Socio-cultural factors associated with morbidity and mortality: A study from Eastern Nepal

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Abstract

Background: Today there has been a change in the perception of disease from germ theory to the involvement of multiple factors in the causation. **Methods:** With this notion, this cross sectional study made an effort to delineate the socio-cultural factors associated with health in six teaching districts of B.P. Koirala Institute of Health Sciences in the Eastern region of Nepal among the mothers of reproductive age surveying 1985 households. **Results:** This study revealed association of chronic disease and acute illness with various socio-demographic variables like religion, ethnicity, family size, number of children, respondent's literacy and occupation. Number of jobholders in the family and poverty line were found to be associated with acute illness. Treatment of shaman healers and restrictions during pregnancy period showed association with health inequalities. Mortality in the family was associated with ethnicity, number of children, and literacy of respondent. **Conclusion:** As a consequence of these associated factors, the effective utilization of the modern health facilities may not be proper which may lead to ill health consequences. Multi-faceted development program from the government along with effective awareness program can help out the people to combat the evil of health life.

Keywords: Disease, Morbidity, socio-culturtal factors.

Introduction

Health relates to everything that determines the living. It is an expression of conditions like physical, genetic, chemical, environmental, cultural, economic, psychosocial, mental, intellectual, and spiritual conditions of human life. As defined by WHO, 'Health is a state of physical, mental and social wellbeing and not merely the absence of disease or infirmity.'[1] This holistic approach in this regard is very true and relevant to achieve the health of the people because the modern medical services are not sufficient to bring the equilibrium between human's external and internal environment so as to gain a good health.

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Nepal being a multi ethnic society, it is no surprise that the various groups have their own concepts of disease, various methods of warding off and also for dealing with illness.[2] Social and cultural factors have important influence on many aspects of people's life including attitudes to illness, pain and other forms of misfortunes; all of which may have important implications for health and health care. Cultural factors can be causal, contributory, or protective in their relation to ill-health.[3] 'Culture is that complex whole which includes knowledge, arts, laws, morals, beliefs, religion, attitudes habits, customs, traditions, ways of thinking and behaving and other capabilities and experiences acquired by the people as a member of the society-E.B.Tylor'.[4] It influences how people link with the health system, their access to health information and their lifestyles.

The greatest share of health problems is attributable to the social conditions in which people live and work, referred to as the social determinants of health. Without action on social determinants, those countries in greatest need will neither meet the health-related Millennium Development Goals nor achieve global targets for reducing chronic diseases such as cardiovascular diseases, cancer, and diabetes.[5]

Society and culture determines what kind of health problems are considered worthy of attention. If the recommendation of health care providers is too far removed from normal cultural practices in a given situation, the patient is unlikely to comply with those recommendations.[6]

The last few decades have shown that social and economic and cultural factors have as much influence on health as medical interventions. All these factors have direct bearing on the incidence, course, and outcome of wide variety of communicable and non-communicable diseases as well as on many other health problems besetting the world today.[7]

The Holistic management of health care is the best option to tackle the health problems in today's world because it is cost-effective and sustainable. It addresses issues of equity and social justice and it keeps all the viable options open. The objective of study was to explore the different socio-cultural facets of community which influences the health and to assess the general health conditions of the people in the Eastern Nepal.

Methods

The study design was cross sectional and conducted in six teaching districts of B.P. Koirala Institute of Health Sciences (BPKIHS) in Eastern Nepal from July 2007 to December 2007. The area includes two hill districts namely Ilam and Dhankuta and four Terai districts namely Jhapa, Morang, Sunsari, and Saptari. This area has been selected for research study corresponding to one of the BPKIHS objectives of conducting health researches in pursuit of

revealing the cause of health problems in Eastern Nepal. The study population was the mothers of the rural villages of Eastern Nepal. The study unit was house hold with female members having at least one child below the age of five years. Given the birth giving role, they are directly vulnerable to many risks and they are the one who directly gets involved when some problems occur in the family including health. Therefore their knowledge can be almost taken as a standard as of the family in terms of health and other social matters. The sample size was primarily set at 2,000 households in 100 compact clusters of various Village Development Committees (VDCs) of Eastern Nepal. The size of each cluster was 20 households. The clusters were distributed in the districts with probability proportionate to size. The number of clusters per district varied according to the number of households in the district. Only 1985 samples were considered for analysis due to non response covering 10432 populations. Face to face interview was done with each mother from the household with trained enumerators. The pre-tested questionnaire with both open-ended and close-ended questions was used in this study. The content validity was checked conducting survey on 10% of the population taken from outside of the study area.

