studied extensively.

Another important aspect that needs to be looked into in organizational researches is job involvement. Job involvement is defined as the degree to which a person psychologically identifies with. It is related with the work motivation that a person has with a job. It is also the internalization of values about the work or the importance of work according to the individual. Job involvement is also related with the detailed knowledge about the profession, working conditions, the wages, the characteristic of job, gender supremacy at work, the level of joblessness in the career and the major age group in the occupation (Athanasius, 2003; cited from Damirchi & Rahimi, 2011). It has also been found to
enhance the satisfaction, loyalty and motivation towards organization. So, employees’ involvement in job is very important for the growth and development of organizations. It is grouped into four categories: 1) work as a central life interest, 2) active participation in the job, 3) performance as a central to self–esteem, and 4) performance compatible with self-concept.

Job involvement is negatively associated with intention to quit and positively related to job satisfaction and organization climate perceptions (McElroy et al., 1995; McElroy et al., 1999). In the same way, Baud and Ryan put forward that (1997:437) job involvement is negatively related to absence. Withdrawal intentions and turn over as well as lateness and leaving work early and job involvement are related to work effort and performance. Individuals with high levels of job involvement are motivated to go to work and be punctual. Individuals with low levels of job involvement are likely to be the least motivated. So job involvement has been a major factor for research in organizational behavior.

Adams et al., (1996) found that job satisfaction significantly mediated the relationships with job involvement and life satisfaction. The higher one’s identification or involvement with a job, the greater is the job satisfaction (Schultz & Schultz, 1998).

Job satisfaction is probably the most studied variable in the organizational investigations. This is due to its importance in organizational behavior. Job satisfaction is a result of employee's perception of how well their job provides those things that are viewed as important. According to Mitchell and Lasan (1987), it is generally recognized in the organizational behavior field that job satisfaction is the most important and frequently studied attitude.

Attempting to understand the nature of job satisfaction is not easy. Job satisfaction is a complex and multifaceted concept, which can mean different things to different people. It is usually linked with motivation, but the nature of this relationship is not clear. Satisfaction is not the same as motivation. Job satisfaction is more of an attitude, an internal state. It could, for example, be associated with a personal feeling of achievement, either quantitative or qualitative.

Locke and Latham (1976) defined job satisfaction as pleasurable or positive emotional state resulting from the appraisal of one’s job or job experience. In general, it is known to be the general attitude of an employee towards different aspects of job. Locke (1976) also viewed job satisfaction as an attitudinal state resulting from the appraisal of one's job or job experiences. Job satisfaction has been a matter of growing interest for the individuals concerned with the quality of working life and organizational efficiency. It is a function of the perceived relationship between what one expects and obtains from one's job and how much importance or value one attributes to it (Mobley Locke, 1970, Locke, 1976). Researches show that a large number of personal, organizational, environmental, social, cultural and economic factors are related to job satisfaction (Herzberg, et. al.,1959; Porner, 1978; Waddle, 1983).
According to Nelson (2006) an employee’s satisfaction is priceless. Job satisfaction has been defined as “feelings or affective responses to facets of the (workplace) situation” (Smith, Kendall, & Hulin, 1969, p. 6). It refers to positive and negative feelings and attitudes we hold about our jobs (Schultz & Schultz, 2006). In simple terms, job satisfaction is the extent to which people like their jobs; job satisfaction is the extent to which they dislike them (Spector, 2006). There have been two approaches to the study of job satisfaction—the global approach and the facet approach. The global approach treats job satisfaction as a single, overall falling towards the job. The latter focuses on job facets or different aspects of the job, such as rewards (pay or fringe benefits), other people on the job (supervisors or co-workers), job conditions, and the nature of the work itself. It permits a more complete picture of job satisfaction.

Job satisfaction depends on many work-related factors, ranging from where we have to park to the sense of fulfillment we get from daily tasks. Job status (Hoppock, 1935; Morse, 1953), job security (Herzberg et al., 1975), nature of work (Walker & Guest, 1952; Khaleque & Rahman 1983; Khaleque & Wadud, 1984) are only some of the work-related factors. Personal factors can also influence job satisfaction. These factors include age, length of working hours, job experience and gender (Herzberg et al., 1975), health (Trier, 1954), emotional stability (Uhrbrock, 1934; Waytt & Langdon, 1937), social status, leisure activities, education (Morse, 1953; Khaleque & Rahman, 1983), family, and other social relationships.

Satisfaction in the workplace is important to study for multiple reasons: (a) increased satisfaction is suggested to be related to increased productivity, and (b) promoting employee satisfaction has inherent humanitarian value (Smith et al., 1969). In addition, job satisfaction is also related to other positive outcomes in the workplace, such as increased organizational citizenship behaviors (Organ & Ryan, 1995), increased life satisfaction (Judge, et al., 2000), decreased counterproductive work behaviors (Dalal, 2005), and decreased absenteeism (Hardy, Woods, & Wall, 2003). Each of these outcomes is desirable in organizations, and as such shows the value of studying and understanding job satisfaction.

The above literature very clearly shows that job boredom, job involvement, as well as job satisfaction are all essential parts of one’s job. Therefore, the current researchers undertook this study to highlight the importance of these factors in female nurses’ job.

**Rationale of the Study**

Nursing is a noble profession. It is more than just a profession because it is related to humanity. Female nurses and their job-related factors not only in the Bangladeshi context, but also worldwide has become a most vital issue. Cultural issues, family issues, legal issues, medical issues, parental issues are few of the barriers that any woman has to cross to be in the nursing profession. The researchers contend that this is most likely to be caused by women bearing the responsibility of humanity. Due to the chauvinism and backward perspective prevailing in the Bangladeshi society, women face problems in their personal and professional life. The factors in the workplace that influence the easy
completion of work have been described as ‘convenience’ factors. These are factors that allow employees to better fit in their jobs while their other life obligations are also fulfilled. The literature has revealed that convenience factors are important determinants of job boredom, job involvement and job satisfaction. This paper was an attempt to investigate job boredom, job involvement and job satisfaction of Bangladeshi female nurses. Attention has been given by researchers in Bangladesh to this particular area considering the ever changing facet of the society and the emergence of women as a dominant work force the present investigation posed the challenge. Therefore, the present research was undertaken to measure job boredom, job involvement and job satisfaction of female nurses working in the government and non-government hospitals.

