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Early Marriage, Smoking Habit, and Maternal Malnutrition: A Case of Azad Jammu & Kashmir

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ABSTRACT

A mother's nutritional state affects her own health, the health of her children, and eventually the standard of a country's human resources. The current study's goal is to find out how smoking and early marriage affect maternal BMI in Pakistan's Azad Jammu & Kashmir region. The Pakistan Demographic and Health Survey's 2017–18 data were used in this investigation. The DHS's most recent poll included married women aged 15 to 49. Using binary logistic multivariate analysis, it is possible to determine which women's nutritional state is influenced by their early marriage and smoking habits. The association between age and body mass index is favorable. In the Pakistani AJ&K region, women's nutritional status is largely influenced by their age. In Pakistan, smoking has a negative correlation with women's nutritional status. The high fertility rate and the widespread taboo against early marriage are all factors that contribute to women's chronic energy deficiencies and malnourishment. The construction of rehabilitation clinics for women who smoke, the promotion of health services for women, the expansion of women's education, particularly in rural regions, and the condemnation of young marriages could all help improve the nutritional status of women.

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1. Introduction

Better nutrition for women is necessary to handle the physiological change in their body such as pregnancy and menstruation (Daba, Beyene, Garoma, & Fekadu, 2013). Poor nutritional status is directly related to poor birth outcomes. Nutritional status of the women is determined by many socioeconomic and demographic factors across the world (Villar et al., 2003) Maternal nutrition plays a crucial role in influencing fetal growth and birth outcomes (Abu-Saad & Fraser, 2010). In Pakistan, nearly 5% of women age 15-49 are short (less than 145 cm), and 9% are underweight (BMI less than 18.5). More than half of the women (52%) are overweight or obese (BMI greater than or equal to 25.0(PDHS, 2017-18). Hunger and malnutrition are devastating problems, particularly for the poor and unprivileged (MOPED, 1999). Pakistan has a population of 180 million people and it is on the sixth position in the most populated countries of the world, by 2050 the number of Pakistan would be forth one in the rank highest (UNICEF, 2013).

The youngest and oldest age group women are malnourished (Teller & Yimer, 2000).Unnourished women are between the age of 15-24 years old (Daba et al., 2013).There is a positive relationship between maternal nutritional status and age (Di Cesare, Bhatti, et al. 2015) Most of the underweight women are teenager (Kamal & Islam, 2010). In Jammu region

nutritional deficiency is high as compare to Kashmir region (Khan & Khan, 2012). Low mean birth weight and increased risk of premature infants and poor nutritional status of the women are some major consequences of smoking there is a difference between the diet of the smoker women and the non-smoker women. Smoker women are at high risk of oxidative tissue damage; this tissue plays an important role in the detoxification of the body. A poor diet and smoking can easily affect the detoxification of the body. The woman who is young and smoke frequently has less consumption of proper antioxidant micro nutrients and it will affect the nutritional status of the women (Mathews, Yudkin, Smith, & Neil, 2000). Maternal exposure to smoking has bad impact on the nutrients and the oxygen availability to the fetus. In contrast to those women who are non-smoker, the risk of premature birth is high in smoker women (Knight-Agarwal, Mellor, Georgousopoulos, Krause, & Coglan, 2020).

Household economic status matters a lot in the nourishment of the women. Women who are the resident of wealthiest home do not face malnourishment (Di Cesare et al., 2015). Education can enrich a women with a knowledge of proper nutrients intake (Girma & Genebo, 2002).The data of different regions of Pakistan shows that body mass index of the women different across the country like the household of Mirpur and Lahore is proved to be well-nourished (Di Cesare et al., 2015). There is the need of Anthropometric method for the evaluation of nutritional status of the society and the individuals (Asfaw, Argaw, & Kefene, 2015). There is a positive relationship between knowledge and education about proper nutrients and the nutritional status of the women (Daba et al., 2013).

