2014

Education and Health: A Cross-Cultural Comparison among Muslim, Hindu and Santal Communities in Rajshahi District

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University of Rajshahi

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BY

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The thesis is submitted as the partial fulfillment of requirements for the Degree of Master of Philosophy

By

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DECLARATION

I sincerely declare that this thesis entitled "Education and Health: A Cross-Cultural Comparison among Muslim, Hindu and Santal Communities in Rajshahi District" is based on own my work and no part of the thesis has been presented for any publication. This thesis work was carried out under the proper supervision of honorable Professor Dr. Md. Emaj Uddin, Department of Social Work, at the Institute of Education and Research, University of Rajshahi, Bangladesh.

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CERTIFICATION

This is my great pleasure to certify that the thesis entitled **"**Education and Health: A Cross-Cultural Comparison among Muslim, Hindu and Santal Communities in Rajshahi District" conducted by Md. Afzal Hossain is a completely new, innovative and original work. He has conducted this research independently under my supervision at the Institute of Education and Research, University of Rajshahi, Bangladesh**.**

I hereby recommend him to submit the thesis and the work is up to my satisfaction for the Degree of Master of Philosophy.

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ACKNOWLEDGEMENT

This is my humble attempt to express my deepest sense of gratitude and heartfelt indebtedness to all individuals whose great concern, consultation and co-operation continued my research work and encouraged me to complete the thesis. It is not possible to name all of them. The foremost among them are:

Md. Emaj Uddin Ph. D., Professor, Department of Social Work, University of Rajshahi, my M. Phil. thesis advisor/supervisor who provided all supports to generate ideas in the thesis and continued his efforts in understanding my feelings behind the ideas behind the thesis. He also helped me to express those at ease. I am sincerely indebted to him for his support in conducting fieldwork, writing and finalizing the thesis.

Md. Shadequl Arefin (Matin) Ph. D., Professor, Department of Social Work, University of Rajshahi who appreciated my ideas and encouraged me to continue my thesis.

I would like to express my deepest gratitude to my honorable my director and respectable teachers**,** Institute of Education and Research (IER), University of Rajshahi whose thoughtful teaching, supports and valuable comments in the seminars enriched the thesis. I am also grateful to all staffs of IER who administratively helped me over the years.

Finally, I would like to express my great gratitude and thanks to all respondents who actively participated in interview and honestly gave data related to my thesis.

MAH

List of Abbreviations

OCD- Oxford English Dictionary
WHO- World Health Organization
DV - Dependent Variable
IV- Independent Variable
CI- Confidence Intervals
SES- Socioeconomic Status
SDS- Sociodemographic Status
HLS- Health Life Style
OV- Outcome Variable
PV- Predictor Variable
MLR- Multinomial Logistic Regression
SPH- Subjective Physical Health
BBS- Bangladesh Bureau of Statistics
BER- Bangladesh Economic Review
USA-United States of America
AHD- American Heritage Dictionary
UNESCO- United Nations Educational, Scientific, and Cultural Organization
GU- Godagari Upazilla
BD- Bangladesh
SMD- Stedman's Medical Dictionary
UN-United Nations
WB-World Bank
BDHS- Bangladesh Demographic and Health Survey

TABLE OF CONTENTS

CHAPTER PAGE

LIST OF TABLES

TABLE **PAGE**

FIGURE

SUMMARY

Young adult men across the ethnic groups, unlike young adult women, suffer from physical and mental health problems. Social survey approach which includes wider social, economic, political, religious, cultural and environmental factors to analyze and compare public physical and mental health across age, sex, social class, ethnicity, religion, and region is very popular. Of the social factors, education shapes health in many pathways, including physiological process, socioeconomic status, sociodemographic status, life style, and psychosocial process.

Ross and Mirowsky's (1999, 2003) human capital theory of learned effectiveness and research has shown that lower educational attainment is linked to poorer subjective physical health, mediating through lower socioeconomic, higher socio-demographic pressure, and unhealthy life style among general population. Although relationship of lower education to poorer SPH among the general people and minority ethnic groups in abroad was remarkable, mediating through socioeconomic status, sociodemographic factors, and life style, there is no particular social survey study on how socioeconomic status, demographic factor, and lifestyle links between education and subjective physical health among Muslim, Hindu and Santal Men in rural Bangladesh. The main aim of the study, however, is to examine and compare the relationships between level of formal education and subjective physical health status, mediating through socioeconomic status (occupation, income & family property), sociodemographic status (age structure, marriage & family pattern), and lifestyle (sense of personal control, timing of meal, bathing, smoking) between Muslim, Hindu and Santal adult Men in Godagari, Rajshahi district.

Based on human capital theory of learned effectiveness by Mirowsky and Ross (1999, 2003) we hypothesized that lower educational attainment of Santal adult men than the Hindu and Muslim young adult men is significantly associated with their poorer SPH, mediating through their lower socioeconomic attainment, higher demographic pressure, and unhealthier lifestyle in Godagari, Rajshahi district, Bangladesh.In so doing, 550 young adult men of the ethnic groups whose ages 20-50 years were randomly selected.

The findings of the study suggested that lower level of educational attainment was associated with very poor subjective physical health among the Santal men than the Hindu and Muslim

men. After adjusting for demographic, socioeconomic and lifestyle, secondary and above educational category was positively related to very poor and poor health outcomes in the Hindu and Muslim men than in the Santal men. These findings may contribute to attain subjective feelings about educational and sociodemographic discrimination of the ethnic group, Hindu that may enhance their subjective physical health status attainment and social well-being. These findings on the relationship of education to health may also promote social progress, social change, and social policy development among the ethnic communities in rural Bangladesh.

1. INTRODUCTION

1.1 Purpose of the Study

Social approach (e.g., social survey approach, social action, & social movement) to study and enhance health is better than clinical approach. Although clinical approach helps diagnosis and prescription for the same disease of different people, it widely ignores social standing of people and their socio-cultural context in which they live. Actually, social approach includes wider social, economic, political, religious, cultural and environmental factors to analyze and compare public physical and mental health across age, sex, social class, ethnicity, religion, and region. Mirowsky & Ross (2003) and others emphasize that education explains the root causes of subjective health and social well-being. By *education* we mean years of formal schooling that help individuals not only to attain valued social positions, including occupation, income, power, and healthy lifestyle but also foster health in their life cycle (Braveman & Egerter, 2009; Grossman & Kaestner, 1997; Ross & Mirowsky, 1999; Winkleby, Fortmann & Barrett, 1990). How does education foster health?

Education can influence health in many pathways: Physiological process, socioeconomic status, sociodemographic status, life style, and psychosocial process (sense of personal control, social stress, and social support). Ross and Mirowsky's (1999, 2003) human capital theory of learned effectiveness and research has shown that lower educational attainment is linked to poorer subjective physical health, mediating through lower socioeconomic, higher socio-demographic pressure, and unhealthy life style among general population. For example, using representative sample in 1990 and 1995 Ross and Willigen (1997) have found that the well educated have lower level of physical and emotional distress by the pathways of paid work, stable job, and accumulating economic resources with high personal control, stable social (marital) relation, and social support. Based on telephone survey of 2593 representative sample aged 18-95, Ross and Mirowsky (1999) have found that quantity, credential, and selection of formal education is positively linked to physical functioning and perceived health, controlling for sociodemographic status (age, sex, marital status, parental education) among general population. They also have found that of the three aspects of education, years of schooling has the largest effects on subjective physical health, attributable to its correlation with work and economic condition, psycho-social resources, and healthy lifestyles. Some comparative or cross-ethnic

studies also have explored that differences in educational attainment affect health across the ethnic groups (Dressler, Oths & Gravlee, 2005; Mirowsky & Ross, 1980; Mossakowski, 2008; Williams & Collins; 1995; Williams & Sternthal, 2010). These studies have found that lower educational attainment of minority ethnic groups compared to the white one in the western cultures is significantly associated with poor physical health, mediating through socioeconomic status, unhealthy lifestyle, and poor psychosocial status (social support and low self-esteem). For example, Mossakowski (2008) has found that lower educated young adult Blacks and Hispanics have significantly higher levels of depressive symptoms than the Whites, mediating through lower socioeconomic status, poverty and family background in the US.

Cross-ethnic studies in Bangladesh reveal that lower educational attainment of minority groups compared to the Muslim may have significant association with their poorer subjective physical and mental health, mediating through lower occupational, income, and wealth attainment, marital and family instability, divorce, and unhealthy life style (heavy drinking, frequent smoking and violent acts), as were in cross-ethnic studies in western societies. Previous research in this country has indicated that the Muslim, Hindu and Santal) who live side by side in the northwestern villages are socio-culturally distinct from each other. Bangladeshi Muslim is the dominant community (75%), while the Hindu (6%) and the Santal is the largest minority groups (BBS, 2005). Although they all speak in Bengali, the Muslims prefer more *Arabic-Urdu version*, the Hindu *Sanskrit* and the Santal *Santali* to communicate within the culture or between the cultures (Uddin, 2008a, 2008b). Religiously, the Muslims believe in *Monotheism*, the Hindus in *Polytheism* and the Santal in *Animism*. Some comparative research has shown that most of the Santal, including men and women, compared to other ethnic groups, are historically poor, landless, and illiterate in north-western Bangladesh. Likely, their socioeconomic status (e.g., occupation, income, & material resource) attained are lower than the Muslim and Hindu men (Uddin, 2012a, 2012b). The Santal men with lower socioeconomic status are more likely to marry early, attain higher family size and suffer more from marital and family instability than the later ethnic (Muslim & Hindu) men. As a result, the Santal men in comparison with Muslim and Hindu men cannot play their familial and social roles to fulfill their family needs and engage in unhealthy life style in association with their illiteracy and lower socioeconomic status, landlessness and family sociodemographic status (Uddin, 2012a). The illiteracy or lower educational attainment of Santal men with their lower socioeconomic status, higher

sociodemographic status and unhealthy life style is linked to their poorer subjective physical health and social well-being than in the Muslim and Hindu men in Godagari, Rajshahi district. In spite of it, there is no particular social survey study on the linking of lower educational attainment of Santal Men to their poorer subjective physical health than in Muslim and Hindu men, mediating through socioeconomic status, demographic factor, and lifestyle in rural Bangladesh.

Previous literature reviewed suggests that relationship of lower education to poorer SPH among the general people and minority ethnic groups in abroad was remarkable, mediating through socioeconomic status, sociodemographic factors, and life style. Cross-ethnic studies in Bangladesh mainly focused on the linking of sociocultural status to social stress (Uddin, 20011a) and mental health or sociodemographic status to arrack drinking among the ethnic men (Uddin, 20011a), but there was no particular social survey study on socioeconomic status, demographic factor, and lifestyle that may have linkages of education to subjective physical health among Muslim, Hindu and Santal Men in rural Bangladesh. The main aim of the study, therefore, was to examine and compare the relationships between level of formal education and subjective physical health (SPH) among the ethnic men, mediating through socioeconomic status, sociodemographic status, and lifestyle in Godagari, Rajshahi district. The main aim of the study, however, was to examine and compare the relationships between level of formal education and subjective physical health status, mediating through socioeconomic status (occupation, income & family property), sociodemographic status (age structure, marriage & family pattern), and lifestyle (sense of personal control, timing of meal, bathing, smoking) between Muslim, Hindu and Santal adult Men in Godagari, Rajshahi district. The findings of the study may contribute to attain literacy (primary, secondary and tertiary level), socioeconomic status, and healthy life style of the minority group (Hindu and Santal) that may enhance their SPH attainment and social well-being. These findings may also help develop causal model to analyze the association of education with health through the pathways.