The result of the study may be helpful for the concerned authority to gain knowledge on the working female nurses’ level of job boredom, job involvement and job satisfaction. This will further assist the authority to create a congenial environment for the female nurses to work more efficiently and increase their job satisfaction.

**Objectives of the present study**

The main objective of the present study was to investigate the relationship of job boredom, job involvement with job satisfaction of the female nurses in Dhaka city. The specific objectives were:

i) To investigate the relationship between job boredom and job satisfaction of the female nurses.

ii) To investigate the relationship between job involvement and job satisfaction of the female nurses.

iii) To investigate the relationship among job boredom, job involvement and job satisfaction of the female nurses.

**Hypotheses**

In the light of the above literature and the objectives, the following hypotheses were formulated:

a) Job boredom is negatively correlated to the job satisfaction.

b) Job involvement is positively correlated to the job satisfaction.

c) Job boredom, job involvement and job satisfaction are interrelated.

**Method**

**Sample:** 200 female nurses were selected purposively from 12 different hospitals (6 governments & 6 Private) situated in different parts of Dhaka city. Their age ranged from 20 to 53 years and their monthly salary ranged from Taka 8000 to Taka 25,000. It is mentionable that all respondents were matched in terms of educational qualification and socio-economic status. About 44% of the respondents were married while the remaining 56% were unmarried.
**Design:** A cross-sectional research method, based on the survey approach was utilized for the investigation.

**Measuring Instrument:** The investigation was conducted to find out the relationship between job boredom, job involvement and job satisfaction of female nurses. For data collection the following instruments were used: 1) Personal Information Form; 2) Job Boredom Questionnaire; 3) Job involvement Questionnaire; 4) Brayfield-Rothe Job Satisfaction Scale.

**Personal Information Form:** The first instrument being used for primary data collection was demographic information about the respondents. This PIF sought information about the respondents’ self and family history. These are respondents’ age, socio-economic and marital status, salary and qualification.

**Job Boredom Scale:** Bangla version (Himi & Zaman, 2013) of the Job Boredom Scale was used for the investigation. This instrument was originally developed by Lee in 1986. This self report measuring tool contains 17 items among which 16 are positive and 1 is negative. The true-false format of the JBS was converted into a 5-point Likert Type format (‘totally disagree’=1, ‘disagree’=2, ‘not sure’=3, ‘agree’=4, ‘totally agree’=5) to increase its sensitivity. Item no. 4 is a negative item and scored in reverse order. The sum of the scores of all items was the score for the individual. A high score indicates a high level of job boredom. In the original scale, a coefficient alpha of .95 was reported from the responses of 322 clerical employees. The split-half reliabilities and Cronbach’s alpha of the Bangla version of job boredom scale was found significant (r=.926, r=.913). Validation of the scale was assured by content validity and construct validity, where construct validity included Item analysis. Satisfactory level of validity was found for the Bangla version of Lee’s Job Boredom Scale. The validity co-efficient for the Bangla version of job boredom scale was found significant (r=.91).

**Job Involvement Questionnaire:** To measure employees’ level of job involvement in an organization an adapted Bangla version (Khaleque, 1995) of Job Involvement Scale (originally developed by Lodhal and Kejner in 1965) was used. This self report measuring tool containing 6 items had 5 positive and 1 negative items. All the items were rated on a five point “Likert type Scale” response format (strongly agree, agree, undecided, disagree, and strongly disagree). For positive items, score “1” indicates strongly disagree, score “2” indicate disagree, score “3” indicate undecided, score “4” indicate agree, score “5” indicate strongly agree. For negative item scoring was in inverse order. The sum of scores of all the items was the total score of the scale for an individual. High scores indicate high job involvement. The test-retest and split-half reliabilities of the Bengali version of job involvement scale (Muhammad & Huq, 2012) was found significant (r=.85, r=.81).

**Brayfield-Rothe Job Satisfaction Scale:** To measure the respondents’ job satisfaction level Bengali version (Khaleque, 1995) of “Brayfield-Rothe Job Satisfaction Scale”
was used. The measuring instrument is a “Likert type Scale” containing 18 items. The statements of the questionnaire are both in the positive and negative form. For each item the respondents expressed their feelings about the job in a five point scale (5 = ‘strongly agree’, 4 = ‘agree’, 3 = ‘uncertain’, 2=‘disagree’, and 1=‘strongly disagree’). Total score was calculated by adding all the numbers from each answer rating. Higher scores meant positive attitude of the sample and lower score meant negative. All the statements were rated in the above mentioned five point scale by the participants. The scale is considered to be quite sound in terms of its reliability and validity. Brayfield and Rothe (1951) reported split-half reliability co-efficient of .87 for a sample of 251 female clerical employees. Concerning validity, they reported a correlation of .93 between Brayfield-Rothe scale and Hoppock Blank (Hoppock, 1935; Khaleque, 1979) reported a correlation of .63 between Brayfield-Rothe scale and Job Description Index (JDI).

Procedure
A written permission prior to collecting data was requested and received from concerned authority of the respective hospitals. After the authority had granted permission to pursue this research, three standardized self-report questionnaires and one personal information form (which was attached to the first page) were administered on the respondents. Before the administration, necessary rapport was established with respondents. Cover letters, affixed to the questionnaire, explained the nature of the study, as well as assuring respondents of the confidentiality of any information provided. Respondents were also provided with detailed instructions as to how the questionnaires were to be completed and returned. Finally, respondents were encouraged to ask questions coming in their minds during the task and they were informed of their right to withdraw from the study at any time. The rationale behind providing clear instructions and assuring confidentiality of information is based on the fact that this significantly reduces the likelihood of obtaining biased responses (Sekaran, 2003). As most of the respondents were busy with their hospital duty they were allowed to complete the questionnaire at their leisure time. Respondents completed the Bengali version of the questionnaires in a relaxed setting. All the subjects were treated individually for each condition by the investigators. After the performance all the respondents were thanked by the investigators for their cooperation and participation in the study.

Data processing and analysis
Participants’ responses were calculated according to the scoring system of the job boredom scale, job involvement scale and job satisfaction scale separately. The present research was co-relational in its nature. SPSS 16.0 was used to analyze the data.

Results
For the purposes of testing the research hypotheses, a number of statistical techniques were employed. These included both descriptive and inferential statistical techniques. The obtained results are presented in Table-1 through-5.
Table-1: Mean and Standard Deviation of the scores of the job boredom, job involvement and job satisfaction

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Boredom</td>
<td>14.90</td>
<td>2.15</td>
</tr>
<tr>
<td>Job Involvement</td>
<td>51.13</td>
<td>8.13</td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>69.91</td>
<td>7.67</td>
</tr>
</tbody>
</table>

As shown in the table 1, the mean scores of job boredom, job involvement with job satisfaction of the female nurses in Dhaka city were 14.92, 51.13 and 69.91 respectively.