The enumerators were trained supervised and monitored during the data collection by the faculty members of School of Public health and community Medicine in their respective districts so as to ensure the reliability and validity of the data. Principal investigator and co-investigators were also involved in supervision and monitoring during the field activities in all the districts. Variables like Socio-demographic, economic, health beliefs were analyzed with morbidities and mortality among the respondents and their families. The data was entered into the computer by Microsoft EXCEL by trained data entry person. The data was screened and filtered by statistician and the purified data was analyzed by means of SPSS 11.0 version. Non-parametric statistical techniques were applied to the data to interpret the findings. Verbal consent was taken from each participating individual in this study prior to interview. The ethical clearance was obtained from the ethical committee of BPKIHS.

Results

Acute illness

Figure 1 shows around 23% of the respondents and 24% of their family members were suffering from acute illness during that period. Water borne disease like diarrhea, typhoid and jaundice were common illness after fever.

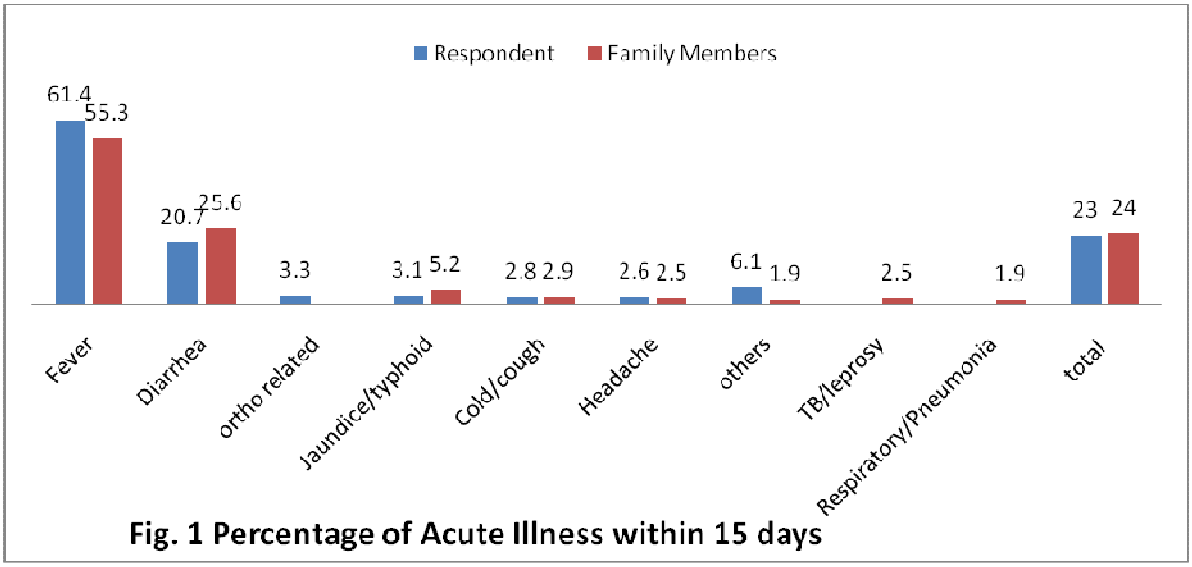

Fig. 1 Percentage of Acute Illness within 15 days

Chronic illness

The burden of chronic illness in fig. 2 revealed that 15% among respondents and around 19% among their family members were suffering from some kind of long-term illnesses. Various pain and disorders related to Musculoskeletal system were common. Metabolic diseases like cardiovascular/hypertension and diabetes were found to be common among both respondents and their family members.