1.2 Defining Key Concepts

This study uses two key terms, "*Education*" and "*Subjective Physical Health*". Theories and research studies have defined the key terms in many ways. Based on Mirowsky & Ross's (2003)

human capital theory of learned effectiveness and social survey approach this study has defined the key concepts in the following ways:

1.2.1 Education

Education in general sense is a way of learning in which knowledge, skills, and habits of a group of people are transferred from one generation to the next through teaching, training, or research. Education frequently takes place under the guidance of others (Dewey, 1916-1944). In measurement sense education refers to the years of schooling. According to Mirowsky & Ross's (2003) human capital theory of learned effectiveness, the more years of schooling people have, the greater their stock of human capital to achieve a better human life. Education, *according to human capital theory of learned effectiveness*, indicates the accumulated knowledge, skills, and resources acquired in school that increase effective agency, develop a sense of personal control over their life, develop self-efficacy, and positive motivation to do work hard for better life. Education also develops the habits and skills of communication, including reading, writing, inquiring, discussing, looking things up, and figuring things up. It also develops analytic skills that help to classify, analyze, experiment, summarize, synthesize, interpret and predict some things around us. Actually, education helps people to effectively solve personal and social problems faced in environment in which they live (Mirowsky & Ross, 2003)

1.2.2 Subjective Physical Health

Health in general sense is the condition of biomedically, ecologically, and psycho-socially free from any diseases. Health is the quality of life that renders the individuals fit to live most and serve best ways. *Oxford English Dictionary* (OCD, 2000) defines health as 1) Soundness of body; that condition in which its functions are duly and efficiently discharged… 2) By extension, The general condition of the body with respect to the efficient or inefficient discharge of functions: usually qualified as good, bad, week, delicate etc. The *American Heritage Dictionary* elaborates health as 1) The overall condition of an organism at a given time; 2) Soundness, especially body or mind; 3) Freedom from disease or abnormality; 4) A condition of optimal well-being (American Heritage of the English Language, 1992). The *World Health Organization* (WHO) defines health as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization, 1948). Mirowsky & Ross (2003) defines health as feeling sound, well, vigorous, and physically able to do things that

most people ordinarily can do (p. 33). Based on the definitions we mean by subjective physical health (SPH) a dimension graded from very negative (unhealthy) to ideally positive (very healthy on which an individual's current health status place (Mirowsky & Ross, 2003). We use the term health in general sense, not clinical ones.

1.3 Objectives of the Study

The main aim of this study is to examine relationship between education and subjective physical health status, mediating through socioeconomic status, demographic status and life style among Muslim, Hindu and Santal men in Godagari Upazila in Rajshahi district. In order to attain the research purpose the specific research objectives are given below:

I. To examine and compare lower formal education of Santal Men than Muslim and Hindu ones is significantly linked to their poorer subjective physical health in Godagari Upazila, Rajshahi district;

II. To examine whether or not socioeconomic status, sociodemographic status, and life style Santal men compared to Muslim and Hindu ones have linkages of lower formal educational attainment to their poorer subjective physical health in Godagari Upazila, Rajshahi district;

III. To examine whether or not socioeconomic status, sociodemographic status, and health life style has mediating effects on the linkages of formal education and subjective physical health among Santal adult men than Muslim and Hindu adult men in Godagari Upazila, Rajshahi district;

1.4 Research Questions

Although both primary education and health care In Bangladesh is free for men and women including minority group (Hindu and Santal) and also secondary and tertiary education is subsidized by the government, relevant research reports reveal that primary and secondary school attainment is 75.4% and 38% respectively (Bangladesh Demographic and Health Survey, 2011). Adult literacy rate (15 years and older) is 61.4% and youth literacy rate (15-24 years) is 77% (UNESCO, 2012). In health care patient doctor ratio was 2860:1 and average life

expectancy 66.8 years (Bangladesh Economic Review, 2014). Based on the statement of problem and current information our research questions studied are given below:

I. Is lower educational attainment of Santal men significantly associated with their poorer subjective physical health than in Muslim and Hindu men in Godagari Upazila, Rajshahi district?
II. How does higher demographic pressure (age structure, marital history, and family size) of Santal men affect more on the relationship between lower educational attainment and poorer subjective physical health than that in Muslim and Hindu men in Godagari Upazila, Rajshahi district?
III. How does lower socioeconomic status (e.g., occupation, income & land property) of Santal men affect more on the relationship between lower educational attainment and poorer subjective physical health than that in Muslim and Hindu adult men in Godagari Upazila, Rajshahi district?
IV. How does unhealthier life style of Santal men affect more on the relationship between lower educational attainment and poorer subjective physical health than that in Muslim and Hindu adult men in Godagari Upazila, Rajshahi district, Bangladesh?

These research questions may help to generate relevant research hypotheses, to select research design and appropriate data collection and analysis techniques. This methodology may result fruitful research findings on the relationship between formal education and SPH among the ethnic adult men in Godagari, Rajshahi, Bangladesh

1.5 Justification of the Study

Previous empirical research has shown that socio-economic, political, psychological, socio-cultural, geographic, demographic and administrative factors linking of education to health have enormous negative consequences on minority ethnic and racial adult men' health than that on the majority adult men in European and western societies. Cross-cultural ethnic studies in rural Bangladesh have found that lower educational attainment, especially illiteracy of Santal adult men than Muslim and Hindu men leads to lower socioeconomic status, unhealthy life style (e.g., smoking, drug use) and lower personal control attainment. These lower gradations of Santal

adult men compared to the Muslim and Hindu adult men have devastating effects on their physical health, health care, social well-being and longevity in rural Bangladesh. The Santal men with poor or very poor physical health than the others are less contributive to their family, community and even wider society than the others. The findings of this study on the relationship between formal education and SPH, mediating through demographic (age-structure, marriage and family history), socioeconomic status (occupation, income and family property) and health lifestyle may contribute to promote health status attainment in Bangladesh. The findings of this research may be applied to reformulate social policy and program on education and to achieve skillful manpower and healthy population that help to accelerate social change, social progress and economic prosperity in Bangladesh.

2. CONCEPTUAL FRAMEWORK

2.1 Education and Subjective Physical Health

Previous research over the past several decades has shown that level of education is consistently linked to health (Gilleskie & Harrison, 1998; Kaplan, Haan, & Syme 1987; Leigh 1983; Liu et al. 1982; Morris 1990; Pappas et al. 1993; Ross & Wu 1995). How does education foster health? Human capital theory of learned effectiveness by Mirowsky and Ross (1999, 2003) suggests that education increases well-being of subjective health and physical functioning of all adults and decreases morbidity, impairment, and mortality, because it increases effective agency of all individuals. According to the theory education indicates accumulated knowledge, skills, habits and personal resources acquired in school that enable people to achieve a better socioeconomic status, lifestyle and healthy life. Actually, education develops the means through which all adults achieve social goals that promote health in their life cycle. Some research has found that education is the key to people's position in the stratification system; it decreases the likelihood of being unemployed and gives people access to good jobs with high incomes, wealth and power in social structure. These socioeconomic positions also enhance personal control in one's own life and maintain healthy social life. Actually, education effects on health mediated through theses social and economic resources (Mirowsky & Ross, 2003). Following the assumption some cross-sectional and longitudinal studies have shown that the well-educated experience better health than the poorly educated, as indicated by high levels of perceived physical health and physical functioning and low levels of morbidity, mortality, and disability (Doornbos & Kromhout 1990; Feldman et al. 1989; Fox, Goldblatt, & Jones 1985; Guralnik et al.1993; Gutzwiller et al. 1989; Ross & Mirowsky 1999; Syme & Berkman 1986; Williams 1990; Winkleby et al. 1992; Woodward et al. 1992).

Evidence of ethnic studies in western societies indicates that minority ethnic men and women with lower level of education are more likely to suffer from poorer health than dominant white or Hispanic men and women. This evidence is reflected in the minority ethnic groups in Bangladesh. Ethnic studies show that educational attainment of minority groups is significantly lower than Muslim and Hindu ((Kispota, 1994; Nath, Yasmin & Shajamal, 2005; Uddin, 2010). These studies have found that average years of education of the Santal are lower than the Hindu, and Muslim, because of their parental lower socio-economic status, resources, dominance in power structure and aspiration in education. Using representative sample Uddin (2004) found

that most of the Santal couples (68.53% for husband and 72% for wife) compared to the Muslim (29.66% for husband and 40.69% for wife) never went to school. At both primary and secondary levels educational attainment of the former was also lower than the later. Lower educational attainment of Santal than Hindu and Muslim is the most likely to affect their poor subjective physical health, disease and indigenous health care in rural Bangladesh. Based on the evidence and argument the following section reviews on how intervening factors, such as socioeconomic status, family demographic status and life style are linked to the relationships between education and subjective physical health that may vary by Muslim, Hindu and Santal group in Bangladesh.

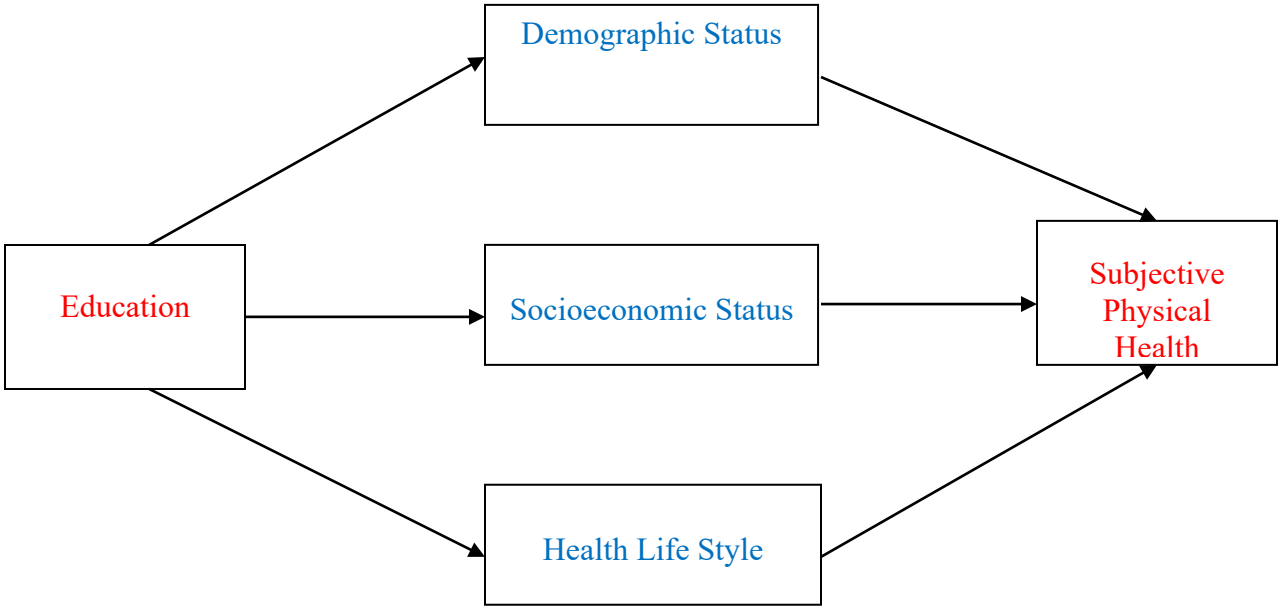

Figure 1: Model Directing Relation of Education to Subjective Physical Health

2.2 Education, Socioeconomic Status and Subjective Physical Health

Socioeconomic status (occupational status, household income, wealth/family property) links between education and health. Previous cross-ethnic research in the US society has shown that education precedes other status attainment such as occupation, personal/family income and wealth among the ethnic groups. Although these statuses of the ethnic people to fulfill their human needs are important, level of educational attainment is more important to attain SPH and social well-being. Some cross-ethnic research has found that the lower educated minority people

with lower job, income and family land property is linked to poorer subjective health, susceptive to more infectious and chronic diseases, and lower attainment of health care than the whites with higher education, lower income and wealth who attain good/ better health, less susceptive to diseases and modern health care. Mirowsky and Ross (1999, 2003) argue that although lower occupation and economic hardship have pervasive effects on necessity collection, including food, clothing, housing, medical care, education moderates the effects of lower occupational attainment and economic hardship. They found that the well-educated men tend to avoid economic hardship at all level of income than the lower educated men tend to have lower occupational and income attainment and less likely to able to avoid economic hardship.

2.3 Education, Demographic Status and Subjective Physical Health

A great deal of evidence has shown that sociodemographic status (age structure, marital history, family form and family size) links between education and subjective physical health conditions and its related social care (Mirowsky & Ross, 2003). The educated men marry later, attain small family size, and manage family needs and problems with limited resources by proper planning, while the illiterate men marry early, attain high family size and cannot manage family problems with limited resources that affect more likely to their subjective physical health. Mirowsky and Ross (2003) have found that the educated men build a happy marital relation with good qualities, create cohesive family bonds and run family life smoothly that foster their physical subjective health of all adults.

2.4 Education, Health Lifestyle and Subjective Physical Health

Level of education also influences health life style that, in turn, links to health, especially SPH among adult men. Previous population-based studies reveal that the well-educated men maintain healthy life styles, consisting of regular exercising, walking, drinking moderately, avoiding smoking and over-fooding that may foster good health, while the illiterate and lower educated men practice unhealthy life styles, including less or irregular exercising, walking, over-dieting, more sleeping, more smoking, drinking heavily, driving speedily and always engaging risky jobs that may harm health (Mirowsky & Ross, 2003). Further research has shown that the educated men are able to control over one's own and their familial life than the illiterate and primary educated men. The later may suffer more from physical diseases than the earlier men (Mirowsky & Ross, 1989; Wheaton, 1980).