Table-2: Correlation Matrix for job boredom, job involvement and job satisfaction

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Boredom</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Involvement</td>
<td>-.446**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>-.401**</td>
<td>.346**</td>
<td></td>
</tr>
</tbody>
</table>

**Correlation is significant at p<0.01 level (2-tailed)

Table 2 indicates that the correlation co-efficient of job boredom with job involvement was (r= -0.446, p< 0.01) statistically significant. Correlation co-efficient of job boredom and job satisfaction was (r= -0.401, p< 0.01) negative and significant. The correlation co-efficient of job involvement and job satisfaction was (r=0.346) positive and statistically significant.

Table-3: Regression of job satisfaction on the job boredom, job involvement

<table>
<thead>
<tr>
<th></th>
<th>Standardized Beta</th>
<th>t</th>
<th>Sig. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Boredom</td>
<td>-.396</td>
<td>-6.626</td>
<td>.001</td>
</tr>
<tr>
<td>Job Involvement</td>
<td>.385</td>
<td>6.642</td>
<td>.003</td>
</tr>
</tbody>
</table>

Dependent variable: Job Satisfaction

Standardized betas revealed that the job boredom [β= -0.396, <.001] and job involvement [β= 0.385, <.003] were the significant predictors of job satisfaction (Table-3).
Table-4: Selected statistics from regression of job satisfaction on the job boredom and job involvement

<table>
<thead>
<tr>
<th>Variables</th>
<th>R</th>
<th>R Square</th>
<th>R² change</th>
<th>Sig. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Job Boredom</td>
<td>.487</td>
<td>.237</td>
<td>.237</td>
<td>001</td>
</tr>
<tr>
<td>Job Boredom and Job involvement</td>
<td>.614</td>
<td>.377</td>
<td>.140</td>
<td>001</td>
</tr>
</tbody>
</table>

Results of regression analysis indicated that the strongest predictor of job satisfaction was job boredom which alone explained 23.7% variance. R-square change indicated that 37.7% variance of job satisfaction was accounted for by the job boredom and job involvement (Table 4).

Table-5: The overall F-test for regression of job satisfaction on job boredom and job involvement

<table>
<thead>
<tr>
<th>SV</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>Sig. level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>5539.763</td>
<td>2</td>
<td>2769.881</td>
<td>59.341</td>
<td>.001</td>
</tr>
<tr>
<td>Residual</td>
<td>9148.790</td>
<td>196</td>
<td>46.677</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>14688.553</td>
<td>198</td>
<td></td>
<td>59.341</td>
<td>.001</td>
</tr>
</tbody>
</table>

Predictors: Job Boredom and Job involvement

Dependent Variable: Job Satisfaction

The significant F-test reported in table-5 [F (2.196) = 59.341, p<0.001] indicates that variation in job satisfaction was accounted for by joint linear influences of job boredom and job involvement

A major finding of this study is a significant negative correlation between job boredom

Discussion

The purpose of the present study was to explore the “Relationship of Job Boredom and Job Involvement with Job Satisfaction of Female Nurses”. In order to analyze the data of the present study correlation co-efficient was applied on the scores of job boredom, job involvement and job satisfaction of the respondents. The results of this study offer an understanding of the intricacies of such a relationship.

A major finding of this study is a significant negative correlation between job boredom and job satisfaction (r = -0.446). Beta (table 3) also indicates that job boredom is positively correlated with job satisfaction. The findings revealed that job boredom is the best predictor of job satisfaction which explains 23.7% variance in job satisfaction. Many researchers e.g. Luthans (1998) and Wright & Norman (1999) also found similar results in their studies.

Results also indicate that there is no significant correlation between Job involvement and job satisfaction (r = 0.346). Standardized beta (table 3) indicates that job involvement is positively correlated with job satisfaction. The findings revealed that job involvement is a predictor of job satisfaction. It explains 14.0% variance in job satisfaction. These results are supported by the findings of many researchers e.g. McElroy et al., 1995: McElroy et al., 1999, & Schultz & Schultz, 1998.
Further, the standardized betas showed in Table 3 that both job boredom ($\beta = -0.396, <.001$) and job involvement ($\beta = 0.385, <.003$) were the predictors of job satisfaction. Furthermore, $R^2$ of the Table 4 showed that job boredom and job involvement jointly explained 37.7% variance of job satisfaction. However, it can be said that job boredom and job involvement are important predictors of job satisfaction. The findings also reveal that job boredom, job involvement and job satisfaction are interrelated. So, it can be said, that employees who are not bored with their work and are more involved at the workplace are likely to be more satisfied.

It is very important for any organization to know their employees’ job boredom, job involvement and job satisfaction towards their respective job. This would help the organization to make the working environment better for the workers and thereby develop their organization. Though the study of job satisfaction has been popular among organizational psychologists, nurses’ job satisfaction has been ignored. Nurses devote a round the clock service to public order, peace and physical and mental security. They work relentlessly to secure life and property of the people. So, it is necessary to fulfill their needs and take care of their convenience.

Limitations
The biggest obstacle felt by the researchers was nurses’ fear of submitting to any survey where they have to express their feelings regarding their working organizations. Along with unwillingness to participate in the survey, the above issue could also lead to responses that do not directly relate how they truly felt about their job. Again because they could perceive retaliation for any answer that may cast their superiors in a negative light, some nurses could have given answers that are false, thus skewing the results. Moreover, the sample size was not representative of the population as the method of sample selection did not follow rigorous technique. It is, therefore, suggested that in future research these limitations be overcome so that the findings become more acceptable.