The women who have large land size is more likely to establish a moderate nutritional status (Haileslassie, Mulugeta, & Girma, 2013). Financial constraints are there for the healthy diet of the women, the participants who are receiving all financial assistance from the government have a higher chance to get food according to her choice(Dammann & Smith, 2009).Poverty is the main reason for the Lower Body Mass index(Müller & Krawinkel, 2005).The deficiency of micronutrients in population is directly related to the economic condition of the population.(Kamal & Islam, 2010). Anemia is prevalent in the urban area of Pakistan and represents poor nutritional status (Baig-Ansari et al., 2008). The women of the rural area have a higher chance to get chronic energy deficiency(Teller & Yimer, 2000).

Undernutrition has devastating effects on people's health, but it also has monetary repercussions because of how common it is; when people are undernourished, they are less productive, which in turn keeps them in poverty. This is true both directly, because of their poor physical health, and indirectly, because of their impaired cognitive function and learning disabilities. (The World Bank, 2006). By presenting a background and identifying potential socioeconomic factors causing poor maternal BMI, the current study has formulated the following research hypotheses for investigation.

- Mother with a habit of smoking has poor nutritional status as compared to a mother not smoking
- Women’s lower age at the time of marriage is negatively associated with better nutritional outcomes and vice versa
- Mother’s belongingness to a financially well-off household is associated with better nutritional outcomes and vice versa

2. Methodology

Maternal nutrition is the main outcome variable measured by calculating their BMI calculated by dividing weight in kilograms by height in meters squared (kg/m^2). In most of the researches, the women who have body mass index below 18.5 are considered as malnourished (Rotimi et al., 1999).

Table 1

Status	BMI
underweight	Less than 18.5
Normal	Between 18.5 and 24.9
overweight	Between 25.0 and 29.9
obese	Greater than and equal to 30.0

The malnourishment is calculating by body mass index in an number of studies (Di Cesare et al., 2015; Haileslassie et al., 2013; Kamal & Islam, 2010; Pryer, Rogers, & Rahman, 2003). The body weight measured in kilograms is divided by the square of the person's height (measured in meters). The 2017–18 Pakistan Demographic and Health Survey was the source of data used in this study. The study's participants include women from all across the nation who have ever been married and are in the age bracket of 18 to 45. Using a multivariate analysis, the factors that contribute to women's body mass index have been identified. It has been determined using binary logistic regression whether the ladies are undernourished or not. If the woman is undernourished, the dependent variable is written as 1, and if she is not, it is entered as 0.

3. Results and Discussion

3.1. Descriptive Statistics

According to table in the region of Azad Jammu and Kashmir, out of total sample 15% women belongs to poorest household, 28% from the poorer household, 29 % from middle income group, 16% from the richer household and 13% belong to the richest household. The resident of urban areas is 41% of the total sample and 59% belong to the rural areas of Azad Jammu and Kashmir. The proportion of non-smoker women is 94% in Azad Jammu and Kashmir that is higher than that of smoking status which is 6%. 74% out of 288 households are dominated by male of the houses however only 26% females are heading their household so due to the traditional variations males are dominating regarding the decision making power about the nutritional status of the women. The women who are financially independent has lower per portion as compare to the women who are working professionally 87% and 13% respectively. Overall in the region of Azad Jammu and Kashmir most the women who are belong to rural areas are supposed to be underweight and those household where males are decision makers the women of those household proved to be malnourished.

Table 2: Descriptive Statistics and Distribution of the Variables

Variables	Categories	Counts
Wealth index combined	Poorest	45
	Poorer	81
	Middle	83
	Richer	44
	Richest	35
Type of place of residence	Urban	119
	Rural	169
Respondent's Smoking Status	not smoking	269
	smoking in any form	19
Sex of household head	Male	214
	Female	74
Respondent's Work Status	not working	253
	working	35
Maternal Malnutrition: BMI Categories (Outcome Variable)	Normal weight	247
	Underweight	41
Total		288

3.2. Early Marriage, Smoking Habit, and Maternal BMI in AJ&K: BL Regression Estimates

The table presents the results of a binary logistic regression analysis for early marriage, smoking habit, and incidence of maternal malnutrition in the context of Azad Jammu & Kashmir. The analysis aims to understand the associations between several independent variables and the binary outcome variable, which is maternal malnutrition (Yes = 1, No = 0). According to the findings, a one-unit increase in respondent's age is associated with a decrease in the odds of experiencing maternal malnutrition by a factor of 0.939. This relationship is statistically significant ($p = 0.015$), suggesting that older respondents are less likely to experience maternal malnutrition. In this regard, the findings of the current study are in line with that of the research outcomes from some other studies (Daba et al., 2013; Di Cesare et al., 2015; Kamal & Islam, 2010; Khan & Khan, 2012). There is a positive but non-significant association between the respondent's educational status and maternal malnutrition ($p = 0.157$). The odds of experiencing maternal malnutrition increase by a factor of 1.068 for each unit increase in educational status. Being a non-smoker (smoker is the reference category) is associated with significantly lower odds of experiencing maternal malnutrition, with an odds ratio of 0.178 ($p = 0.004$).