2.5 Education and Health in Bangladesh Context: Muslim, Hindu & Santal

Bangladesh is an agro-economy-based society where different religious and ethnic communities live side-by-side. An ethnic community is a group of people who share the same value system, including language, values, beliefs, attitudes, norms, customs or traditions and accordingly they behave across the social situations for meeting their human needs. The ethnic communities, Muslim, Hindu, and Santal, we studied are socio-culturally distinct from each other. The Bangladeshi *Muslims* are socio-economically and politically more dominant than the other communities (Bangladesh Bureau of Statistics, 2005). Ethnically, they are mixture of different stocks, having with the long traditions of Islamic values, attitudes, beliefs and ideas and speak in *Bengali* language with the mixture of *Arabic-Urdu* preference (Maloney, Aziz, & Sarker, 1981; Sarker, 1997). The *Hindus* are the largest minority group and speak in Bengali language traced from *Hinduism* (Sarker, 1997). The *Santal* belong to *Proto-Australoid* stocks and speak in *Austric-Mundary* language for the former (Kayes, 1995; Ali, 1998) and *Sadri* and *Kuruk* for the later. Religiously, every community mentioned bears and preserves distinct belief system: the Muslims believe in *Monotheism,* the oneness of God or *Tawhid* (Eshleman & Cashion, 1985; Levy, 1963; Maloney, Aziz & Sarker, 1981; Sarker, 1997); the Hindus believe in *polytheism,* Gods and Goddesses, some are males and some are females under the creation of almighty *Bhagwan* (Maloney, Aziz & Sarker, 1981; Sarker, 1997), and the Santal believe in *animism,* nature worships such as birth, death, illness, Sun, Moon, stars, rain, air, cyclone and other natural disasters (Ali, 1998; Bandyopadhyay, 1999; Kispotta, 1997; Rahaman, 2004).

Despite launching social and economic development programs through public and private organizations since country's independence, several culture-specific (Ali, 1998; Jansen, 1998; Kayes, 1995) and cross-cultural studies (Siddique, 1984; Uddin, 2008) have reported that socioeconomic progress of Muslim is higher than the minority groups. These studies indicate that although the country is based on agriculture, most of the minority groups are the poorest of the poor; they have no land property and even settlement of land (Ali, 1998; Das, 2011). Most of the minorities engage in day laboring for their livelihood. As a result, most of adults are illiterate and many of the children never go to school for their formal learning and most of them never access to formal labor force participation, and likely their annual family income is very lower than the Muslim. Some cross-ethnic literature (Uddin, 2008) reveals that the minority groups, especially the schedule caste Hindu, and Santal with low socioeconomic progress cannot maintain their livelihood according to country's societal goals and means and suffer from physical health problems in the country. Following above-mentioned conceptual framework the next section reviews relevant literature in Bangladesh context.

2.5.1 Education and Subjective Physical Health

Education is the success of pillar of socioeconomic attainment and health. Cross-ethnic studies (Uddin, 2009) in Bangladesh have found that most of the Muslim and Hindu adult men (62.07%) are farmers, while most of the Santal men (83.92%) are day laborers because of lack of education and skill training in business and administrative sectors. Other studies have reported that most of the jobs in the formal and informal sectors are occupied by the educated groups: Muslim and Hindu. As a result, most of the minority people, including adult men and women are engaged in day-laboring in rural Bangladesh. Likely, their personal and family income is lower than the Hindu and Muslim men in rural Bangladesh, because the former have higher education and engaging in prestigious job, including land property, business and other sources of income compared to the later. These lower socioeconomic positions and the least amount of land property of the Santal compared to the Hindu and Muslim may have linkages between lower educational attainment and poor subjective health and social well-being (Uddin, 2011).

2.5.2 Socioeconomic Status and Subjective Physical Health

Occupational attainment of individual person in an economic system fully depends on his or her educational attainment. As most of the rural Bangladeshi are illiterate, so they adopt several occupations related to agricultural system. As many of them are landless farmers, so they work as day laborers, including Santal. Uddin (2008) and other (Rahman, 1984; Sattar, 1984) found that both Santal adult men and women would take part in agriculture and construction fields as manual laborers, because of their low education and lack of proper skills. Using representative sample Uddin (2009) compared occupational differences in educational attainment between Muslim and Santal. The findings revealed that most of the Muslim husbands (62.07%) were farmers, while most of the Santal husbands (83.92%) were day laborers. Uddin (2009) argues that although main occupation in this region is agriculture, most of the minority men compared to Muslim and Hindu men are landless and severe poor. As a result, Santal men compared to other ethnic men are more likely to suffer health problems in rural Bangladesh.

Income also depends on educational and occupational attainment. Using representative sample Uddin (2008, 2010) found that annual income of the Muslim men was higher than the minorities, especially the Santal in rural Bangladesh, because the former had more land property, business and other source of income. Another study by Uddin (2009) compared annual family

income between Muslim and Santal communities. The results of the study showed that low income couples (>20,000 Tk. yearly) in the Santal community were 80.42% compared to the Muslim (33.10%). But high income (31,000+) and middle income (21,000-30,000 Tk.) among the Muslim couples (40% for high and 26.90% for middle income respectively) were higher than that among the Santal. Low occupational attainment landlessness and income of the Santal compared to the Muslim and Hindu may influence health attainment in rural Bangladesh.

2.5.3 Demographic Status and Subjective Physical Health

Demographic research in Bangladesh has shown that the illiterate men than primary and higher educated men are the most likely to marry early; their marriage relations are more likely to end divorce than those are educated; they expect and attain higher family size than the educated. In most cases, they cannot meet family needs with limited resources than those who are educated. Ethnic studies in this country have found that the illiterate Santal men, mentioned above, marry earlier and have higher family size than in the Muslim and Hindu men. As the Santal men marry early and have higher family size, so their marital and family life is more unstable than that in the Muslim and Hindu families. These sociodemographic pressures of the Santal adult men compared to the Muslim and Hindu adult men may affect their subjective physical health conditions.

2.5.4 Heath Life Style and Subjective Physical Health

Health life styles or health behaviors in Bangladesh, to some extent, are different from western societies, mentioned above. The cross-ethnic studies in this society have also revealed that the illiterate or lower educated Santal men are more likely to maintain unhealthy life styles such as, less timely meal taking, less-control over personal life and frequently smoking than the educated Muslim and Hindu. Other studies have found that the Santal men compared to the other ethnic groups maintain unhealthy life styles, including heavy arrack drinking, including food-deprivation, not taking three times of meals in time than those of Muslim and Hindu men in rural Bangladesh (Uddin, 2011). Uddin (2009, 2011) and others argue that lower level of socioeconomic attainment is mainly responsible to less-control over-personal and unhealthy life of the Santal than that the Muslim and Hindu men.

2.6 Hypothesis

Overview of the relevant literature suggests that lower educational attainment is the most likely to affect poor subjective physical health in the Santal adult men than that in the Muslim and

Hindu adult men, mediating through socioeconomic status, demographic status, and health life style. Based on the evidence and its related arguments on given areas we formulate and test the following research hypotheses:

Hypothesis 1*:* Lower educational attainment of Santal adult men is significantly associated with their poorer subjective physical health than in the Hindu and Muslim adult men in Godagari, Rajshahi district.

Hypothesis 2*:* Relationship between lower educational attainment and lower socioeconomic status will produce poorer SPH among Santal adult men than in the Hindu and Muslim adult men in Godagari, Rajshahi district.

Hypothesis 3*:* Relationship between lower educational attainment and higher demographic status will produce poorer SPH among Santal adult men than in the Hindu and Muslim adult men in Godagari, Rajshahi district.

Hypothesis 4*:* Relationship between lower educational attainment and lower health lifestyle will produce poorer SPH among Santal adult men than in the Hindu and Muslim adult men in Godagari, Rajshahi district.

3. RESEARCH METHODOLOGY

3.1 Setting of the Study

This study examines and compares how socioeconomic status, sociodemographic and life style attainment links between education and SPH in Muslim, Hindu and Santal adult men in rural Bangladesh. In so doing, *Godagari Upazila* of Rajshahi district, Bangladesh where Muslim, Hindu and Santal ethnic group live in and interact with each other was purposefully selected.

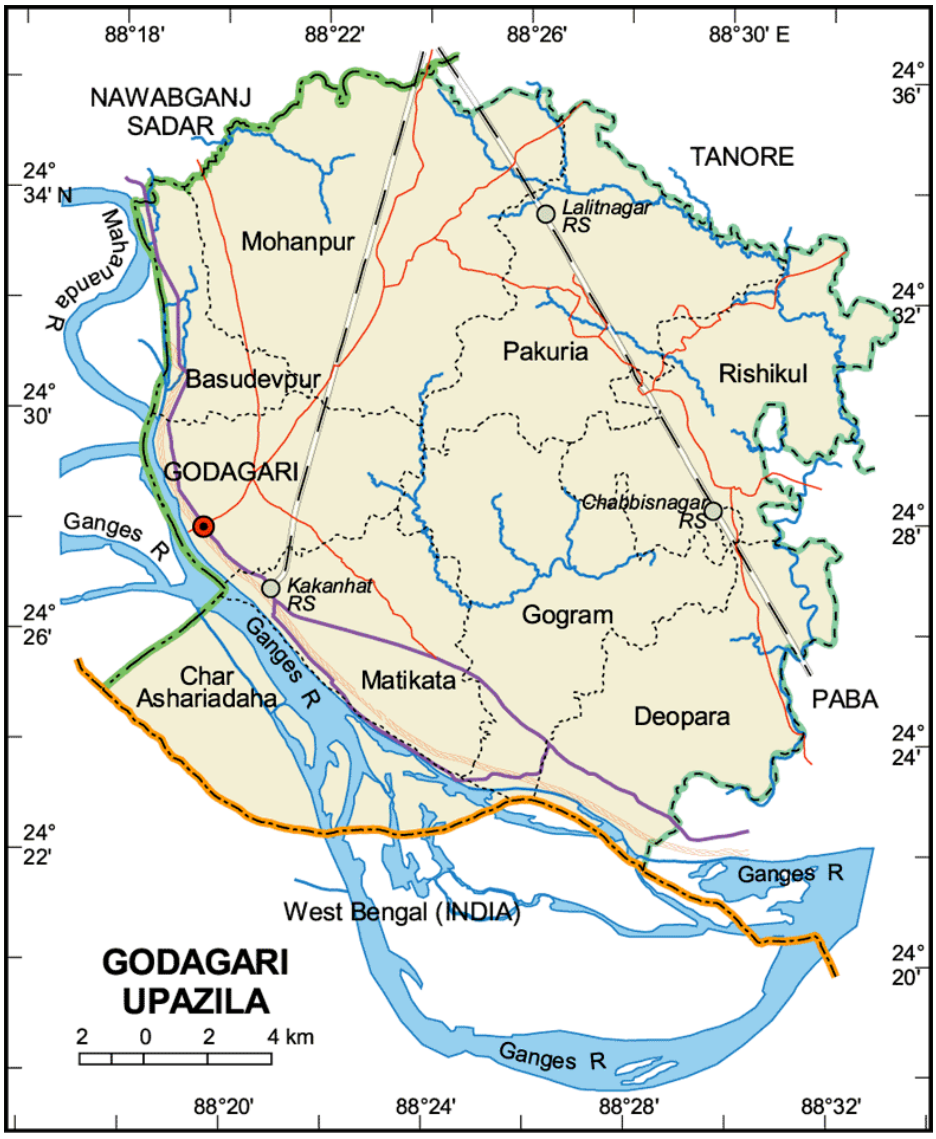

Figure 2: Map of Godagari Upazila

Godagari is one of the nine Upazilas of Rajshahi district, having an area of 472.13 sq km. It is situated on the bank of Padma and belongs to some part of "Barendra Bhumi" zone. Actually, Godagari Upazila is administratively divided into 9 unions and 2 municipalities. Total people of the Upazila are 2, 17, 811; sex ratio is more or less the same, 50.88% for male and 49.12% female. In this region, Muslims are 86.55%, Hindus are 8.05%, and the rest of them (5.4%) are Christian, Mahali and Santal. According to Bangladesh Bureau of Statistics (2010) there are about 3749 families, including the Santal families (Ahmed, 2004). In addition, socio-economic status of Muslim and Hindu is better than the Santal people.