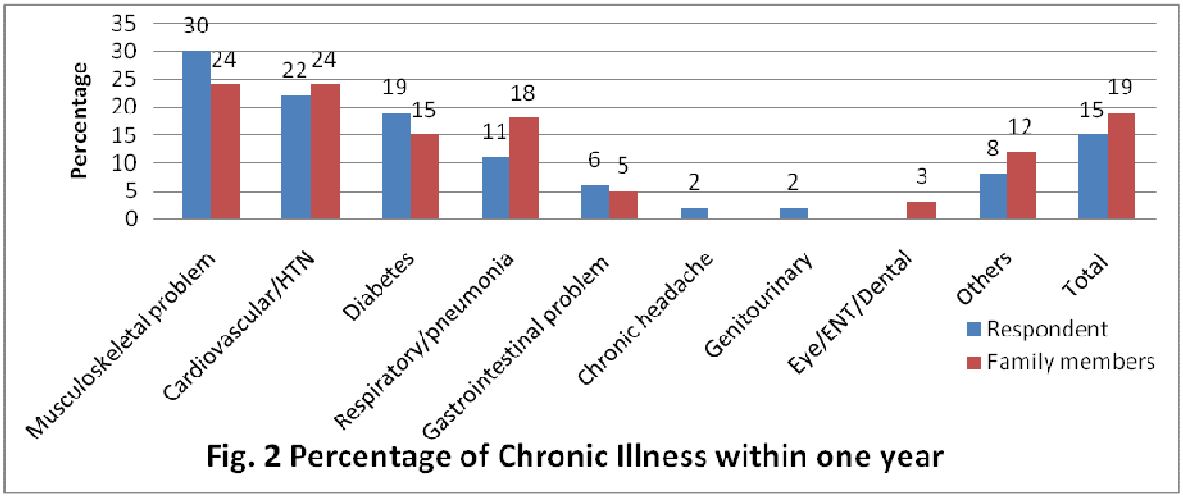

Fig. 2 Percentage of Chronic Illness within one year

Mortality

There were total of 141 cases of death in families during the past one year. The crude death rate was calculated 13.5 per 1000 population. Half of the death accounted to the people above the age 60 years and almost 22 percent belonged to children with 11.3 percent death coming from infants.

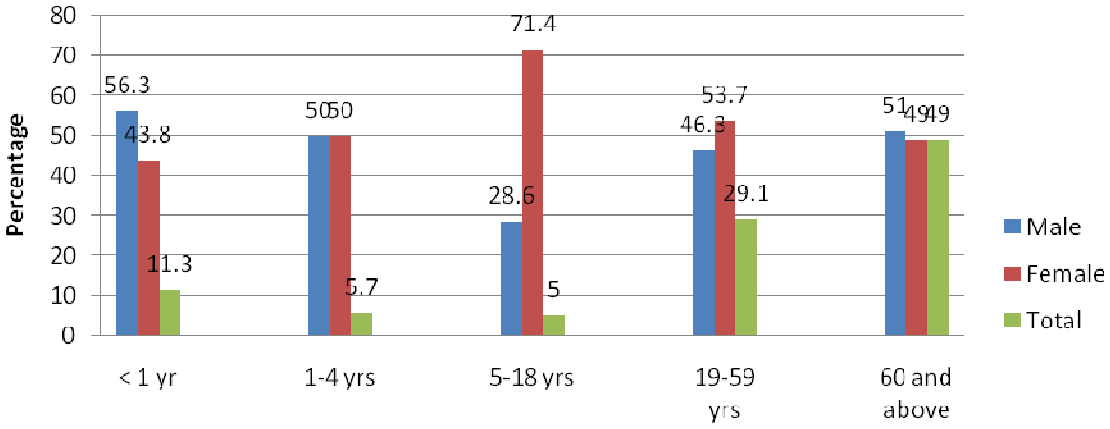

Fig 3. Mortality within Family Members in the past 12 months (N=141)

The possible reason of death was relied on the participants' response where more than 26% said old age (normal death due to increasing age) as the biggest cause and one out of five people had died related to non-specific diseases (unknown cause). This was followed by respiratory related diseases (19.1%). Almost 10% was attributed to cancer related diseases and complications. (Fig. 4)