References


Relationship of Job Boredom and Job Involvement with Job Satisfaction of Female Nurses


Stress and Hope among the Patients with Cancer

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Mst. Ismat Jerin
Department of Clinical Psychology
University of Dhaka

Abstract
The study aimed to explore and assess the level of distress and hope among the cancer patients of Bangladesh. This purpose was served by purposively collecting data from 51 patients of different stages and types of cancer from the National Institute of Cancer Research and Hospital. Two cancer specific tools such as Bangla version of Herth hope Index and a Questionnaire on stress in cancer patient (QSCR 23) were administered to assess distress and hope level of cancer patients. Findings revealed that 92.2% patients were diagnosed as stressed as their scores were above the cutoff point. In terms of sex and age no difference was found in perceived stress. Patients who were diagnosed for less than three months were more stressed than those who were diagnosed for more than three month. Though being distressed, approximately 67.2% cancer patients reported that they had a high level of hope about their life, their directionality and spirituality. Patients from all age ranges, sex and length of diagnosis showed a higher score on perceived hope. The findings of the present study would have an implication as a baseline data to influence the policy makers. Another significant implication is to increase professional as well as humanitarian awareness which will ultimately bring benefit to the cancer survivors.

Introduction
Cancer is recognized to be a difficult disease affecting patients and their families both emotionally and physically. Cancer is the sixth leading cause of death in Bangladesh (BBS, 2008). International Agency for Research on Cancer (IARC) has projected that death from cancer in Bangladesh is 7.5 % in 2005 and it would be increased up to 13 % in 2030 (National Institute of Cancer Research & Hospital, 2008). Despite biomedical progress, cancer is still considered synonymous with death, pain and suffering. Apart from the physical impairment, psychosocial distress is a major burden for around one third of oncology patient. There is also evidence that a high distress level correlates with a number of negative outcomes like decreased medical adherence, greater desire for death, increased morbidity and length of hospital stays (Steel, Geller and Gamblin, 2007).

The overall burden of cancer diagnosis and treatment often is referred to as distress. Psychological distress is interpreted and assessed as psychiatric morbidity or prevalence of psychiatric disorders, especially anxiety disorders and depression. Humans experience
stress, or perceive things as threatening, when they do not believe that their resources for coping with obstacles (stimuli, people, situations, etc.) are enough for what the circumstances demand.

Initial distress decreases when treatment is successful. However, an estimated 255 to 405 of cancer survivors continue to suffer from distress at a level that requires professional treatment additional to the care from the primary oncology team (Carlson, 2003; Madden, 2006). Gender and illness duration is an important factor in perceiving the stress among cancer patients (Herschbach et al., 2004).

A study conducted in Bangladesh also revealed that patients from all age ranges needed relief from pain, anxiety, sleeplessness and constipation along with other symptoms (Ahmad, Kamal, Anwar and Rahman, 2006). This study indicates that there is a hope about life, recovery and well being among cancer patients.

Dufault and Martocchio (1985, p. 380) conceptualized hope as “a multidimensional dynamic life force characterized by a confident yet uncertain expectation of achieving a future good which, to the hoping person, is realistically possible and personally significant.”

A study by Herth (1989) correlated levels of hope with levels of coping in cancer patients (n = 120) who were receiving chemotherapy. Instruments used were the Herth Hope Scale (HHS), the Jalowiec Coping Scale (JCS), and a demographic data from which included three items asking about job and family responsibilities and religious beliefs. Significant findings from the study were that a loss of ability to fulfill family responsibilities but not job responsibilities could influence hope or coping.

It is evident from literature review that cancer causes distress and hopelessness. Unfortunately there are no findings about the impact of cancer on mental health from the perspective of Bangladesh. It indicates a significant gap and research is a key factor in promoting health, combating disease, reducing disability and improving quality of care. As identified by the WHO (2002), cancer research is wide-ranging, extending over a number of key areas including Clinical psychosocial and behavioral research. The objective of current study is to explore and assess the level of psychological distress and hope in cancer patients.

Method

Participants
A total of 51 diagnosed inpatients of cancer between the ages of 18 to 76 participated in the study as sample. Purposive sampling technique was used to select the sample from the National Institute of Cancer Research & Hospital. Diagnosed cancer inpatients below the age of 18 years and who were taking any kind of psychological interventions were excluded from the study. Demographic characteristics of the sample is shown in table-1.
Stress and Hope among the Patients with Cancer

Table-1: Demographic characteristics of sample

<table>
<thead>
<tr>
<th>Demographic variable</th>
<th>Categories of variable (number of sample in each category)</th>
<th>sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>18 to 40 years (24)</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>40 to 60 years (25)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>More than 60 years (02)</td>
<td></td>
</tr>
<tr>
<td>Sex</td>
<td>Male (26)</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Female (25)</td>
<td></td>
</tr>
<tr>
<td>Marital status</td>
<td>Unmarried (04)</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Married (44)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Widow (02)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Separate (01)</td>
<td></td>
</tr>
<tr>
<td>No. of children</td>
<td>0-4 (45)</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>5-10 (06)</td>
<td></td>
</tr>
<tr>
<td>No. of dependent person</td>
<td>0-4 (35)</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>5-10 (16)</td>
<td></td>
</tr>
<tr>
<td>Employment status</td>
<td>Employed (26)</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Unemployed (25)</td>
<td></td>
</tr>
<tr>
<td>Stages of cancer</td>
<td>Curative (48)</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Palliative (03)</td>
<td></td>
</tr>
<tr>
<td>Length of diagnosis (Month)</td>
<td>Less than 3 M. (16)</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>3-6 M. (09)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>6-12 M. (07)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>12-18 M. (08)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>More than 18 M. (11)</td>
<td></td>
</tr>
<tr>
<td>Length of admission (week)</td>
<td>1 week (21)</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>2 week (17)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 week (06)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 week (05)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>More than 4 week (02)</td>
<td></td>
</tr>
<tr>
<td>Type of treatment</td>
<td>Surgery (25)</td>
<td>51</td>
</tr>
<tr>
<td></td>
<td>Radiation (09)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chemotherapy (17)</td>
<td></td>
</tr>
</tbody>
</table>

Instruments

Socio demographic information sheet
The demographic data form served as a guideline for the collection of information about each subject. Socio demographic variables contained information on respondents’ age, sex, marital status, employment status, stages of cancer, length of diagnosis (month) and the length of admission (week) etc.

Bangla version of Questionnaire on Stress in Cancer Patients (QSC-R23)
The original scale was developed by Herschbach, Marten-Mittag and Henrich (2003) to assess psychosocial stress in cancer patients (all diagnoses and treatment settings). The
scale was translated and adapted into Bangla Language by Jerin, Khatun and Ahmed (2013).