3.2 Sample

In Godagari Upazila young adult men (aged 20-55) who are the breadwinner of their families suffer from illiteracy and socioeconomic attainment. This socioeconomic status influences not only marriage timing and family formation but also influences health life style that in turn affects their health attainment. This situation is more severe among Santal young adult men than among Hindu and Muslim men in Godagari Upazila. Based on Godagari Upazila's sociodemographic statistical profile we observed three ethnic men's socioeconomic situations across the villages and then we selected Chabbish Nagar Haji Para and Chabbish Nagar, Mandoil, Saidpur and Hindupara, and Paitapukur, Fultala and Fulbari of the Rishikul union where three ethnic communities were dwelt. In order to select young adult men of the ethnic groups we used door-to-door observation method and a total of 1200 adult men, whose age range were 20-55, were preliminarily listed: 450 for Muslim from Chabbish Nagar Haji Para and Chabbish Nagar, 400 for Hindu from Mandoil, Saidpur and Hindupara, and 350 (for Santal from Paitapukur, Fultala and Fulbari of the Rishikul union of the Godagari Upazila. The three ethnic adult men enlisted were the head of their respective families. From the list 550 samples (190 (34.55%) for Muslim, 180 (32.73%) for Hindu, and 180 (32.73%) for Santal) were selected, using simple random sampling. In so doing, we used lottery method. This sampling procedure to select the sample from three ethnic communities studied was more eligible, unbiased and scientific to analyze mediating effects of socioeconomic status, demographic status and health life style on relationships between education and SPH among the ethnic adult men in rural Bangladesh.

3.3 Variable and Measure

This study uses three types of variables: Outcome (dependent), predictor (independent) and covariate (intervening). SPH is treated as a dependent variable; education is treated as an independent variable, and socioeconomic, demographic and health lifestyle are used as intervening or covariates. These variables are measured in the following ways:

3.3.1 Outcome Variable

In order to measure health public health scientists included different dimensions of health and measured at different level, including nominal, ordinal, interval and ratio. This study partially followed Mirowsky & Ross's (1989) conceptualization of subjective physical health. In order to measure subjective physical health we asked our respondents, at present how would you feel your subjective physical health? The answer of this question was coded as 1=very poor, 2= poor, and 3= good.

3.3.2 Predictor Variable

The main predictor variable of this study is education that pervasively influences covariates and dependent variable. We asked our selected samples: Which level of education would you complete and was accounted for 1= illiterate (0 year formal education), 2= primary (1-5 years), and 3= secondary and above. Actually, *educational status attainment of the respondent's* was numerically measured in years and then it was categorized into 1= Illiterate (0 years of education), 2= Primary level (1-5 years of education), and 3= Secondary level (6-12 years of education) and 4= Tertiary level (13 and above years of education). As the number of tertiary was the least, it was merged into the secondary level.

3.3.3 Covariates

Based on our hypothesized model shown in figure 1 we used some intervening variables or covariates, including socioeconomic status, demographic and life style to analyze relationships between education and subjective physical health among Muslim, Hindu and Santal adult men. Socioeconomic status in this study covers objective characteristics, including current occupation, total family income and ownership of land property, demographic status includes age structure, marital history and family size and life style covers timely meal taking, capacity of stress control and smoking habit that may singly influence relation of formal education with subjective physical health among ethnic adult men in the study area. *Occupational status attainment of*

parents was nominally measured and coded as 1= Farming only, 2= Day laboring, 3= Small business, 4= Van puller, 5= others for father's occupation. *Yearly total income attainment* was numerically measured in Taka (1 US$= 80 Bangladesh Taka in currency exchange) and then it was categorized into several groups: 1= 20-39, 2= 40-59, 3= 60-79, and 4= 80+. Ownership of land property was accounted for in bighas and categorized into 1= No own land, 2= 1-5 bighas of land, 3= 6-10 bighas of land and 4= 11+ bighas of land. Age of the respondents was counted in years and classified into 1= 20-29, 2= 30-39, 3= 40-49, and 4= 50+. Marital history was transformed in dummy variables: 1= one time married and 2= two or more times married. Family size was accounted for the number of live births in marital life cycle and it was categorized into 1= no issue, 2= 1-2 issue, 3= 3-4 issue and 4= 5+ issue. Timely meal taking or not by the respondents was accounted for 1= yes and 0= no; whether or not capacity of stress control was measured in 1= yes and 0= no, and whether smoking habit had or not was assigned number 1= yes and 0= no.

3.4 Instrument and Procedure

This study used comparative survey design aimed to find out relationship between education and health among Muslim, Hindu and Santal adult men in Godagari Upazila under the Rajshahi district, Bangladesh. For doing this, semi-structural questionnaire with close-ended questions was designed, following measurement of our dependent, independent and control variables. We also followed several studies, especially Uddin's cross-cultural instruments. In designing questionnaire we considered sociocultural characteristics of the ethnic groups. As most of the respondents were illiterate, interview technique was applied for data collection. Based on the technique we read and present each question of the questionnaire to the respondents and answer of the respondents was written down. Sometimes we proved and repeated some questions to the specific respondents who could not understand our questions.

Before data collection we several times visited our respondent's locality and home in Godagari Upazila, Rajshahi, Bangladesh where the study was conducted. Field work for this research was conducted from September to December, 2014. In order to collect real and valid data from the selected respondents of the communities with the questionnaire the present researcher build up rapport with the respondents to build up interpersonal trust, to create consciousness about the research purposes and objectives, to make easy them for conversation and to encourage them to actively participate in the research process. We continued this process

until the data collection completed. During the first month of data collection we build up rapport with the respondents and next three months (October-December), we collected final data. Most of the respondents would work from morning to mid day and sometimes round the day in the agricultural field, the necessary data were collected in the afternoon when the respondents of the communities were leisured, and present researcher met with the respondents within their family setting where they were intensively interviewed. After completion the interview especial thanks were given to the respondents. In the data collection process the researcher conversed in Bengali language with the respondents because they all did converse Bengali language, and then the responses of the selected respondents were converted into English.

3.5 Reliability and Validity

The responses of the three types of variables, including dependent, independent and intervening were reliable in the sense that the interview technique with the semi-structural questionnaire with open-ended and close-ended questions was applied. The present researcher as an interviewer was skillful in that technique. In addition, researcher build up rapport with the respondents in which interpersonal trust between the interviewer (researcher) and the respondents was developed (Uddin, 2009). Based on the interpersonal relationship (subjectivity) the researcher intensively interviewed every respondent with the questionnaire schedule aimed to collect objective data within one hour in their personal and familial settings. The researcher also considered cultural and status factors of both the parties (interviewer and respondents) when he interacted with the respondents for data collection procedure. However, although there were many quantitative methods to test reliability of the collected data, this research followed qualitative techniques: rapport building with the respondents, one hour structural interview for per respondents, interview in personal and familial settings, and controlled interpersonal cultural factors to collect reliable responses presented in the result section.

3.6 Data Analysis

Based on the main objective, comparative research questions and hypotheses on education and subjective physical health among Muslim, Hindu and Santal men, mediating through socioeconomic, demographic and life style the analysis of collected data was carried out by SPSS in version 20. Especially, Pearson's Chi-Squire test and Spearman's inter-correlation (rho) techniques were applied to find out differences in and association of education with subjective

physical health, including covariates (e.g., socioeconomic status, demographic status and health life style) among Muslim, Hindu and Santal men in Godagari Upazilla, Rajshahi District, Bangladesh. These statistical techniques for measurement of bivariate association (also differences) were appropriate, because our all variables, including dependent, independent and covariates were categorical in nature.

Response of our dependent variable such as SPH was three categories and independent and covariates were limited to up to four categories that are more appropriate for multinomial logistic regression analysis (MLR). Following these rules we used MLR to analyze significant relationships between education and SPH, mediating through socioeconomic status (e.g., occupation, income, ownership of land property), demographic factor (e.g., age structure, marital history, family size) and life style (e.g., three times of meal taking, capacity of stress control, smoking habit). In doing so, relationships between predictors (education x ethnicity of men) x outcome variable were followed and last category, good of SPH (e.g., very poor, poor & good) was used as a referent category (Peng, 2007; Zamboanga, Raffaelli & Horton, 2006). In addition, coefficients of β (SE) in the table indicate directions of positive or negative relations and exponential β of coefficients or odds ratio and its 95% confidence intervals (CI) indicate strengths of relationships between education and SPH among the ethnic men.

Overall results of the test (see table 4-6), however, suggested that level of SPH measures was positively and negatively associated with level of educational attainment: ranging from β=.04-5.77 for very poor health and β= .03- 1.07 for poor health at $p<0.01$ and $p<0.05$ level (Peng, Lee & Ingersoll, 2002). A positive coefficient indicates an increase in the odds of the health outcomes occurring in that category relative to other categories, whereas a negative category indicates a decrease in the odds of the outcomes in that category. When each coefficient of B is exponentiated, that coefficient represents the multiplicative change in the odds of the health outcomes occurring in that category relative to other. The results also suggested that lower educational level of the Santal men compared to the Hindu and Muslim men was higher risk factor to very poor or poor SPH. The findings of the study were presented in the result chapter.

4. RESULTS AND ANALYSIS

4.1 Descriptive Analysis

4.1.1 Education and Subjective Physical Health

Purpose of this study was to examine and compare relationship between education and subjective physical health (SPH) among Muslim, Hindu and Santal men in Godagari, Rajshahi. For this we hypothesized that lower educational attainment of Santal young adult men than the Hindu and Muslim young adult men is significantly associated with their poorer subjective physical health in rural Bangladesh. In so doing, 550 young adult men of the ethnic groups whose age range was from 20 to 55 were randomly selected. Self-reported data presented in table 1 show that levels of SPH (e.g., very poor, poor, good) of Santal men compared to Hindu and Muslim ones were significantly associated with level of formal education (e.g., illiteracy, primary and secondary+). Specifically, the Santal men's very poor SPH was higher than the Hindu and Muslim men's that was linked to the illiteracy than the later men's. The poor SPH of the Hindu men compared to the Muslim and Santal men's was also related to primary educational attainment, but good health condition of Hindu men compared to the Muslim and Santal Men's was associated with secondary and higher secondary educational attainment in the study area of Rajshahi district. Results of chi-squire test suggest that there were significant differences in SPH in association with levels of educational attainment ($p<0.01$) among the ethnic adult men in the study area (see table 1).

Table 1. Level of Formal Education and Subjective Physical Health by Muslim (n=190) , Hindu (n=180), and Santal (n=180) Adult Men in in Godagari, Rajshahi, Bangladesh, 2014

Ethnic Community	Level of education	Subjective Physical Health			X^2
		Very Poor%	Poor%	Good%	
Muslim	Illiterate	38 (20.00)	2 (1.05)	1 (0.53)	73.176*
	Primary Education	29 (15.26)	10 (5.26)	2 (1.05)	(0.000)
	Secondary +	23 (12.11)	56 (29.48)	29 (15.26)	
Hindu	Illiterate	46 (25.56)	17 (9.44)	1 (0.55)	57.173*
	Primary Education	20 (11.11)	22 (12.22)	3 (1.67)	(0.000)
	Secondary +	15 (8.33)	26 (14.44)	30 (16.67)	
Santal	Illiterate	67 (37.22)	11 (6.11)	1 (0.56)	46.995*
	Primary Education	19 (10.56)	4(2.22)	1(0.56)	(0.000)
	Secondary +	26 (14.44)	42(23.33)	9(5.00)	

Note: Percentages in parentheses, Df= 4, *p<0.01

4.1.2 Socioeconomic, Demographic, Health Lifestyle and Subjective Physical Health

We also hypothesized that socioeconomic status, demographic factor and health lifestyle links between level of formal education and SPH among Muslim, Hindu and Santal young adult men in rural Bangladesh. First of all we would analyze bivariate analysis and then we would turn into the main hypothesis. Table 2 shows the bivariate distributions of socioeconomic status, demographic and health lifestyle that were significantly different by the Muslim, Hindu and Santal men in study area. In socio-economic status, most of the Santal (72.78%) compared to Hindu (50.55%) and Muslim (23.16%) were day-laborer (49.6%) and the Muslim and Hindu men in farming, small business and official job engagement were higher than the Santal men. Lower levels of yearly family income of the Santal men were higher than the Hindu and Muslim men. Likewise, landlessness and small amount of land ownership of the Santal men was higher than the Hindu and Muslim men.