Table 3: BL Regression Estimates

Variables	B	S.E.	Wald	df	Sig.	Exp(B)
Respondent's Age	-0.062	0.026	5.898	1	0.015	0.939
Respondent's Educational Status	0.066	0.047	2.007	1	0.157	1.068
Respondent's Work Status as Non-working (Working as RC)	0.093	0.616	0.023	1	0.88	1.097
Respondent's Smoking Status as Non-smoker (Smoker as RC)	-1.726	0.604	8.167	1	0.004	0.178
Gender of the Household Head as Male (Female as RC)	-0.349	0.4	0.761	1	0.383	0.706
Household Welfare (the Richest as RC)			1.475	4	0.831	
Poorest	0.496	0.854	0.338	1	0.561	1.642
Poorer	0.251	0.745	0.113	1	0.737	1.285
Middle	0.569	0.669	0.722	1	0.395	1.766
Richer	0.004	0.76	0	1	0.996	1.004
Place of Residence as Urban (Rural as RC)	-0.57	0.39	2.137	1	0.144	0.566
Constant	1.296	1.533	0.715	1	0.398	3.655
Model Summary						
-2 Log likelihood	216.544					
Cox & Snell R Square	0.064					
Nagelkerke R Square	0.115					
N	288					
Outcome Variable	Maternal Malnutrition (Yes = 1, No = 0)					

This indicates that non-smoking mothers are less likely to experience maternal malnutrition compared to smokers. In this regard, the findings of the current study are in line with that of the research outcomes from (Knight-Agarwal et al., 2020) and (Mathews et al., 2000). The gender of the household head is not statistically significant ($p = 0.383$) in relation to maternal malnutrition. The different levels of household welfare (poorest, poorer, middle, richer) are not statistically significant in relation to maternal malnutrition. The place of residence, as urban (with rural as the reference category), is not statistically significant ($p = 0.144$) in relation to maternal malnutrition. The model's goodness of fit is assessed through -2 Log likelihood, Cox & Snell R Square, and Nagelkerke R Square. The Nagelkerke R Square is 0.115, suggesting that the model explains about 11.5% of the variance in maternal malnutrition.

4. Conclusion and Policy Suggestions

According to the findings of the binary logistic regression, the presence of maternal malnutrition is associated with both the aged mother and the smoking status of the mother. The likelihood of experiencing maternal malnutrition is lower among respondents who are older, and the likelihood of experiencing it is much lower among those who do not smoke. The presence of maternal malnutrition is not significantly associated with other factors, such as the educational level of the mother, the employment status of the mother, the gender of the household head, the welfare of the household, or the place of residence. As a result of the considerable correlation between smoking status and lower risks of maternal malnutrition, it is of the utmost importance to maintain or intensify anti-smoking initiatives that are directed against women of childbearing age. It may be good to place an emphasis on maternal health and nutrition education and interventions, particularly for younger women who are at a greater risk of malnutrition.

Only a portion of the variation in maternal malnutrition can be explained by the model that is currently being used. In order to get a deeper comprehension of the factors that determine this matter, additional research and data collection are required. Age and smoking status are key characteristics that are connected with maternal malnutrition, and policymakers should take into consideration the possibility of tailoring treatments based on these parameters. highlight that these findings are based on statistical associations; further inquiry and qualitative research may be required to determine the specific nature and causes of maternal malnutrition in Azad Jammu

and Kashmir. Furthermore, it is important to highlight that these findings are based on statistical associations.

References

Abu-Saad, K., & Fraser, D. (2010). Maternal nutrition and birth outcomes. *Epidemiologic reviews, 32*(1), 5-25.