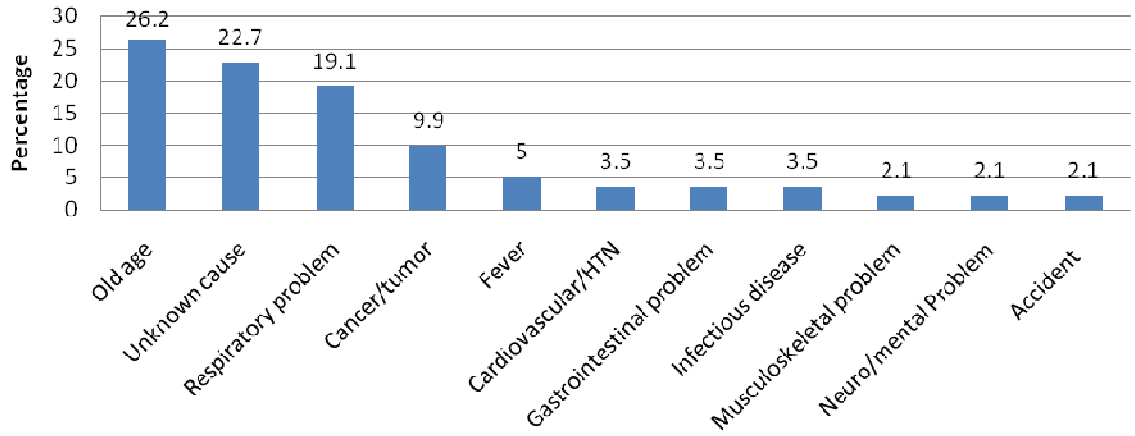

Fig. 4 Possible Reasons for death in the family (N=141)

Almost all the socio-cultural variables (Table 1 and 2) showed significant relationship with health condition of people measured in terms of acute and chronic illness and mortality (excluding normal

deaths due to old age as relied on respondents' response)

Among the respondents, acute illness showed strong relationship ($p<0.01$) with religion, ethnicity, restriction during pregnancy, and number job holders and significant association (($p<0.05$) with literacy, occupation and poverty line. Among the family members, acute illness was strongly associated ($p<0.01$) with ethnicity, family size literacy, restriction during pregnancy, number of job holders and poverty line and significantly associated ($p<0.05$) with religion, number of child and respondent's occupation.

The chronic illness among the women were strongly associated ($p<0.01$) with ethnicity, family size, and visit to shamans and significantly ($p<0.05$) related to number of child, restriction during pregnancy and occupation. Among the family members of these women, chronic illness showed strong relationship ($p<0.01$) with religion, ethnicity, family size, shaman visit and occupation and significantly ($p<0.05$) associated with restriction during pregnancy. The mortality analysis showed strong relationship ($p<0.01$) with ethnicity, number of child and occupation and significant ($p<0.05$) relationship with literacy.

Table 1: Socio-demographic variables with overall morbidity and mortality

SN	Characteristics (N=1985)	N	Respondent		Family		Overall illness		Death in the family (N=1948)
			Acute	Chronic	Acute	Chronic	Resp.	Family	
1.	Religion		**	**NS**	*	**	**	**	#
	Hindu	182	23.0	14.9	24.7	18.5	32.5	36.4	5.1
	Kirat	8	15.4	7.7	7.7	5.1	20.5	12.8	2.6
	Muslim	39	46.9	22.4	28.6	44.9	61.2	61.2	6.3
	Christian	49	17.6	23.5	23.5	11.8	29.4	35.3	11.8
	Buddhist	34	5.7	8.6	11.4	20.0	14.3	25.7	0.0
		35							
2.	Ethnicity		**	**	**	**	**	**	**
	Brahmin/Chhetri	390	20.0	15.1	20.3	23.6	26.2	33.8	2.3
	Janajati	324	16.0	12.0	14.8	16.7	21.9	25.6	5.6
	Indigenous	394	27.4	12.9	23.9	14.0	36.0	32.0	3.0
	(Terai)	369	21.4	12.5	23.3	14.6	31.2	32.8	7.9
	Dalit (hill	508	27.8	20.1	34.3	23.4	42.9	51.2	6.3
	&Terai)								