In demographic status, most of the respondents (see table 2) were middle age group, while the least of them were the lowest and highest age group. In marital history, most of the respondents (91.58% for Muslim, 93.33% for Hindu, and 91.11% for Santal respectively) were married one time, but the rest of them were married (8.42% for Muslim, 6.67% for Hindu, and 8.89% for Santal respectively) were married two or more times. Regarding marital history the ethnic men were more or less the same. The Muslim men's (54.21%) lower family size with 1-2 number of live births was higher than the Santal (44.44%) and Hindu (41.11%), while the Santal family size (35.56) with 3-4 children was higher than the other groups. Health lifestyle are also significantly different among the ethnic men. Data in the table 2 show that most of the Santal men (66.11%) were not taken three times of meals timely than the Hindu (61.67%) and Muslim Men (35.26%). As the Santal men's socioeconomic status lower, but family size higher than the Hindu and Muslim men's, they would felt more social stress and their capacity of stress control also was lower than the other ethnic men's (70% for Santal, 62% for Hindu & 56% for Muslim). As a result, most of the Santal men (73.33%) compared to the Hindu (65%) and Muslim men (63%) are the most likely to smoke to control stress that would, in turn, affect their SPH.

Table 2.Percentages of Socioeconomic, Demographic and Health Lifestyle by Muslim (n=190), Hindu (n=180), and Santal (n=180) Adult Men in in Godagari, Rajshahi, Bangladesh, 2014

Characteristics of Socioeconomic, Sociodemographic and Life Style	Community				X^2
Socioeconomic Status	Muslim%	Hindu%	Santal%	df	
Current Occupation					
Farmer	43(22.63)	21(11.67)	3(1.66)	8	124.93*
Official Job	53(27.90)	18(10.00)	36(20.00)		(0.000)
Day-laborer	44(23.16)	91(50.55)	131(72.78)		
Van puller	13(6.84)	14(7.78)	5(2.78)		
Small business	37(19.47)	36(20.00)	5(2.78)		
Total Yearly Income in Thousand					
20-39	29(15.26)	30(16.67)	90(50.00)	6	101.03*
40-59	39(20.53)	73(40.55)	48(26.67)		(0.000)
60-79	44(23.16)	30(16.67)	13(7.22)		
80+	78(41.05)	47(26.11)	29(16.11)		
Ownership of Land in Bighas					
Landless (0 bighas of land)	94(49.47)	115(63.89)	178(98.89)	6	119.71*
1-5 bighas of land	63(33.16)	51(28.33)	2(1.11)		(0.000)
6-10 bighas of land	20(10.53)	6(3.33)	-		
11+ bighas of land	13(6.84)	8(4.45)	-		
Demographic Status					
Age structure in year					
20-29	44(23.16)	33(18.33)	31(17.23)	6	6.42
30-39	61(32.10)	61(33.89)	65(36.11)		(0.378)
40-49	39(20.53)	52(28.89)	42(23.33)		
50+	46(24.21)	34(18.89)	42(23.33)		
Marital history					
One time married	174(91.58)	168(93.33)	164(91.11)	2	0.67
Two or more times married	16(8.42)	12(6.67)	16(8.89)		(0.714)
Family size					
No issue	20(10.53)	28(15.56)	24(13.33)	6	17.62*
1-2	103(54.21)	74(41.11)	80(44.44)		(0.007)
3-4	52(27.37)	49(27.22)	64(35.56)		
5+	15(7.89)	29(16.11)	12(6.67)		
Life Style					
Three times of meals daily taken					
No	67(35.26)	110(61.67)	119(66.11)	2	41.12*
Yes	123(64.74)	70(38.89)	61(33.89)		(0.000)
Capacity of mental stress control					
No	107(56.32)	112(62.22)	126(70.00)	2	7.43**
Yes	83(43.68)	68(37.78)	54(30.00)		(0.024)
Habit of Smoking					
No	70(36.84)	63(35.00)	48(26.67)	2	4.86***
Yes	120(63.16)	117(65.00)	132(73.33)		(0.088)

Note: Percentages in parentheses, *p<0.01, **p<0.05, ***p<0.09

Does lower educational attainment of Santal men compared to Hindu and Muslim men through socioeconomic status, demographic and health lifestyle link to their SPH in the study area? To answer this fundamental question related to our research purpose, research question and hypothesis, we applied Spearman's bivariate technique, including three types of variables such as

outcome, predictor and covariates. The results shown in table 3 reveal that there were both positive and negative correlations between the variables included in the analysis. Especially, level of education was negatively related to occupation and income, but positively related to ownership of land property among the Muslim, Hindu and Santal Men. Further results of land ownership were not associated with age structure, but relationships between age structure, marital history and family size were positive. The other variables such as family size was negatively associated with three times of meals, but three times of meals timely taken or not was positively moderately related to capacity of stress control. Lastly, relationships of capacity with smoking habit and SPH were negatively covariated among the three ethnic men studied.

Table 3.Results of Spearman's Inter-correlation coefficients (rho) between Formal Education, Socioeconomic, Demographic, Health Lifestyle, and Subjective Physical Health (n=550) Among Three Ethnic Adult Men (Muslim, Hindu, Santal) in Godagari, Rajshahi, Bangladesh, 2014

Variables	1	2	3	4	5	6	7	8	9	10
1. Education	100									
2. Occupation	**-.204**** (.000)	100								
3. Income	.514** (.000)	**-.239**** (.000)	100							
4. Land	.295** (.000)	-.395** (.000)	**.585**** (.000)	100						
5. Age	-.217** (.000)	-.072 (.091)	.061 (.155)	**.073** (.089)	100					
6. Marital history	-.135** (.002)	-.062 (.148)	.008 (.846)	.087* (.042)	**.256**** (.000)	100				
7. Family size	-.311** (.000)	-.002 (.968)	-.050 (.239)	.062 (.144)	.706** (.000)	**.213**** (.000)	100			
8. Times of meal	.504** (.000)	-.230** (.000)	.568** (.000)	.381** (.000)	-.069 (.106)	-.085* (.046)	**-.143**** (.001)	100		
9. Stress control	.509** (.000)	-.191** (.000)	.560** (.000)	.303** (.000)	.040 (.348)	-.006 (.897)	-.048 (.258)	**.523**** (.000)	100	
10. Smoking	-.330** (.000)	.116** (.007)	-.290** (.000)	-.183** (.000)	-.043 (.313)	-.007 (.862)	.052 (.222)	-.306** (.000)	**-.340**** **(.000)**	100
11.SPH	.528** (.000)	-.117** (.006)	.461** (.000)	.221** (.000)	-.182** (.000)	-.084 (.050)	-.250** (.000)	.394** (.000)	.472** (.000)	**-.480**** **(.000)**

Note: SPH= Subjective Physical Health, **p<0.01 *p<0.05 (2-tailed test)

4.2 Multinomial Logistic Regression Analysis

4.2.1 Education and Subjective Physical Health

In table 4 we present results from multinomial logistic regression analysis, using three types of educational predictors (e.g., illiteracy, primary, secondary) that significantly affect SPH measures: very poor, poor and good. Here, good category indicates reference category. Our analysis considered whether lower level of educational attainment of the ethnic men, compared to educated men, was significantly associated with very poor or poor SPH.

Results of the analysis suggest that all the illiterate men compared to primary and secondary educated men in the ethnic groups were more likely to suffer from very poor or poor SPH. These tendencies were more remarkable in the Muslim and Hindu men than in the Santal men. It is interesting to note that secondary education (coefficients of B in the first column) was positively related to very poor health outcomes in Muslim and Hindu men than in the Santal Men. Regarding this the odds ratios of Hindu and Muslim (see column 3 and 6) were 5.78 and 3.64 times as likely to occur in very poor health outcomes than that in Santal Men, although human capital theory and its related evidence suggest higher education better health outcomes mentioned above.

Table 4.Results of Multinomial Logistic Regression Analysis on the Linking of Education with Subjective Physical Health by Muslim (n=190), Hindu (n=180) and Santal (n=180) in Godagari, Rajshahi, Bangladesh, 2014

Education	Subjective Physical Health					
	Very Poor			Poor		
	B	SE	Exp (β) 95% CI	B	SE	Exp (β) 95% CI
Intercept	-1.061	.39		.480	.25	
Illiteracy x Muslim	-2.577	1.08	.076** (.009-.637)	-3.424	.77	.033* (.007- .147)
Primary x Muslim	-1.613	.83	.199** (.039-1.008)	-1.544	.44	.213* (.089- .509)
Secondary x Muslim	1.293	.48	3.643* (1.430-9.227)	.410	.35	1.507 (.757- 3.002)
Illiteracy x Hindu	-2.768	1.08	.063* (.008-.524)	-1.475	.38	.229* (.109- .480)
Primary x Hindu	-.836	.73	.433 (.104-1.812)	-.384	.40	.681 (.313-1.483)
Secondary x Hindu	1.754	.50	5.778* (2.170-15.381)	.070	.41	1.073 (.481-2.393)
Illiteracy x Santal	-3.144	1.08	.043* (.005-.357)	-2.286	.41	.102* (.046-.227)
Primary x Santal	-1.884	1.09	.152 (.018-1.304)	-2.038	.60	.103* (.040-.426)
Secondary x Santal	na	na	na	na	na	na
-2LL	274.305					
Model X^2	211.485*					
df	16					
Nagelkerke R^2	.372					

Note: Reference Category is: Good health, df=1,na= not applicable
*P< 0.01
** P< 0.05
*** P< 0.001

4.2.2 Covariates

4.2.2.1 Socioeconomic Status

According to hypothesis 2 we further analyzed data on how socioeconomic status links the relationship between level educational attainment and subjective physical health. In so doing, we include socioeconomic status (occupation, income and land property) as covariates in the model to assess whether or not odds ratios are substantially improved (see table 4). Although overall results show that the odds ratios of the educational categories of the ethnic men were significantly improved in health outcomes, very poor or poor in reference to good. Here, very poor health was positively associated with secondary education in Muslim and Hindu men.

Regarding this the odds ratios of secondary education was more than 3 times improved in very poor SPH in the Hindu men than Muslim men (exp. β =3.881) and Santal men. Of the covariates, yearly family income was the positive significant influence (exp. β= 2.835 for very poor health and (exp. β = 1.672 for poor health) on the relationship between level of educational attainment and very poor health condition among the ethnic men. That is yearly family income play significant role to the relationship between level of educational attainment and very poor health condition among the ethnic men.

Table 5.Results of Multinomial Logistic Regression Analysis on Socioeconomic Status (SES) Linking of Education with Subjective Physical Health by Muslim (n=190), Hindu (n=180) and Santal (n=180) in Godagari, Rajshahi, Bangladesh, 2014

Education	Subjective Physical Health					
	Very Poor			Poor		
	B	SE	Exp (β) 95% CI	B	SE	Exp (β) 95% CI
Intercept	-3.113	.78		-.847	.51	
Illiteracy x Muslim	-1.879	1.13	.153*** (.017-1.405)	-3.337	.79	.036* (.008- .166)
Primary x Muslim	-.903	.88	.405 (.072-2.270)	-1.402	.47	.246* (.098- .621)
Secondary x Muslim	1.356	.55	3.881* (1.324-11.374)	.213	.40	1.238 (.571- 2.682)
Illiteracy x Hindu	-1.880	1.13	.153*** (.017-1.383)	-1.294	.40	.274* (.125- .600)
Primary x Hindu	.191	.81	1.210 (.249-5.877)	-.155	.43	.856 (.370-1.982)
Secondary x Hindu	2.094	.59	8.120* (2.602-25.337)	-.062	.44	.940 (.397-2.225)
Illiteracy x Santal	-1.610	1.14	.200 (.021-1.879)	-1.727	.44	.178* (.075-.421)
Primary x Santal	-.487	1.18	.614 (.061-6.169)	-1.457	.63	.233** (.068-.799)
Secondary x Santal	Na	Na	Na	Na	Na	Na
Covariates-SES						
Current occupation	-.087	.14	.916 (.698-1.202)	.082	.11	1.085 (.877-1.343)
Total yearly income	1.042	.20	2.835* (1.920-4.187)	.514	.13	1.672* (1.291-2.164)
Ownership of land	-.696	.28	.499* (.291-.855)	-.175	.20	.839 (.568-1.240)
-2LL	471.410					
Model X^2	116.810*					
df	16					
Nagelkerke R^2	.424					

Note: Reference Category is: Good health, df=1,na= not applicable

*P< 0.01

** P< 0.05

*** P< 0.001

4.2.2.2 Demographic Status

According to our hypothesis 3 we also analyzed how higher demographic pressure of Santal men than Muslim and Hindu links the relationship between level of educational attainment and subjective physical health. To do this we include demographic variables as covariates in the model to assess whether or not the findings are sustained, after adjusting age structure, marital history and family size of the ethnic men (see table 5). Although overall results (see table 5) also show that educational attainment of the ethnic men was significantly associated with the level of SPH (very poor or poor) in reference to good, secondary education of Muslim and Hindu men

was positively associated with very poor SPH. Regarding this the odds of very poor SPH was 7.30 times higher for the Hindu men than 4.03 times for Muslim men. It is interesting to note that the odds of poor SPH were 1.51 times higher for illiterate Santal men than other ethnic men. Of the covariates, marital history had positive significant influence (exp. β= 2.312) on very poor health and age structure (exp. β = 1.110 for poor health) on the relationship between level of educational attainment and very poor health condition among the ethnic men.