It contains 23 items; the range of the response categories varies between 0 (=the problem does not apply to me) and 5 (=the problem applies to me and is a very big problem). The items in the QSCR are in a Likert-format scale from 0 to 5 and the total score of QSCR ranges from 0 to 115. Total score of the QSCR for any individual was obtained from sum total of scores on 23 statements. Cutoff point >1.5 of QSC-R23 total score is the minimal score of a scale to screen and diagnose the patients who are suffering from stress. The higher score indicates the higher perceived problem. Internal consistency of Bangla QSC-R-23 was found 0.967 through Cronbach Alpha. Test retest reliability of the adapted version was found 0.832. Content validity was guaranteed by the research team and convergent validity was confirmed by the high correlation with hospital anxiety and depression scale (r=0.856,α=0.01).

**Bangla Version of Herth Hope index**

Dr. Kaye Herth developed and evaluated an abbreviated instrument to measure hope at 1992, Bangla version of Herth Hope Index was adapted into bangale language by Ahmed. Khatun and Jerin (see Appendix). The HHI is shortened from the HHS to a 12-item instrument for clinical and research applicability focus on adults. The items in the HHI are in a Likert-format scale from 1 to 4, with 1 being strongly disagree and 4 being strongly agree. Total score of the HHI for any individual was obtained from sum total of scores on 12 statements. The total scores of the HHI could range from 12 to 48, with higher score equating to a higher level of hope. The test–retest reliability of Bangla Herth Hope Index is 0.615 and split half reliability is 0.636 which was analyzed via Cronbach’s alpha.

**Procedure**

In order to serve the purpose of the study data collection procedures followed were the ground works where cancer specific tools were selected and adapted into Bangla Language and then made a liason after taking consent from the authority (National Institute of Cancer Research & Hospital). Then feasible and suitable schedule was prepared and after that the patients were purposively selected from the setting. The patients were provided the written informed consent form as well as verbal information and clarification about the study and its purpose. The researcher gave assurance to the participants that confidentiality will be maintained. Then sociodemographic data form was filled in by the patients or interviewer. After that, the questionnaires were administered individually to each participant with an individual instruction for self administration of questionnaires. If any participant expressed inability to fill up the questionnaires due to health status or illiteracy the researcher filled up the questionnaire through the interviewing method. Finally, after the completion of the questionnaire the researcher expressed her gratitude and gave thanks to the participants for their valuable cooperation in the study. Collected data was analyzed using specific statistical tools such as Statistical Package for the Social Sciences (SPSS version 17).
Results

The data of the present study were analyzed by frequency and crosstabs according to the objective of the research.

Stress level of the patients was measured by a cancer specific questionnaire and the data were assembled in the tabular form by showing the percentage of patients above the cutoff point and below the cutoff point in table 2. It can be seen from the table 2 that most of the patients (47) are above the cutoff point of stress, which indicated that most of the cancer patients are suffering from high level of distress.

Table-2: Level of stress below the cutoff point and above the cutoff point on percentage

<table>
<thead>
<tr>
<th>Status</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Below cutoff point</td>
<td>04</td>
<td>7.8%</td>
</tr>
<tr>
<td>Above cut off point</td>
<td>47</td>
<td>92.2%</td>
</tr>
</tbody>
</table>

Note: The percentage and frequency of the Stress among cancer patients below and above the cutoff point. The cutoff point is the minimal score of a scale to screen and diagnose the patients who are suffering from stress.

There is no difference between male and female patients in perceiving distress. Patients between the ages of 40 to 60 years are much more stressed than patients from other age ranges. Patients who were diagnosed for less than 03 months are much more stressed and the number of the patients who fall in this region are 16 which are also observable from figure-1.

Figure-1: Bar diagram of felt stress in cancer patients according to the length of diagnosis

Table-3: Level of hope among the cancer patients in terms of percentage

<table>
<thead>
<tr>
<th>Level of Hope</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low level of hope</td>
<td>00</td>
<td>00%</td>
</tr>
<tr>
<td>Moderate level of hope</td>
<td>19</td>
<td>37.3%</td>
</tr>
<tr>
<td>High level of hope</td>
<td>32</td>
<td>62.7%</td>
</tr>
</tbody>
</table>

Note: The percentage and frequency of the hope among cancer patients at three level of hope; low level of hope indicates the score which falls between 1-16 and moderate level of hope indicates those score which ranges from 17 to 32. The scores above 32 implies high level of hope among the adult cancer patient.
To measure the level of hope of among cancer patient’s data were categorized into three levels where a high score indicated a higher level of hope and the result is depicted in table 3. Most of the patients showed hopefulness about their life, spirituality and directionality.

![Figure-2: Bar diagram of Herth Hope Index according to length of admission](image)

Though most of the cancer patients were suffering from higher level of distress, the level of hope among the cancer patients were relatively high, 32 (16 from early adulthood, 14 from late adulthood and 2 from later age) patients among the total sample of 51 posses a high level of hope. It is also a positive factor that there were no single patients who belonged to the very poor level of hope which is up to the score of 16. There was no gender difference in perceiving hope. When looking at figure 2, it becomes obvious that patients who had been diagnosed for less than three months were more hopeful than other patients.

**Discussion**

The present study investigated the distress level and hope of cancer patients. Participants were from the National Institute of Cancer Research and Hospital (NICR). The findings of this study indicate that not only anxiety or depression was common in cancer patients, they were suffering from stress also. It was found that 92.2% patient were above the cut off point which indicates that they were suffering from stress and the result is similar to the findings of Herschbach, Keller, Knight, Brandl, Huber, Henrich, and Marten-Mittag (2004) research. But there were some dissimilarity also, in their research they concluded that gender and illness duration were important factors in perceiving the stress among cancer patients. But data of the present study implies that there was no gender difference in the perception of stress among cancer patients.

Though cancer patient were suffering from stress they were more hopeful about their life which indicates that they hadn’t abandoned their hope of life which ultimately strengthen them to live a healthy life and thus promote the healing from the chronic disease ‘cancer’.

The implication of the present study involve numerous facts such as data obtained from this study can be used as a baseline data for establishing the necessity of psychological
intervention as well as for further exploration of assessing mental health problems. Moreover, the findings from the present study would be influential at the designing of service where other professionals in the treatment regimens of cancer patients will focus on the psychological aspects of cancer patients. This study was conducted to highlight the need for psychological intervention of cancer patients as well as increasing professional as well as humanitarian awareness which will ultimately bring benefit to the cancer survivors. The findings of the study have strengthened such need.

However the present study has some limitation such as small sample size and inadequate statistical analysis. Hence more intensive research involving large sample size is necessary for better understanding of the mental health problems of patients suffering from cancer.