	Terai Major Caste								
3.	Family Size		**NS**	**	**	**	**	**	**NS**
	Up to 5	124	21.8	11.4	20.5	16.5	28.7	31.2	4.7
	6-10	1	24.9	20.4	29.4	22.1	38.9	44.1	6.3
	11 and above	714	30.0	30.0	56.7	36.7	46.7	66.7	3.3
		30							
4.	No. of Child (N=1979)		**NS**	*	*	**NS**	*	*	**
	1-2	135	22.8	13.6	22.8	18.4	31.2	34.8	3.7
	3-4	0	23.2	17.3	26.8	18.9	34.9	38.8	8.3
	5 and above	578	29.4	25.5	33.3	31.4	47.1	52.9	8.2
		51							
5.	Literacy		*	**NS**	**	**NS**	**	**	*
	Illiterate	817	25.5	16.5	28.5	19.8	37.8	42.1	6.4
	Literate	1168	21.4	13.9	21.2	18.2	29.0	32.4	4.2
6.	Visit to Shamans		**NS**	**	**NS**	**	**NS**	**	**NS**
	Yes	1231	24.4	18.3	26.5	26.5	34.9	41.4	6.1
	No	754	22.3	12.9	22.8	14.1	31.3	33.3	4.4
7.	Restriction in Pregnancy		**	*	**	*	**	**NS**	**NS**
	No restrictions	176	21.5	15.6	23.0	19.6	31.5	35.8	7.2
	Socio-religious	6	36.5	9.6	34.2	12.8	41.6	40.6	4.6
	Restriction	219							

The number in the cells denote percentages of morbidity and mortality (yes option) of every individual row categories.

*P Value <0.05, ** P value <0.01, NS: Not significant, # Chi-Square not applicable due to less cell value.

Table 2: Economic activities of the household with morbidity and mortality

SN	Characteristics	Frequency in each row	Respondent		Family		Overall Illness		Death in the family (N=1948)
			Acute	Chronic	Acute	Chronic	Respondent	Family	
1.	Respondent's Occupation (N=1985)		*	*	*	**	**NS**	**	**
	Agriculture	823	21.9	15.8	23.1	17.5	32.1	34.6	5.4
	Housewife	423	25.8	17.0	29.6	24.3	37.6	45.4	6.5
	Service	135	17.8	14.8	18.5	23.7	25.2	31.9	3.8
	Business	100	17.0	17.0	23.0	14.0	29.0	32.0	2.0
	Skill labourer	107	15.0	14.0	19.6	19.6	26.2	37.4	1.9
	Unskilled labourer	381	28.3	10.0	23.9	14.2	33.6	31.8	4.5
	Professionals (teacher/dctor/nurse)	16	25.0	31.3	37.5	37.5	37.5	56.3	25.0
2.	No. of Jobholders (N=1985)		**	**NS**	**	**NS**	**	**	**NS**
	No Job Holders	726	27.3	13.5	29.3	17.5	37.1	41.2	4.8
	1-2 Job holders	1137	20.8	16.0	21.3	19.9	30.0	33.6	5.2
	3-4 job holders	122	19.7	13.9	21.3	17.2	27.9	33.6	6.6
3.	Poverty line (N=1977)		*	**NS**	**	**NS**	**	**	**NS**
	<=1.25$	1855	23.8	15.3	25.1	19.0	33.7	37.4	5.2
	>1.25$	122	13.9	10.7	12.3	17.2	18.9	23.0	4.1

The number in the cells denote percentages of morbidity and mortality (yes option) of every individual row categories.