Table 6.Results of Multinomial Logistic Regression Analysis on Demographic Status (DS) Linking of Education with Subjective Physical Health by Muslim (n=190), Hindu (n=180) and Santal (n=180) in Godagari, Rajshahi, Bangladesh, 2014

Education	Subjective Physical Health					
	Very Poor			Poor		
	B	SE	Exp (B) 95% CI	B	SE	Exp (B) 95% CI
Intercept	-.063	.85		-.637	.54	
Illiteracy x Muslim	-1.947	1.10	.143*** (.016- 1.238)	-3.434	.78	.032* (.007- .147)
Primary x Muslim	-1.546	.85	.213*** (.041-1.122)	-1.518	.45	.219* (.091- .526)
Secondary x Muslim	1.394	.49	4.033* (1.544-10.534)	.410	.35	1.507 (.755- 3.008)
Illiteracy x Hindu	-1.546	.85	.213** (.041-1.122)	-1.518	.45	.219* (.091- .526)
Primary x Hindu	-.739	.75	.477 (.111-2.063)	-.356	.40	.701 (.319-1.540)
Secondary x Hindu	1.987	.52	7.297* (2.623-20.304)	1.987	.52	7.297 (.472-2.393)
Illiteracy x Santal	-2.805	1.09	.061* (.007-.511)	.410	.35	1.507* (.755- 3.008)
Primary x Santal	-1.826	1.12	.161 (.018-1.435)	-2.021	.61	.133* (.040-.436)
Secondary x Santal	Na	Na	Na	Na	Na	Na
Covariates-DS						
Age structure	-.291	.23	.748 (.479-1.166)	.105	.15	1.110 (.834-1.477)
Marital history	.838	.66	2.312 (.632-8.465)	-.293	.43	.746 (.320-1.738)
Family size	-.673	.29	.510** (.292-.891)	-.046	.18	.955 (.666-1.368)
-2LL	378.476					
Model X^2	191.351*					
df	16					
Nagelkerke R^2	.412					

Note: Reference Category is: Good health, df=1,na= not applicable, DS= Demographic status

*P< 0.01

** P< 0.05

*** P< 0.001

4.2.2.3 Health Lifestyle

We hypothesized unhealthy life style of Santal men than the Muslim and Hindu links the relationship between educational attainment and subjective physical health in the study area (see hypothesis 4 above). Data presented in table 6 reveal that although relationship between lower educational and poorer subjective physical health of the Santal men than the other ethnic men was significant, secondary education of Muslim and Hindu men was positively associated with very poor and poor SPH. Regarding this the odds of very poor and poor SPH were 4.359 and 1.659 times higher for the Muslim men than 1.112 and 1.206 times for Hindu men than Santal

respectively. We also assessed whether or not the findings were sustained, after adjusting health life style of the ethnic men in the model (see table 6). Of the covariates, three times of meal taken (exp. β= 2.132 for very poor health and exp. β = 1.261 for poor health) and capacity of stress control (exp. β= 3.769 for very poor health and exp. β = 1.966 for poor health) was the positive significant influence on the relationship between level of educational attainment and very poor health condition among the ethnic men.

Table 7.Results of Multinomial Logistic Regression Analysis on Health Lifestyle (HLS) Linking of Education with Subjective Physical Health by Muslim (n=190), Hindu (n=180) and Santal (n=180) in Godagari, Rajshahi, Bangladesh, 2014

Education	Subjective Physical Health					
	Very Poor			Poor		
	B	SE	Exp (B) 95% CI	B	SE	Exp (B) 95% CI
Intercept	-1.165	.60		.791	.37	
Illiteracy x Muslim	-1.876	1.16	.153 (.016-1.492)	-3.135	.79	.044* (.009- .204)
Primary x Muslim	-.690	.91	.502 (.842-3.007)	-1.192	.47	.304* (.121- .762)
Secondary x Muslim	1.472	.55	4.359 (1.496-12.695)	.506	.38	1.659 (.794- 3.464)
Illiteracy x Hindu	-1.076	1.15	.341 (.036-3.249)	-.827	.41	.438** (.194- .985)
Primary x Hindu	.025	.81	1.025 (.209-5.024)	-.054	.43	.947 (.410-2.187)
Secondary x Hindu	1.962	.58	1.112 (2.276-22.229)	.188	.43	1.206 (.516-2.819)
Illiteracy x Santal	-1.054	1.15	.348* (.036-3.342)	-1.563	.44	.210* (.088-.499)
Primary x Santal	-1.165	1.22	.312* (.029-3.402)	-1.611	.65	.200* (.056-.707)
Secondary x Santal	Na	Na	Na	Na	Na	Na
Covariates-HLS						
Three times of meal taken	.757	.45	2.132*** (.880-5.163)	.232	.27	1.261 (.749-2.121)
Capacity of stress control	1.327	.43	3.769* (1.622-8.757)	.676	.27	1.966* (1.163-3.325)
Smoking habit	-2.912	.40	.054* (.025-.119)	-1.261	.27	.283* (.168-.479)
-2LL	329.918					
Model X^2	91.480*					
df	16					
Nagelkerke R^2	.510					

Note: Reference Category is: Good health, df=1,na= not applicable,

*P< 0.01

** P< 0.05

*** P< 0.001

5. DISCUSSION AND RESEARCH LIMITATION

5.1 Discussion

Purpose of this study was to examine and compare relationship between education and SPH among Muslim, Hindu and Santal men in Godagari, Rajshahi. Based on human capital theory of learned effectiveness by Mirowsky and Ross (1999, 2003) we hypothesized that lower educational attainment of Santal adult men than the Hindu and Muslim young adult men is significantly associated with their poorer SPH, mediating through their lower socioeconomic attainment, higher demographic pressure, and unhealthier lifestyle in Godagari, Rajshahi district, Bangladesh. In so doing, 550 young adult men of the ethnic groups whose ages 20-50 years were randomly selected. Findings suggest that Santal men's SPH (e.g., very poor, poor, good) compared to Hindu and Muslim men's was significantly associated with levels of formal education (e.g., illiteracy, primary and secondary). Specifically, the Santal men's very poor SPH was higher than the Hindu and Muslim men's that was linked to their higher illiteracy rate than the later men's. The poor subjective health of the Hindu men compared to the Muslim and Santal men's was also related to primary educational attainment, but good health of Hindu men compared to the Muslim and Santal Men's was associated with secondary and higher secondary educational attainment in the study area of Rajshahi district.

Despite this results from multinomial statistical analysis suggest that although all the illiterate men compared to primary and secondary educated men in the ethnic groups were more likely to suffer from very poor or poor SPH, secondary education of Muslim and Hindu men than the Santal men with lower educational attainment was positively related to very poor health outcomes. Regarding this the odds ratios of Hindu and Muslim were 5.78 and 3.64 times as likely to occur in very poor health outcomes than that in Santal Men, although human capital theory suggests higher the education better the health outcomes. These findings differ from some previous studies (Braveman & Egerter, 2009; Grossman & Kaestner, 1997; Ross & Mirowsky, 1999; Winkleby, Fortmann & Barrett, 1990). For example, Ross and Mirowsky (1999) have found that quantity, credential, and selection of formal education is positively linked to physical functioning and perceived health among general population. They also have found that of the three aspects of education, years of schooling have the largest effects on SPH. Mossakowski (2008) has found that lower educated young adult Blacks and Hispanics have significantly higher

levels of depressive symptoms than the Whites, mediating through lower socioeconomic status, poverty and family background in the US.

Socioeconomic status, demographic factor and health lifestyle links between education and SPH among Muslim, Hindu and Santal young adult men in rural Bangladesh. The findings from our study show the frequency of socioeconomic status, demographic characteristics and health lifestyle are significantly different by the Muslim, Hindu and Santal men. In socio-economic status, most of the Santal compared to Hindu and Muslim were day-laborer and the Muslim and Hindu men in farming, small business and official job engagement were higher than the Santal men. Lower levels of yearly gross income of the Santal men were higher than the Hindu and Muslim men. Likewise, landlessness and small amount of land ownership of the Santal men was also higher than the Hindu and Muslim men.

Although the odds ratios of the educational categories of the ethnic men were significantly improved in health outcomes, very poor health was positively associated with secondary education in Muslim and Hindu men. Regarding this secondary education was more than 3 times improved in very poor SPH in the Hindu men than Muslim men and Santal men, after adjusting socioeconomic covariates. Of the covariates, yearly family income was the positive significant influence the relationship of educational attainment SPH among the ethnic men. These findings were reflected in some previous studies. For example, Lahelma, Martikainen, Laaksonen & Aittomaki (2004) found that although each socioeconomic indicator (e.g., education, occupational class and household income) shows clear gradient with health measured as limiting longstanding illness and self-rated health, inequalities in educational attainment are significantly associated with their health outcomes, mediating through occupational class and income. Mossakowski (2008) found that lower educated young adult Blacks and Hispanics had significantly higher levels of depressive symptoms than the Whites, mediating through lower socioeconomic status, poverty and family background in the US.

Demographic status also influences relationship between education and health. Most of the respondents were middle age group, while the least of them were the lowest and highest age group. In marital history, most of the respondents were married one time, but the rest of them were married were married two or more times. The Muslim men's lower family size was higher than the Santal, the Santal family size was higher than the other groups. Despite this distribution, secondary education of Muslim and Hindu men was positively associated with very poor SPH,

after adjusting demographic status. Of the covariates, marital history and age structure had positive significant influence on the relationship between educational attainment and SPH among the ethnic men.

The ethnic men's health life style links between education and SPH. Data show that most of the Santal men were not taken three times of meals than the Hindu and Muslim Men. In addition, social stress and their capacity of stress control also was lower in Santal men than in Hindu and Muslim men and most of the Santal men compared to the Hindu and Muslim were the most likely to smoke to control stress that would, in turn, affect their SPH. Despite this secondary education was more than 4 times higher in SPH health outcomes in the Muslim men than Hindu men than Santal respectively, after adjusting health life style of the ethnic men in the model. Of the covariates, timing of meal taking and capacity of stress control had the positive significant influence on the relationship between educational attainment and SPH among the ethnic men.

5.2 Research Limitation

Based on human capital theory of learned effectiveness by Mirowsky and Ross (1999, 2003) we hypothesized that lower educational attainment of Santal adult men than the Hindu and Muslim young adult men is significantly associated with their poorer SPH, mediating through their lower socioeconomic attainment, higher demographic pressure, and unhealthier lifestyle in Godagari, Rajshahi district, Bangladesh. But the findings from multinomial logistic regression suggest that secondary educational attainment was significantly associated with subjective physical health in the Hindu and Muslim men than in the Santal men, after adjusting demographic factors, socioeconomic status, and health lifestyle. These findings of the study are different from earlier studies.

Although the findings may enhance subjective physical health in association with educational attainment, there are some major limitations in the study. First previous studies found that lower SES gradients of general people and minority men and women were significantly associated with poorer health, while this study found that higher SES of the Muslim and Hindu compared to Santal had significantly positive association with SPH. Does higher educational attainment and subjective negative feelings or emotion affect poor SPH under the stagnant SES, demographic pressure and unhealthy lifestyle in the Muslim and Hindu than in the Santal community? In addition, cultural and psychological factors may have pervasive effects on the relationship

between education and health. Future cross-cultural study should focus on how psychocultural factors link between education and health among the ethnic men in Bangladesh.

6. CONCLUSION AND IMPLICATION

6.1 Conclusion

Purpose of this study was to examine and compare relationship between education and health among Muslim, Hindu and Santal men in Godagari, Rajshahi. Based on human capital theory of learned effectiveness (Mirowsky & Ross, 2003) we hypothesized that lower educational attainment of Santal young adult men than the Hindu and Muslim young adult men is significantly associated with their poor subjective physical health, mediating through their lower level of lower socioeconomic attainment, sociodemographic status, and unhealthier life style of the former than the later in Godagari, Rajshahi district, Bangladesh.