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Mosammat Nazma Khatun, Afroja Ahmed and Mst. Ismat Jerin

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Academic Motivational Factors and Academic Achievement of Secondary School Students

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Abstract

The present study was designed to investigate the relationship between academic motivational factors and academic achievement and also to find out the differences between high and low achievers, gender differences, and differences between science and humanities students. To conduct the study, 100 students from class IX and class X were selected purposively. The translated Bangla version (Khanam & Ahmed, 2014) of the ‘Motivated Strategies for Learning Questionnaire’ (Pintrich, Smith, Garcia, & McKeachie, 1991) was administered to collect data. Students’ academic achievement was measured by their last academic results. Findings revealed that academic achievement was significantly correlated with intrinsic goal orientation, and academic self-efficacy. High achievers differed from low achievers in having more intrinsic goal orientation, and had more self-efficacy. In control of learning beliefs, significant gender difference was observed. Science group students significantly differed from humanities’ students in intrinsic goal orientation and academic self-efficacy.

Introduction

A properly educated nation can put a country at the zenith of its development. It is the backbone of a nation. In Bangladesh, there are 3 main layers of education – primary, secondary, and tertiary level. Age range for Bangladeshi students at secondary level is 11 to 16+. During this stage, rapid physical and psychological changes occur in the life of students. They feel extra pressure to adjust with these changes. These changes also have effect on their academic achievement. Academic achievement is the chief indicator in evaluating education. It is the degree of academic learning of a student.

A strong predictor of students’ academic achievement is the motivation toward learning (Yoon, Eccles, & Wigfield, 1996; Pintrich, 1999). Motivation directs and energizes the behavior of humans and other organisms (Feldman, 2008). Some of the academic motivational factors are goal orientation, subjective task value, control of learning belief and academic self-efficacy.

A prominent feature in motivation theory is the role of goals. Goals are defined as the end toward which effort is directed. Academic goal orientation is the student’s perception of reasons why he is engaging in a learning task. Goal orientations are two types—a) intrinsic goal orientation, and b) extrinsic goal orientation. Students with an intrinsic goal orientation tend to value a deeper level of understanding of tasks than those with an
extrinsic goal orientation, and that conversely, those with an extrinsic goal orientation tend to use more surface-level processing strategies such as memorization or guessing. Intrinsic goal orientation is a strong predictor of academic achievement (Was, 2006; Touminen-Soini, Salmela-Aro, & Niemivirta, 2008; Chyung, Moll, & Berg, 2010; Bulus, 2011). Task value refers to the student’s evaluation of the how interesting, how important, and how useful the task is (Pintrich, Smith, Garcia, & McKeachie, 1991). Task value is significantly positively correlated with academic achievement (Metallidou & Vlachou, 2010; Stegers-Jager, Cohen-Schotanus, & Themmen, 2012; Al-Harthy & Aldhafri, 2014). Control of learning belief is individual’s exercising influence over one’s own motivation, cognition, affect, and behaviors. Kavita (2014) found significant difference between high achievers and average achievers, high achievers and low achievers, average achievers and low achievers. Self-efficacy is a self-appraisal of one’s ability to master a task. It includes judgments about one’s ability to accomplish a task as well as one’s confidence in one’s skills to perform that task (Pintrich et al., 1991). Previous studies reported mixed results about the relationship between self-efficacy and academic achievement. Some found positive correlation between these two (Wolters & Pintrich, 1998; Klassen, Krawchuk, & Rajani, 2008; Ahangi & Sharaf, 2013), where some found negative correlation (Chyung et al., 2010; Loo & Choy, 2013).

In view of the importance of the relationship between motivation and achievement the present study was undertaken to investigate whether there is any relationship between academic motivational factors which included intrinsic goal orientation, extrinsic goal orientation, subjective task value, control of learning beliefs, and academic self-efficacy, and academic achievement. Motivational factors have a strong relationship with learning strategies, but there dearth of research on this topic in Bangladesh. The present study would provide information about the secondary school students’ academic motivational beliefs. This study also would provide information about students’ tendency to use learning strategies, their strength and weakness in academic learning. Such information would help relevant authorities to design curriculum for students. The present study’s findings would also be helpful to the teachers and guardians for taking psychological intervention to students for better advancement. Finally, this study would be helpful to increase the quality of education. So the main objective of the study was to see the relationship between academic motivational factors and academic achievement of secondary school students. There were also three other objectives. These were– i) to compare the differences between high achiever and low achiever students, ii) to compare the level of gender differences and iii) to compare the differences between science and humanities students.

Method

Participants
The study sample comprised of 92 students from 4 schools of Netrakona District which were selected purposively. From each school total 23 students were selected purposively from class IX and class X. Of the respondents, 47.8% were from class IX and 52.2% from class X, and 22.8% from science group, 6.5% from commerce group, and 70.7% from humanities group. Among the respondents, 52.2% were female and 47.8% male.
Amount of study hour (per day) ranged from 2 to 8 hours. High achievers and low achievers were categorized according to their results. Those who obtained G.P.A. 1 to G.P.A. 3 were considered as low achievers and those who were obtained G.P.A. 3.01 to G.P.A. 5 were as high achievers.

**Instrument used**
To collect necessary data for the present study, the translated Bangla version (Khanam & Ahmed, 2014) of the ‘Motivated Strategies for Learning Questionnaire’ (MSLQ) scale, originally developed by Pintrich et al. (1991), was used. The scale comprised of 15 subscales and total 81 items. Among these subscales, 5 subscales [intrinsic goal orientation (item no.- 1,16,22,24), extrinsic goal orientation (item no.- 7,11,13,30), task value (item no.- 4,10,17,23,26,27), control of learning beliefs (item no.-2,9,18,25), self efficacy for learning and performance (item no.-5,6,12,15,20,21,29,31)] were used in the present study. Score range for intrinsic goal orientation was 4 – 28, for extrinsic goal orientation was 4 – 28, for task value was 6 – 42, for control of learning beliefs was 4 – 28, and for self-efficacy was 8 – 56. Higher scores indicate higher motivation in corresponding motivational factors and lower scores indicate lower motivation in corresponding motivational factors.

The Cronbach Alpha reliability ranged from .52 (for help seeking) to .93 (for self efficacy for learning and performance). Correlation coefficients between original form of MSLQ and Bangla translation of the MSLQ ranged from .95 (for extrinsic goal orientation subscale) to .79 (for time and study management subscale). Developers of the scale confirmed the factorial validity. All subscales of the scale were significantly correlated with final grade (as reported by developers). The correlations of subscales of MSLQ with the subscales of the ‘Academic Self Regulated Learning Scale’ (Magno, 2010) ranged from 0.10 to 0.34.