*P Value <0.05, ** P value <0.01, NS: Not significant, # Chi-Square not applicable due to less cell value

Discussion

One in five people were suffering from acute illness among the women and their family member as well with prominence of fever and water borne diseases. Burden of chronic disease was 15% in women and 19% among their family members with Musculoskeletal and metabolic diseases in the top list. Annual health report 2069/2070 B. S. (2012/2013 AD) records somewhat similar trends of diseases where respiratory tract infections 9.7%, water borne diseases around 8,5% and Gastritis (APD) 5.8% were among the top reasons of outpatient consultation in Nepal.[8] The finding of crude death rate of 13.5 per 1000 in this study was higher than the National data which is 8.0 per 1000 population, though the rate of infant mortality (19 per 1000 live births) in the preceding year was less than National Data of 2011(48 per 1000). Nepal has been able to reduce the faster decline in infant and child mortality during last 10 years, and if it continues then there is a good chance to meet the target for the expectation of life at birth for the year 2015.[9]

WHO in a report on 'Closing the gap in a generation: Health equity through action on the social determinants of health' has mentioned that 'Gender, education, occupation, income, ethnicity, and place of residence are all closely linked to people's access to, experiences of, and benefits from health care which affect the development status of a nation.[10] Various social factors in this study too were found to be associated with the health condition of the people, though may me causal and contributory if not causal.

Religion and ethnicity

Durkheim defines religion as 'unified system of beliefs and practices relative to sacred things'[4] which plays pivotal role of informal social control. Sociologist A.W. Green, explains caste as system of stratification where mobility up and down the status ladder, at least ideally may not occur.[4] Social determinants of disease can be attributed to broad social forces such as racism, gender inequality, poverty, violence, and war.[11] Our study trace the relationship of religion and health Muslim women who are often taken as vulnerable among vulnerable were having highest burden of both chronic and acute illness. Muslims in Nepal falls under disadvantaged ethnic group revealing same situation in health status also as compared to other groups (Table1). Similarly, Terai women as well as their family members had higher burden of diseases but the female and their families from 'Janajaties' had least burden of diseases. One among various reasons

could be explained by comparatively better social status and less restriction on these hilly 'Janajati' women as compared to strictly traditional ethnicities of Terai. The fact and figures that people of African-American origin in affluent cities of US have lower life expectancy at birth than the people of poorer countries like China and India relatively supports the determining role of ethnicity in health.[12]

If not causal, ethnicity could be contributory in determining health. Being from particular caste/ethnic group or race can serve determining factor for other facets of like income, education, marital status which could in turn impact health. This was supported by a study which showed black individuals in South Africa suffer worse morbidity and mortality due to limited access to social resources.[12] According to Loppie and Wien, burden of various chronic and acute illness stemming out of poverty affect mostly outlying groups such as women, children, ethnic minorities, and the disabled.[13]

Family size

The size of family depends upon the number of children primarily. WHO report says social determinants of health, like child development is of special importance to the impoverished[10] and maintaining child health is possible mostly in small family where attention could be given to each individual rather than larger family with more children. This was exhibited in our study where the women having big family size (more than 6 members) and more children (More than 2) showed the tendency of having higher chronic diseases same was the case with their family members.

Education

Education has a lasting, continuous, and increasing effect on health,[10] and it determines other factors of livelihood like occupation and income which determines health outcomes.[14] This study also showed significant relationship of education on health, where illiterate women and their family members were associated with acute illness. Educational attainment is related to improved health outcomes, due to its effect on income, employment, and living conditions thereby acts as major determinant of health. (Ross & Wu, 1995; Cutler & Lleras-Muney, 2006; Bloom, 2007).[10] Similar inference is made by US Department of health and human where they reported that social resources, such as education, determine life expectancy and infant mortality, which measures health.[15]

The role of education of mother in child care and health is signified by the U.S. study which reveals children born to more educated mothers were less likely to die in infancy and more likely to have higher birth weights and be immunized.[16] The lack of education produces ripple effect among the marginalized population which reduces opportunities, limits choices, undermine hope, and, as a result, threaten health as

reported in study done in aboriginal people.[13]

Occupation and economic Status

Acute illness was found more among the women who were unskilled labourers where as chronic illness was common among women having professional jobs. Family members of women involved in professional jobs were more vulnerable to chronic diseases in our study. This was slightly different in the report of WHO which makes inferences poor workers are more likely to be affected health outcomes due to various consequential conditions created by poor working conditions.[10] The low health status of the family of women with professional jobs could be attributed to less care and attention given by women to family members and children due to lack of time. Women in Nepalese society plays key role in taking care of every family members regarding requirements including food and other needs. The lack of maintenance of this role at home could hamper the health of family members.