Using representative sample whose age range was from 20 to 50 years, descriptive findings show that Santal men's subjective physical health condition (e.g., very poor, poor, good) compared to Hindu and Muslim men's was significantly associated with level of formal education attained, including illiteracy, primary and secondary level of education. But after adjusting covariates: socioeconomic attainment, demographic status, and health lifestyle results suggest opposite directions: Only secondary and above educational category was positively related to very poor and poor health outcomes in the Muslim and Hindu men than in the Santal men with lower educational attainment. The odds ratios of secondary and above education were more likely to occur in very poor and poor health outcomes in the Hindu (exp. $\beta = 5.78$) and Muslim and (exp. $\beta = 3.64$) than that in the Santal Men in Godagari, Rajshahi, Bangladesh.

6.2 Social Policy Implications

The main aim of the study was to examine and compare the relationships between level of formal education and subjective physical health status that are varied by demographic factors (age structure, marriage and family size), socioeconomic status (occupation, income and land property), lifestyle and sense of personal control among Muslim, Hindu and Santal men in rural Bangladesh. Using representative sample (young adult men) selected from Godagari Upazila, Rajshahi district this study analyzed how demographic factors, socioeconomic status, lifestyle and sense of personal control link between education and subjective physical health among Muslim, Hindu and Santal men in the study area. The findings of the study suggested that lower level of educational attainment was associated with very poor subjective physical health among the Santal men than the Hindu and Muslim men. After adjusting for demographic,

socioeconomic and lifestyle, secondary and above educational category was positively related to very poor and poor health outcomes in the Hindu and Muslim men than in the Santal men. These findings may contribute to attain subjective feelings about educational and sociodemographic discrimination of the ethnic group, Hindu that may enhance their subjective physical health status attainment and social well-being. These findings on the relationship of education to health may also promote social progress, social change, and social policy development among the ethnic communities in rural Bangladesh.

Bibliography

Ahmed, Dr. B. Nazir (2004), Outbreak investigation on kala-azar in Godagari upazila of Rajshahi, *Institute of Epidemiology, Disease Control and Research* (IEDCR), Mohakhali, Dhaka-1212.

American Heritage Dictionary of the English Language, 1992, 3rd ed. Boston,MA: Houghton-Mifflin, Retrieved November 1, 2000 (http://www.ohiolink.edu.db/ahd.html).

Bangladesh Bureau of Statistics (2005), *Statistical Yearbook of Bangladesh*, Ministry of Planning, Government of the People's Republic of Bangladesh, Dhaka: Statistics Division.

Bangladesh Bureau of Statistics (2012). *Statistical yearbook of Bangladesh*. Dhaka: Statistics Division, Ministry of planning, Government of the Republic of Bangladesh.

Bangladesh Bureau of Statistics (2013). Preliminary report: Population census 2011(p. 18). Dhaka: Statistics Division, Ministry of Planning, Government of the People's Republic of Bangladesh.

Bangladesh Economic Review (2013), Economic Adviser's Wing, Finance Division, Ministry of Finance, Government of the People's Republic of Bangladesh.

Bangladesh Economic Review (2014), Economic Adviser's Wing, Finance Division, Ministry of Finance, Government of the People's Republic of Bangladesh.

Baron-Epel, O., & Kaplan, G. (2009). Can subjective and objective socioeconomic status explain minority health disparities in Israel? *Social Science and Medicine*, 69, 1460-1467.

Barrett, A. E., & Turner, R. J. (2005). Family structure and mental health: The mediating effects of socioeconomic status, family process, and social stress. *Journal of Health and Social Behavior*, 46, 156-169.

Becker, Gary S. (1962), Investment in Human Capita: A Theoretical Analysis, *Journal of Political Economy*, no. 70, pp. 9-49.

Becker, Gary S. (1964), *Human Capital,* New York: Columbia University Press.

Bloom, D. (2005), "Education and Public Health: Mutual Challenges Worldwide". Comparative Education Review-49, pp. 437-451.

Braveman, P. and Egerter, S. (2008), Overcoming Obstacles to Health: Report from the Robert Wood Johnson Foundation to the Commission to Build a Healthier America, Washington, DC: Robert Wood Johnson Foundation Commission to Build a Healthier America.

Braveman, P. and Egerter, S. (2009), Education Matters for Health, Issue Brief 6: Education and Health, Report from the Robert Wood Johnson Foundation to the Commission to Build a Healthier America, Washington, DC, Issue Brief 6: Education and Health, pp. 1-15.

Burstin, H. R., Lipsitz, S. R., & Brennan, T. A. (1992). Socioeconomic status and risk for substandard medical care. *JAMA*, 268, 2383-2387.

Canning, D. (2004), "Health, Wealth and Welfare". Presentation delivered at IMF Economic Forum, April 15, 2004. Transcript and presentation, available online at http://www.imf.org/external/np/tr/2004/tr040415.htm. Accessed May 12, 2006.

Car, D. & Springer, K. W. (2010). Advances in families and health research in the 21st century. *Journal of Marriage and Family*, 72, 743-761.

Chowdhury, F. D. (2004). The socio-cultural context of child marriage in a Bangladeshi village. *International Journal of Social Welfare,* 13(4), 244-253.

Cohen, S., Kaplan, G. A., & Salonen, J. T. (1999). The role of psychological characteristics in the relation between socioeconomic status and perceived health. *Journal of Applied Social Psychology*, 29, 445-468.

Conger, R. D., Conger, K. J., & Martin, M. J. (2010). Socioeconomic status, family processes, and individual development. *Journal of Marriage and Family*, 72, 685-704.

Cutler, D. and Lleras-Muney, A. (2006), Education and Health: Evaluating Theories and Evidence, Bethesda, MD: National Bureau of Economic Research.

Davey, S. G., Hart, C., Hole, D., MacKinnon, P., Gillis, C., Watt, G., Blane, D, & Hawthorne, V. (1998). Education and Occupational social class: which is more important indicator of mortality risk? *Journal of Epidemiology and Community Health*, 52, 153-160.

Dewey, John (1916/1944), Democracy and Education, The Free Press, pp. 1–4. ISBN 0-684-83631-9.

Feldman, Jacob J, Diane M. Makuc, Joel C. Kleinman, and Joan Cornoni-Huntley (1989), National Trends in Educational Differentials in Mortality, *American Journal of Epidemiology*, no. 129, pp. 919-933.

Fox, A. J., P. O. Goldblatt, and D. R. Jones (1985), Social Class Mortality Differentials: Artefact, Selection, or Life Circumstances? *Journal of Epidemiology and Community Health,* no.39, pp. 1-8.

Fremont, A. M. & Bird, C. E. (2000). Social and psychological factors, physiological processes, and physical health. In *the handbook of medical sociology* (pp. 334-352), C. E. Bird, P. Conrad, & A. M. Fremont edited, Upper Saddle River, NJ: Prentice Hall.

Goodenough, W. H. (1980), Ethnographic field techniques. In H. C. Traindis and J. W. Berry (Eds), *Handbook of Cross-Cultural Psychology,* Methodology, Bostom: Allyn and Bacon,Inc. Vol.2. pp.45-48,

Groot, W. and Brink, H. M. Van Den (2006), What Does Education Do To Our Health? Measuring the Effects of Education on Health and Civic Engagement: Proceedings of the Copenhagen Symposium-@OECD, PP.355-363.

Grossman, M. and Kaestner, R. (1997), Effects of Education on Health. In: The Social Benefits of Education, Behrman, J.R. and Stacey, N. (eds), Ann Arbor, MI: University of Michigan Press.

Guralnik, Jack M., Keneth C. Land, Dan Blazer, Gerda G. Fillenbaum, and Laurence G. Branch (1993), Educational Status and Active Life Expectancy among Older Blacks and Whites, *New England Journal of Medicine*, no. 329, pp. 110-116.

Gutzwiller, Feliz, Carlo La Vecchia, Fabio Levi, Eva Negri and Vincent Wietlisbach (1989), Education, Disease Prevalence, and Health Service Utilization in the Swiss National Health Survey, *Preventive Medicine*, no.18, pp.452-459.

Harriman, Philip (1935), Antecedents of the Liberal Arts College, *The Journal of Higher Education*, no. 6 (2), pp. 63–71.

Helmert, U., Herman, B., Joeckel, K.-H., Greiser, E., & Madans, J. (1989). Social class and risk factors for coronary heart disease in the Federal Republic of Germany. Results of the base line survey of the German cardiovascular prevention study. *Journal of Epidemiology and Community Health*, 43, 37-42.

House, J. S., Kessler, R. C., Herzog, A. R., Mero, P. R., Kinney, A. M., Breslow, M. J. (1990). Age, socioeconomic status, and health. *The Milbank Quarterly*, 68, 383-411.

Hyman, Herbert H. and Charles R. Wright (1979), *Education's Lasting Influence on Values*, Chicago, IL: University of Chicago Press.

Hyman, Herbert H. and Charles R. Wright, and John Shelton Reed (1976), *The Enduring Effects of Education*, Chicago, IL: University of Chicago Press.

International Centre for Diarrheal Disease Research, Bangladesh (2007). *Health and demographic surveillance system- Matlab:Vol. 39*. Dhaka, Bangladesh: International Centre for Diarrhoeal Disease Research, Bangladesh.

Islam, M. N. & Ahmed, A. U. (1998). Age at first marriage and its determinants in Bangladesh. *Asia Pacific Population Journal.* 13(2), 73-92.

Jansen, E. A. (1999). *Rural Bangladesh: competition for scarce resources*. Dhaka: University Press Limited.

Kaplan, G. A. & Keil, J. E. (1993). Socioeconomic factors and cardiovascular disease: a review of the literature. *Circulation*, 88, 1973-1998.

Kawachi, I., Adler, N. E., & Dow, W. H. (2010). Money, schooling, and health: Mechanisms and causal evidence. *Annals Of The New York Academy of Sciences*, 1186, 56-68.

Kim, K. & Moody, P. M. (1992). More resources better health? A cross-national perspective. *Social Science and Medicine*, 34, 837-842.

Kitagawa, Evelyn M. and Philip M. Hauser (1973), *Differential Mortality in the United States: A Study in Socioeconomic Epidemiology*, Cambridge, MA: Harvard University Press.

Kohn, Melvin and Carmi Schooler (1982), Job Condition and Personlity: A Longitudinal Assessment of Their Reciprocal Effects, *American Journal of Sociology*, no. 87, pp. 1257-1286.

Kohn, Melvin and Kazimierz M. Slomczynski (1993), *Social Structure and Self Direction: A Comparative Analysis of the United States and Poland*, Cambridge, MA: Blackwell.

Kunst, A. E., Looman, C. W., & Mackenback, J. P. (1990). Socioeconomic mortality differences in the Netherlands in 1950-1984: A regional study of cause-specific mortality. *Social Science and Medicine,* 31, 141-152.

Kunst, Anton E. and Johan P. Mackenbach (1994), The Size of Mortality Differences Associated with Educational Level in Nine Industrialized Countries, *American Journal of Public Health*, no. 84, pp.932-937.

Lahelma, E., Martikainen, P., Laaksonen, M., & Aittomaki, A. (2004). Pathways between socioeconomic determinants of health. *Journal of Epidemiology and Community Health*, 58, 327-332.

Leigh, J. P. (1983). Direct and indirect effects of education on health. *Social Science and Medicine,* 17, 227-234.

LeVine, R. (2000). In Ensuring Learning Takes Place: A focus on literacy, Paper

Liberal Arts: Britannica Concise Encyclopedia, *Encyclopedia Britannica*.

Link, B. G., Phelan, J. C., Miech, R., & Westin, E. L. (2008). The resources that matter: fundamental social causes of health disparities and the challenge of intelligence. *Journal of Health and Social Behavior*, 49, 72-91.

Low, M. D., Low, B. J., Baumler, E. R., et al (2005), Can Education Policy Be Health Policy? Implications of Research on the Social Determinants of Health, *J Health Pilot Policy Law,* no. 30(6), pp. 1131-1162.

Marmot, M., Kogevinas, M., & Elston, M. A. (1987). Social/economic status and disease. *Annual Review of Public Health*, 8, 111-135.

Matthews, K. A. & Gallo, L. C. (2011). Psychological perspectives on pathways linking socioeconomic status physical health. *Annual Review of Psychology*, 62, 501-530.

Meyer, I. H. (2003), Prejudice, social stress, and mental health in lesbian, gay, and bisexual population: Conceptual issues and research evidence, *Psychological Bulletin,* no. 129, pp. 674-697.

Meyer, I. H. (2007), Prejudice and discrimination as social stressors. In I. H. Meyer and M. E. Northridge (Eds.), The Health of Sexual Minorities, Washington, DC: APA.

Miller, W. J. & Wigle, D. T. (1986). Socioeconomic disparities in risk factors for cardiovascular disease. *Canadian Medical Association Journal*, 134, 127-132.

Mirowsky, J and Ross, C. E. (2003), Education, Social Status, and Health, Hawthome, NY: Aldine de Gruyter.