**Study design**
The cross-sectional survey design was used to collect data for the present study.

**Procedure**
The above questionnaire was administered on the sample in classroom situation. They were informed of the purpose and importance of the study and necessary rapport was established with them. Respondents were given written instructions along with the questionnaire. They were asked to read the items of the questionnaire very carefully and express their feelings. They were required to express their opinion concerning each item using a 7 -point scale, ranging from ‘strongly disagree’ (1) to ‘strongly agree’ (7). They expressed their opinion by putting tick (√) mark on the appropriate response boxes as best expression of their feelings. They were also requested not to omit any item in the questionnaire and also told that there was no right or wrong answer. They were assured that the information collected from them would be strictly confidential and would be used for only research purposes. After completing their task, they were thanked for their cordial cooperation.

**Results**
To observe the correlations among intrinsic goal orientation, extrinsic goal orientation, task value, control of learning beliefs, academic self-efficacy, and academic achievement,
the collected data were subjected to the ‘Pearson Product Moment Correlation’ analysis. Results appear in Table-1.

**Table-1: Correlations among intrinsic goal orientation (IGO), extrinsic goal orientation (EGO), task value (TV), Control of learning beliefs (CLB), self-efficacy (SE), and academic achievement (AA)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>AA</th>
<th>IGO</th>
<th>EGO</th>
<th>TV</th>
<th>CLB</th>
</tr>
</thead>
<tbody>
<tr>
<td>IGO</td>
<td>.239*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EGO</td>
<td>-.009</td>
<td>.277**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TV</td>
<td>.094</td>
<td>.448**</td>
<td>.371**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLB</td>
<td>.036</td>
<td>.339**</td>
<td>.533**</td>
<td>.324**</td>
<td></td>
</tr>
<tr>
<td>SE</td>
<td>.250*</td>
<td>.334**</td>
<td>.249*</td>
<td>.349**</td>
<td>.192</td>
</tr>
</tbody>
</table>

*p< 0.05, **p< 0.01

Table-1: indicates that academic achievement was significantly correlated with intrinsic goal orientation (r = 0.239, p<0.05), and self-efficacy (r = 0.250, p<0.05). Intrinsic goal orientation was significantly correlated with extrinsic goal orientation (r = 0.277, p<0.01), task value (r = 0.448, p<0.01), control of learning beliefs (r = 0.339, p<0.01), and self-efficacy (r = 0.334, p<0.01). Extrinsic goal orientation was significantly correlated with task value (r = 0.371, p<0.01), control of learning beliefs (r = 0.533, p<0.01), and self-efficacy (r = 0.249, p<0.01). Task value was significantly correlated with control of learning beliefs (r = 0.324, p<0.01), and self-efficacy (r = 0.349, p<0.01).

The collected data were subjected to t test to see the differences between low achiever and high achiever students in motivational factors. Results appear in Table-2.

**Table-2: Mean differences between low achiever and high achiever students in intrinsic goal orientation (IGO), extrinsic goal orientation (EGO), task value (TV), Control of learning beliefs (CLB), and self-efficacy (SE)**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Low Achiever</th>
<th>High Achiever</th>
<th>df</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>N</td>
</tr>
<tr>
<td>IGO</td>
<td>32</td>
<td>22.75</td>
<td>4.51</td>
<td>54</td>
</tr>
<tr>
<td>EGO</td>
<td>32</td>
<td>23.25</td>
<td>4.12</td>
<td>54</td>
</tr>
<tr>
<td>TV</td>
<td>32</td>
<td>36.04</td>
<td>3.84</td>
<td>54</td>
</tr>
<tr>
<td>CLB</td>
<td>32</td>
<td>23.04</td>
<td>4.20</td>
<td>54</td>
</tr>
<tr>
<td>SE</td>
<td>32</td>
<td>45.53</td>
<td>4.84</td>
<td>54</td>
</tr>
</tbody>
</table>

*p< 0.05

Table-2 indicates that low achiever and high achiever students differred significantly in intrinsic goal orientation (t = -2.57 with df 90, p< 0.05), and self-efficacy (t = -2.08 with df 90, p< 0.05) learning strategies. Table 2 also indicated that low achiever and high achiever students did not differ significantly in extrinsic goal orientation, task value, and academic achievement.
To observe gender differences in motivational factors, t test was used. Results of this test appear in Table-3.

**Table-3: Mean differences in intrinsic goal orientation (IGO), extrinsic goal orientation (EGO), task value (TV), Control of learning beliefs (CLB), and self-efficacy (SE) by gender**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Male</th>
<th></th>
<th></th>
<th>Female</th>
<th></th>
<th></th>
<th>df</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IGO</td>
<td>44</td>
<td>23.86</td>
<td>3.51</td>
<td>48</td>
<td>24.30</td>
<td>3.45</td>
<td>90</td>
<td>-.877</td>
</tr>
<tr>
<td>EGO</td>
<td>44</td>
<td>23.43</td>
<td>4.25</td>
<td>48</td>
<td>24.48</td>
<td>3.83</td>
<td>90</td>
<td>-1.313</td>
</tr>
<tr>
<td>TV</td>
<td>44</td>
<td>36.39</td>
<td>4.12</td>
<td>48</td>
<td>37.35</td>
<td>3.23</td>
<td>90</td>
<td>-1.261</td>
</tr>
<tr>
<td>CLB</td>
<td>44</td>
<td>22.89</td>
<td>4.02</td>
<td>48</td>
<td>24.60</td>
<td>3.38</td>
<td>90</td>
<td>-2.223*</td>
</tr>
<tr>
<td>SE</td>
<td>44</td>
<td>49.18</td>
<td>13.04</td>
<td>48</td>
<td>47.56</td>
<td>4.80</td>
<td>90</td>
<td>.803</td>
</tr>
</tbody>
</table>

*p< 0.05

Figures in Table-3 indicate significant mean difference between male and female students in control of learning beliefs (t = -2.223 with df 90, p< 0.05). Table-3 also indicated that there were no significant mean differences in intrinsic goal orientation, extrinsic goal orientation, task value, and self-efficacy by gender.

To see the differences between science and humanities students in motivational factors, the collected data were subjected to t test. Table-4 shows the findings.