The number of working members in the family made differences in the status of health in this study as well. Diseases burden of acute illness and overall illness was observed higher among the women and their family members having no jobholding members. Inequalities in health stem from the conditions of people's lives, including living conditions, work environment, age, and other social factors, and how these affect people's ability to respond to illness.[10,13] Poverty has been linked to increased risk of chronic disease, injury, deprived infant development, stress, anxiety, depression and premature death.[13] The role of poverty in health is further explained by Martha C Ward where she mentions that sixty percent of children born into poor families have at least one chronic disease,[17] and women facing financial difficulty are more likely to report chronic conditions of health.[18] This role of poverty in disease was established in our study too where overall disease was more among the women and her family members living below the poverty line marked by earning less than $1.25 per day. Women weaker health condition related to financial constraints was further explained by a study done in India where poorer health and lower health care utilization was noted among older women having differences in socioeconomic status and resulting financial disempowerment as compared to men.[19]

Beliefs and norms

The study elaborates the risk of people getting sick with the utilization of service of spiritual healers on whom people have immense faith. Though various scholars has mentioned faith healers of Nepal known by ‘dhami’ and ‘jhankri’ locally as best suitable specialists who can care the locals’ major ailment,[2] our study showed shamans visit was significantly associated with

chronic illness among both respondent and family members and overall illness in the family. The impact of culture norms and beliefs on the productive and reproductive life of women in explained in the study done by Moss, that determines health.[20]

The stressors like risky health behavior, social exclusion, women's low position in society can cause physiological alterations like increased cortisol, changed blood pressure, and reduced immunity which increases their risks for poor health.[15] Similar stressor in this study as restrictions during pregnancy showed higher proportion of acute illness but chronic illness was observed more with women having no restrictions. This reason of chronic disease being higher with women with no restriction could be due to interplay of various other inseparable factors.

Mortality

We assessed the relationship of mortality in the family with socio-demographic variables, where the death due to old age or normal death was excluded. In this analysis we found that proportion of death in the family was higher among illiterates, dalilts (under privileged castes), having more number of children in the family and respondent's occupation as professionals jobs like teachers. Similar findings was observed in a report by Moss which concludes socioeconomic factors such as education, income inequality, and occupation, represent the strongest and most consistent predictors of health and mortality.[20] This was consistent with the findings of a study which inferred poverty, education and other social determinants of health are strongly linked to inequities in health among SEAR countries and within socio-economic subgroups.[21] The South East Asian Region countries account for the highest proportion of global mortality (26%) and exceeds the global average annual mortality rate for all three broad cause groupings-communicable, maternal, peri-natal and nutritional conditions.[21] The relationship of education with mortality is similarly explained by the study done in Sri Lanka where the decline in under five mortality was linked with rise in education,[22] in Bolivia where babies born to women with no education have infant mortality greater than the infant mortality rate of babies born to mothers with at least secondary education[10] and Ward's report mentioning poor women having more heart disease, diabetes, cancer, and infant mortality.[17] The relationship of poverty and mortality could not be established in this study. The possible reason could be not segregation of mortality on the basis of age group, instead, it is reported for all age group.

Study done on adult mortality on India makes conclusion that Wealth and educational composition of households, is key factors influencing adult mortality, and social factors, religion and family structure have an impact on adult mortality though

but there is no clear relationship between caste and the premature death of adults. [23]

Conclusion

The status of women is poor in terms of literacy, occupation, and income. The role of Income, wealth, occupation, number of jobholders was evident in this study with respect to acute and chronic conditions of health of the respondents and their family members but the association of mortality among the family members was only observed with ethnicity, children number and occupation of the women. The restriction and norms related behavior and utilization of shamanistic services also had significant association in the health status of women and their family members.

Very strong need of local government (Development committees, both village and district) to coordinate with public health office and NGOs and INGOs to ponder over problems which is multifaceted and take sharp actions in making provision for enhancement of basic needs of the people in the region in priority if holistic health has to be attained.

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