Mirowsky, J. & Ross, C. E. (1980). Minority status, ethnic culture, and distress: A comparison of Blacks, Whites, Mexicans, and Mexican Americans. *American Journal of Sociology*, 86, 479-495.

Mirowsky, J. & Ross, C. E. (1998). Education, personal control, life style, and health: a human capital hypothesis. *Research on Aging*, 20, 415-449.

Mossakowski, K. N. (2008). Dissecting the influence of race, ethnicity, and socioeconomic status on mental health in young adulthood. *Research on Aging*, 30(6), 649-671.

Nunn, Clyde A., Harry J. Crockett, Jr., and J. Allen Williams, Jr. (1978), *Tolerance for Nonconformity*, San Francisco, CA: Jossey-Bass.

Pappas, Gregory, Susan Queen, Wilbur Hadden, and Gail Fisher (1993), The Increasing Disparity in Mortality between Socioeconomic Groups in the United States,1960 and 1986, *New England Journal of Medicine*, no. 329, pp. 103-109.

Parankimalil, John. (2012), Meaning, Nature and Aims of Education, March 26, 2012.

Pascarella, Ernest T. and Patrick T. Terenzini (1991), *How College Affects Students*, San Francisco, CA: Jossey-Bass.

Peng, Chao-Ying, J., Lee, K. L. & Ingersoll, G. M. (2002). An introduction to logistic regression analysis and reporting. *The Journal of Educational Research*, 96 (1), 3-14.

Rashid, K.M, Khabiruddin, M. and Hyder, S. (2004), Text Book of Community Medicine and Public Health, RHM Publisher, Dhaka, Fourth Edition, pp.506-508.

Rechards, H. and Barry, R. (1998), U. S. Life Tables for 1990 by Sex, Race, and Education, J Forensic Economic, no. 11(1), pp. 9-26.

Reynolds, J. R. & Ross, C. E. (1998). Social stratification and health: Education's benefit beyond economic status and social origins, *Social Problems*, 45, 221-247.

Robert, S. A. (1998). Community-level socioeconomic status effects on adult health. *Journal of Health and Social Behavior*, 39, 18-37.

Ross, C. E. & Mirowsky, J. (1995). Does employment affect health? *Journal of Health and Social Behavior*, 36, 230-243.

Ross, C. E. & Mirowsky, J. (1999). Redefining the association between education and health: The effects of quantity, credential, and selectivity. *Demography*, 36, 445-460.

Ross, C. E. & Wu, Chia-Ling (1995). The links between education and health. *American Sociological Review*, 60, 719-745.

Ross, C. E. and Mirowsky, J. (1999), Refining the Association between Education and Health: The Effects of Quantity, Credential, and Selectivity, *Demography*, no. 36(4), pp. 445-460.

Ross, C. E. and Wu, C. (1995), The Links between Education and Health, *Am Sociological Review,* no. 60, pp. 719-745.

Ross, C. E., & Willigen, M. V. (1997). Education and the subjective quality of life. *Journal of Health and Social Behavior*, 38, 275-297.

Ross, C. E., Mirowsky, J., & Goldsteen, K. (1990). The impact of the family on health: The decade in review. *Journal of Marriage and Family,* 52, 1059-1078.

Ross, Catherine E. (1989), "The Intersection of Work and Family: The Sense of Control and Well-Being of Women and Men", Paper Presented at the Family Structure and Health Conference, August, San Francisco.

Ross, Catherine E. and Chia-ling Wu (1995), The Links between Education and Health, *American Sociological Review*, no. 60, pp. 719-745.

Ross, Catherine E. and John Mirowsky (1989), Explaining the Social Patterns of Depression: Control and Problem-Solving-or Support and Talking, *Journal of Health and Social Behavior*, no. 30, pp. 206-219.

Ross, Elizabeth Dale (1976), The Kindergarten Crusade: The Establishment of Preschool in the United States, Athens: Ohio University Press. p. 1.

Sarker, Profullo and Davey, Gareth (2009), Exclusion of indigenous children from primary education in Rajshahi division of northwestern Bangladesh, *International Journal of Inclusive Education*, vol. 13, no. 1.

Schultz, Theodore (1962), Reflections on Investment in Man, *Journal of Political Economy*, no. 70, pp. 1-8.

Sewell, W. H., & Hauser, R. M. (1975). *Education, occupation and earnings: Achievement in the early career.* New York: Academic Press.

Spaeth, Joe L. (1976), Cognitive Complexity: A Dimension Underlying the Socioeconomic Achievement Process, pp. 103-131 in *Schooling and Achievement in American Society*, edited by W. H. Sewell, R. M. Hauser, and D. L. Featherman, New York: Academic.

Stedman's Medical Dictionary (2000), Montvale, NJ: Medical Economics Company, Inc. Retrieved November 1, 2000. (http: //www.pdrel.com/pdr/pdrel/stedlev1.htm?srch=health).

Steptoe, A., Kunz-Ebrecht, S., Owen, N., Feldman, P. J., Willemsen, G., Kirschbaum, C., & Marmot, M. (2003). Socioeconomic status and stress-related biological responses over the working day. *Psychosomatic Medicine*, 65, 461-470.

Toufique, K. A. & Turton, C. (2002). *Hands not land- how livelihoods are changing in rural Bangladesh.* Dhaka: Bangladesh Institute of Development Studies.

Uddin, M. E. (2006), Family Structure in a Village of Bangladesh: A Cross-Cultural Study, Unpublished Ph.D. dissertation, the Institute of Bangladesh Studies, Rajshahi University, Rajshahi, Bangladesh.

Uddin, M. E. (2008a), Socio-Demographic Status and Arrack Drinking Patterns among Muslim, Hindu, Santal and Oraon Communities in Rasulpur Union, Bangladesh: A Cross-Cultural Perspective, *International Journal of Social Sciences,* Vol. 3(3), Summer, pp.148-155.

Uddin, M. E. (2009). Cross-cultural socio-economic status attainment between Muslim and Santal couple in rural Bangladesh. *World Academy of Science, Engineering and Technology*, Vol. 4(11), 779-786.

Uddin, M. E. (2009a), Cross-Cultural Socio-Economic Status Attainment between Muslim and Santal Couple in Rural Bangladesh, *International Journal of Behavioral, Cognitive, Educational and Psychological Sciences,* Vol.1(3), Summer, pp.154-161.

Uddin, M. E. (2009b), Cross-Cultural Value Orientations among the Muslim, Hindu, Santal and Oraon Communities in Rural Bangladesh, *International Journal of Human and Social Science,*vol.4(10),PP.754-765.

Uddin, M. E. (2011). Cross-cultural social stress among Muslim, Hindu, Santal and Oraon communities in Rasulpur of Bangladesh. *International Journal of Sociology and Social Policy,* 31(5/6), 361-388.

Uddin, M. E. (2015a). Ethnic disparity in family socioeconomic status in Bangladesh: Implication for family welfare policy practice. *Global Social Welfare: Research, Policy, and Practice*, 2(1), 29-38.

Uddin, M. E. (2015b). Family socio-cultural values affecting early marriage between Muslim and Santal communities in rural Bangladesh. *International Journal of Sociology and Social Policy*, 35 (3/4), 141-164.

Uddin, M.E. (2008b), Family Communication Patterns between Muslim and Santal Communities in Rural Bangladesh: A Cross-Cultural Perspective, *International Journal of Human and Social Science,* vol.3 (3), Summer, pp.207-219.

Uddin, M.E. (2008c), Arrack Drinking Patterns among Muslim, Hindu, Santal and Oraon Communities in Rasulpur Union of Bangladesh: A Cross-Culyural Perspective, *Journal of Drug Education,* vol.38 (4), pp.405-424.

UN (2003), World Development Report 2003, United Nations, New York, p.87.

UN (2003), World Development Report 2003, United Nations, New York, p.85.

UNESCO (2008), Education for All Monitoring Report 2008, Net Enrollment Rate in Primary Education.

Wardle, J. J. Waller and M. Jarvis (2002), "Sex Differences in the Association of Socioeconomic Status with Obesity", *American Journal of Public Health*, 92 (8), pp.1299-1304.

Wheaton, Blair (1980), The Sociogenesis of Psychological Disorder: An Attributional Theory, Journal of Health and Social Behavior, no. 21. pp. 100-124.

Wilkinson, R. G. (1997). Socioeconomic inequalities in morbidity and mortality in Western Europe. *Lancet*, 350, 516-517.

Williams, D. R. (1990). Socioeconomic differentials in health: A review and redirection. *Social Psychology Quarterly*, 53, 81-99.

Winkleby, M. A., Fortmann, S. P. and Barrett, D. C. (1990), Social Class Disparities in Risk Factors for Disease: Eight- Year Prevalence Patterns by Level of Education, *Prev Med,* no. 19(1), pp. 1-12.

Winkleby, M. A., Jatulis, D. E., Frank, E., & Fortmann, S. P. (1992). Socioeconomic status and health: How education, income, and occupation contribute to risk factors for cardiovascular disease. *American Journal of Public Health*, 82, 816-820.

Winkleby, Marilyn A., Darius E. Jatulis, Erica Frank, and Stephen P. Fortmann (1992), Socioeconomic Status and Health: How Education, Income, and Occupation Contribute to Risk Factors for Cardiovascular Disease, *American Journal of Public Health*, no. 82, pp. 816-820.

World Bank (2000), Bangladesh: A Proposal for Rural Development Strategy, Dhaka, The University Press Limited.

Appendix 1
Education and Health: Questionnaire

1. Age structure of respondent
   a) 20-29
   b) 30-39
   c) 40-49
   d) 50+
2. Head of household
   a) Male
   b) Female
3. Community identity
   a) Muslim
   b) Hindu
   c) Santal
4. Religion of respondent
   a) Islam
   b) Hinduism
   c) Nature worship
5. How many times would you memorize your almighty God or Allah?
   a) Every time
   b) Sometimes
   c) Never
6. Current occupation of respondent
   a) Farmer
   b) Official job
   c) Day-laborer
   d) Van-Puller
7. Ownership of land in bighas
   a) No own land
   b) 1-5 bighas of land
   c) 6-10 bighas of land
   d) 11+ bighas of land
8. Total yearly income in thousand
   a) 20-39
   b) 40-59
   c) 60-79
   d) 80+
9. Marital history
   a) One time married
   b) Two or more times married
10. Duration of marital life in year
    a) 1-5
    b) 6-10
    c) 11-15
    d) 16+
11. Family size
    a) No Issue
    b) 1-2
    c) 3-4

d) 5+

12. Level of Education of the respondent
    a) Illiterate (0 year formal education)
    b) Primary (1-5 years)
    c) Secondary +
13. Would you agree “Health is wealth”?
    a) Strongly agree
    b) Agree
    c) Do not agree
14. Would you believe in “Prevention of disease is better than cure”?
    a) Strongly believe
    b) Believe
    c) Do not believe
15. Would you daily eat three times of your meals in time?
    a) Yes
    b) No
16. Which source would you drink water from?
    a) Tube well
    b) Deep tube well
    c) Other
17. Would you bathe daily?
    a) Yes
    b) No
18. Would you have a sanitary latrine?
    a) Yes
    b) No
19. With which would you wash your hands after latrine?
    a) Soap
    b) Soil
    c) Other
20. Would you control your mental stress raised from family/social relation?
    a) Yes
    b) No
21. Would you smoke?
    a) Yes
    b) No
22. If yes, how many times would you smoke?
    a) 1-2 times
    b) 3-4 times
    c) 5-6 times
    d) 7+ times
23. At present you would feel healthy and bodily function effectively….
    a) Very Poor
    b) Poor
    c) Good
24. Did you become ill in last 6 months?
    a) Yes
    b) No
25. If yes, which type of disease are you affected by?
    a) Infectious disease or transmitted disease
    b) Non- infectious disease or non-transmitted

c) Both of them

26. If so, which type of treatment did you take in?
    a) Treatment with common sense
    b) Treatment from expert consultation
    c) Both of them
27. Which type of consultation did you receive from?
    a) Consultation from village non-professional
    b) Consultation from village doctor
    c) Consultation from professional doctor
28. Would you verify information before treatment?
    a) Yes
    b) No
29. Which type of decision would you take for treatment?
    a) Decided singly
    b) Decided jointly in the family
    c) Decided from other (neighbor, health broker)
30. Would you know community health center or Upazila health complex provides some health services?
    a) Yes
    b) No
31. Would you receive any health services from the health center in last 3 months?
    a) Yes
    b) No
32. If yes, would you face any problem in receiving services? a) Yes b) No
33. If yes, which problem you faced…… Thank you.