Asfaw, M. M., Argaw, M. D., & Kefene, Z. K. (2015). Factors associated with exclusive breastfeeding practices in Debre Berhan District, Central Ethiopia: a cross sectional community based study. *International breastfeeding journal, 10*(1), 23.

Baig-Ansari, N., Badruddin, S. H., Karmaliani, R., Harris, H., Jehan, I., Pasha, O., . . . Goldenberg, R. L. (2008). Anemia prevalence and risk factors in pregnant women in an urban area of Pakistan. *Food and nutrition bulletin, 29*(2), 132-139.

Daba, G., Beyene, F., Garoma, W., & Fekadu, H. (2013). Assessment of nutritional practices of pregnant mothers on maternal nutrition and associated factors in Guto Gida Woreda, East Wollega Zone, Ethiopia. *Science, Technology and Arts Research Journal, 2*(3), 105-113.

Dammann, K. W., & Smith, C. (2009). Factors affecting low-income women's food choices and the perceived impact of dietary intake and socioeconomic status on their health and weight. *Journal of nutrition education and behavior, 41*(4), 242-253.

Di Cesare, M., Bhatti, Z., Soofi, S. B., Fortunato, L., Ezzati, M., & Bhutta, Z. A. (2015). Geographical and socioeconomic inequalities in women and children's nutritional status in Pakistan in 2011: an analysis of data from a nationally representative survey. *The Lancet Global Health, 3*(4), e229-e239.

Girma, W., & Genebo, T. (2002). Determinants of nutritional status of women and children in Ethiopia.

Haileslassie, K., Mulugeta, A., & Girma, M. (2013). Feeding practices, nutritional status and associated factors of lactating women in Samre Woreda, South Eastern Zone of Tigray, Ethiopia. *Nutrition journal, 12*(1), 28.

Kamal, S., & Islam, A. (2010). Socio-economic Correlates of Malnutrition among Married Women in Bangladesh. *Malaysian journal of nutrition, 16*(3).

Khan, Y. M., & Khan, A. (2012). A Study on factors influencing the Nutritional Status of Lactating Women in Jammu, Kashmir and Ladakh Regions. *International Journal of Advancements in Research & Technology, 1*(4), 65-74.

Knight-Agarwal, C., Mellor, D., Georgousopoulos, E., Krause, B., & Coglan, S. (2020). Maternal body mass index, smoking status and small for gestational age: an Australian retrospective cohort study. *Public Health, 185*, 381-385.

Mathews, F., Yudkin, P., Smith, R. F., & Neil, A. (2000). Nutrient intakes during pregnancy: the influence of smoking status and age. *Journal of Epidemiology & Community Health, 54*(1), 17-23.

Müller, O., & Krawinkel, M. (2005). Malnutrition and health in developing countries. *Cmaj, 173*(3), 279-286.

PDHS. (2017-18). *PAKISTANmDEMOGRAPHIC AND HEALTH SURVEY 2017-18, National Institute of Population Studies Islamabad, Pakistan*. Retrieved from

Pryer, J. A., Rogers, S., & Rahman, A. (2003). Factors affecting nutritional status in female adults in Dhaka slums, Bangladesh. *Social biology, 50*(3-4), 259-269.

Rotimi, C., Okosun, I., Johnson, L., Owoaje, E., Lawoyin, T., Asuzu, M., . . . Cooper, R. (1999). The distribution and mortality impact of chronic energy deficiency among adult Nigerian men and women. *European journal of clinical nutrition, 53*(9), 734.

Teller, C. H., & Yimer, G. (2000). Levels and determinants of malnutrition in adolescent and adult women in Southern Ethiopia. *Ethiopian Journal of Health Development, 14*(1), 57-66.

Tranmer, M., & Elliot, M. (2008). Binary logistic regression. *Cathie Marsh for census and survey research, paper, 20*.

Villar, J., Merialdi, M., Gulmezoglu, A. M., Abalos, E., Carroli, G., Kulier, R., & de Onis, M. (2003). Nutritional interventions during pregnancy for the prevention or treatment of maternal morbidity and preterm delivery: an overview of randomized controlled trials. *The Journal of nutrition, 133*(5), 1606S-1625S.