**Table-4: Mean differences between science and humanities students in intrinsic goal orientation (IGO), extrinsic goal orientation (EGO), task value (TV), Control of learning beliefs (CLB), and self-efficacy (SE)**

<table>
<thead>
<tr>
<th></th>
<th>Science</th>
<th></th>
<th></th>
<th>Humanities</th>
<th></th>
<th></th>
<th>df</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td>N</td>
<td>M</td>
<td>SD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IGO</td>
<td>21</td>
<td>25043</td>
<td>2.29</td>
<td>65</td>
<td>24.11</td>
<td>3.61</td>
<td>84</td>
<td>1.97*</td>
</tr>
<tr>
<td>EGO</td>
<td>21</td>
<td>23.90</td>
<td>3.21</td>
<td>65</td>
<td>24.35</td>
<td>3.93</td>
<td>84</td>
<td>-.475</td>
</tr>
<tr>
<td>TV</td>
<td>21</td>
<td>37.29</td>
<td>2.83</td>
<td>65</td>
<td>37.00</td>
<td>3.89</td>
<td>84</td>
<td>.310</td>
</tr>
<tr>
<td>CLB</td>
<td>21</td>
<td>23.71</td>
<td>3.01</td>
<td>65</td>
<td>24.18</td>
<td>3.81</td>
<td>84</td>
<td>-.515</td>
</tr>
<tr>
<td>SE</td>
<td>21</td>
<td>53.28</td>
<td>16.79</td>
<td>65</td>
<td>47.28</td>
<td>5.36</td>
<td>84</td>
<td>2.537*</td>
</tr>
</tbody>
</table>

*p< 0.05

Figures in Table 4 indicate significant mean differences between science and humanities students in intrinsic goal orientation (t = 1.97 with df 84, p< 0.05) and self efficacy (t = 2.537 with df 84, p< 0.05). Table 4 also indicates there were no significant mean differences in extrinsic goal orientation, task value, and control of learning beliefs.
Discussion

The present study was designed to investigate the relationship between academic motivational factors and academic achievement of secondary school students. Other objectives of the present were - i) to compare the differences between high achiever and low achiever students, ii) to compare the level of gender differences, iii) to compare the differences between science and humanities students.

Table-1 showed significant correlation between academic achievement and intrinsic goal orientation. It means higher the intrinsic goal orientation, higher the academic achievement. This finding is consistent with some previous studies (Was, 2006; Chan, 2008; Touminen-Soini et al., 2008; Chyung et al., 2010; Bulus, 2011; Gul & Shehzad, 2012; Stegers-Jager et al., 2012). Intrinsic goal orientation indicates students’ participating in a task for reasons such as challenge, is curiosity, and mastery. Students who are intrinsically motivated are more likely to engage in the task willingly as well as work to improve their skills, which will increase their capabilities. According to cognitive approaches to motivation, we are more apt to preserve, work harder, and produce work of higher quality when motivation for task is intrinsic rather than extrinsic (Feldman, 2008).

So, it was expected to find significant positive correlation between intrinsic goal orientation and academic achievement.

Table-1 also showed significant correlation between academic self-efficacy and academic achievement. It means higher the academic self-efficacy, higher the academic achievement. This finding is also consistent with some previous findings (Pintrich et al., 1991; Wolters & Pintrich, 1998; Neuville, Frenay, & Bourgeois, 2007; Ahangi & Sharaf, 2013; Stegers-Jager et al., 2012; Al-Harthry & Aldhafri, 2014). A possible reason is that self-efficacious students participate more readily, work harder, persist longer and have fewer adverse emotional reactions when they encounter difficulties than those who doubt their capabilities. An individual with high sense of self-efficacy believes in his or her capability to carry out a task, invest effort in the activity, persist in the face of difficulty and has an optimistic outlook. Even students with high sense of self-efficacy believes study harder and persist longer when they approach difficulties, whereas students who have low self-efficacy belief perform worse at learning tasks and tend to avoid difficult tasks (Schunk, 1994). Therefore, a significant and positive effect of academic self-efficacy on the academic performance is justifiable. However, Table 1 failed to show significant correlation among academic achievement and extrinsic goal orientation, task value, and control of learning beliefs. Neuville et al. (2007) found that task value is not significantly correlated with academic achievement. But, Kovita (2014) found significant positive correlation between academic achievement and control of learning beliefs. This finding needs further research.

Findings from Table 2 revealed that low achiever students differed from high achiever students in intrinsic goal orientation, and academic self-efficacy. Results indicated students who were high achievers had more intrinsic goal orientation and higher academic self-efficacy than low achiever students. These findings also give support to the findings of Table-1 where we found that academic achievement was significantly and
positively correlated with intrinsic goal orientation, and self-efficacy. Matuga (2009) found that goal orientation is significantly differed by high, middle, & low achievers.

Figures in Table-3 revealed significant mean differences in control of learning beliefs between boys and girls. Results showed that female students had more control of learning beliefs than their male counterparts. However, the present study failed to show any gender differences in intrinsic goal orientation, extrinsic goal orientation, task value, academic self-efficacy. Hagberg (1995, as cited in Tariq, Mubeen, & Mahmood 2011) and Tariq et al., (2011) found that male and female had similar intrinsic motivation. One possible reason of no gender differences is that different steps and policies that are taken by Bangladesh government for more involvement of female students. Now-a-days, boys and girls both receive equal academic opportunities. There is no gender discrimination. So, it is expected to find no significant gender difference in motivational factors.

Table-4 revealed that the students of science group significantly differ from humanities group in intrinsic goal orientation and academic self-efficacy. Science group students had higher intrinsic goal orientation and more self-efficacy beliefs. Students who are intrinsically motivated are more involved in ‘problem based learning’. In Bangladesh, curriculum of science group involves more problem based task than humanities group. This may be a possible reason for difference between science and humanities students in intrinsic goal orientation and in academic self-efficacy beliefs.

Findings of the present study are suggesting that for better academic achievement teachers and guardians may take some psychological interventions to motivate the students by improving their control of learning belief, and academic self-efficacy beliefs.

The present study has some limitations. This study was conducted in one district (Netrakona) out of 64 districts in Bangladesh. As the study did not cover wide geographical areas, it is difficult to generalize the findings over whole of Bangladesh. Again, data of the present study were collected from only class IX and class X students. So, it cannot be generalized to the whole secondary students. It is, therefore, suggested to conduct a study on larger samples representative of the secondary students population in Bangladesh.

References


