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Original Research Article

Knowledge, Attitudes, and Practices Toward Healthy Diet Among Reproductive Age Women in a Rural Lahore Community

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Abstract: *Women of reproductive age are particularly vulnerable to the consequences of poor nutrition, which can adversely impact both maternal and child health. Limited access to nutritional information and resources, especially in rural communities, increases the risk of deficiencies. Understanding knowledge, attitudes, and practices (KAP) regarding healthy diets among this population is essential for designing culturally appropriate interventions.* ***Objective:*** *To assess the knowledge, attitudes, and practices toward a healthy diet among reproductive-age women in a rural community of Lahore, Pakistan.* ***Methods:*** *A descriptive cross-sectional study was conducted among 120 women aged 15–49 years residing in Lakhodair, Lahore. Participants were recruited through convenience sampling. Data were collected using a structured, pre-tested questionnaire adapted from validated sources, covering demographics, knowledge, attitudes, and practices related to diet. Knowledge, attitudes, and practices were categorized as good/positive when more than 50% of responses were affirmative. Data were analyzed using SPSS version 22, with descriptive statistics presented as frequencies and percentages. Ethical approval was obtained from the Institutional Review Board, and informed consent was taken.* ***Results:*** *Among 120 participants, the majority were aged 26–35 years (37.5%), married (75.8%), and housewives (68.3%). Educational status was low, with 18.3% having no formal education and only 15.8% achieving higher education. Most women (74.2%) demonstrated good knowledge of dietary fiber, vitamins, and high-fat foods; however, gaps remained in awareness about folic acid (56.7%) and iron-rich foods (57.5%). Attitudes were predominantly positive, with 88.3% expressing favorable views on healthy eating. Dietary practices were also encouraging, with 90% of respondents reporting good practices, including the consumption of freshly cooked food, family meals, and traditional diets.* ***Conclusion:*** *The study reveals that women in rural Lahore generally possess good knowledge, positive attitudes, and favorable practices regarding healthy diets. However, critical gaps remain in awareness regarding micronutrients such as iron and folic acid. Targeted nutrition education programs addressing these gaps, along with strategies to improve access to quality food, are essential for strengthening maternal and child health outcomes in rural Pakistani settings.*

Keywords: Knowledge, Attitude, Practice, Healthy diet, Reproductive-age women, Pakistan

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Introduction

The significance of nutrition is crucial, particularly among women of reproductive age, as their dietary choices have a direct impact on their health and the health of their offspring. The World Health Organization highlights women's nutrition as a vital factor in maternal and fetal health, indicating that inadequate dietary intake can lead to complications such as anemia, low birth weight, and gestational diabetes (1). Understanding knowledge, attitudes, and practices (KAP) regarding healthy eating in this demographic provides insights to inform public health interventions aimed at improving reproductive health outcomes. Furthermore, dietary recommendations aim to inform policies that help women achieve optimal energy and nutrient intake while minimizing health risks (2).

Research demonstrates a positive correlation between nutritional knowledge and dietary practices, while also highlighting barriers that hinder the effective implementation of healthy eating behaviors. For instance, many women of reproductive age, especially those in marginalized or rural areas, encounter unique challenges such as limited access to nutritious foods and low health literacy (3,4). Women in rural settings often lack knowledge about essential dietary nutrients, affecting their attitudes toward healthy eating. This issue is aggravated by socioeconomic factors that restrict their access to quality nutrition education and preventive healthcare services (5,6).

In Pakistan, addressing dietary habits among women of reproductive age is critical due to socioeconomic inequalities that lead to nutritional deficiencies. Limited awareness of the importance of a balanced diet is evident in practices that do not align with optimal health recommendations (7). Thus, exploring KAP towards a healthy diet among women in rural Lahore is essential for designing culturally informed interventions that enhance food security and nutritional quality.

Recent studies from various contexts, such as Sri Lanka and Ethiopia, have provided valuable insights into how sociocultural factors influence attitudes toward diet and the understanding of nutritional needs among women of reproductive age (8,6). These studies indicate a clear link between improved nutritional knowledge and better dietary choices; however, they also highlight significant gaps that require targeted education initiatives (9). Access to accurate and context-specific nutritional advice empowers women to make informed dietary decisions, significantly improving their health outcomes and those of their infants (10).

In summary, understanding the KAP concerning a healthy diet among women of reproductive age in rural Lahore is imperative for developing effective health promotion strategies. By addressing the unique challenges faced by these women, interventions can be more effectively designed to promote healthy eating habits, ultimately leading to better health outcomes for both mothers and their children in the context of Pakistan.

Methodology

This study employed a descriptive cross-sectional design to assess the knowledge, attitudes, and practices related to healthy diets among women

of reproductive age. The research was conducted in the rural community of Lakhodair, Lahore, which was chosen due to its representation of typical rural Pakistani populations where nutritional awareness and access to healthcare remain limited. The study population consisted of women aged between 15 and 49 years, as this age group encompasses the reproductive years during which nutritional status has significant implications for maternal and child health outcomes.

A convenient sampling technique was used to recruit participants who were readily available and met the eligibility criteria. The required sample size was calculated using Solvin's formula, with a population estimate of 150 women, a 5% margin of error, and a 95% confidence level. Based on this calculation, a final sample of 120 women was included in the study. Women who were permanent residents of the community and fell within the defined age bracket were eligible for inclusion. Those excluded were women with pre-existing medical conditions, professionals with advanced knowledge of nutrition (such as dietitians, nutritionists, and medical professionals), and individuals with mental health issues or dementia that could impair their ability to participate meaningfully.

Ethical approval for the study was obtained from the Institutional Review Board of the Fatima Memorial School of Health Sciences, Lahore. Informed consent was obtained from all participants after they were informed of the study's purpose and scope, ensuring confidentiality and voluntary participation.

Data collection was carried out using a structured, pre-tested, and adapted questionnaire based on the work of Weerasekara et al. (2020). The instrument consisted of four sections: demographic information (including age, education, marital status, and occupation), ten items assessing knowledge, six items evaluating attitudes, and six items assessing dietary practices. Each knowledge, attitude, and practice question was dichotomized into "Yes" or "No" responses. Knowledge was categorized as good if more than 50% of responses were correct, and as poor if fewer than 50% were correct. Similarly, attitudes and practices were classified as positive or good when more than 50% of responses were affirmative, and as negative or poor when fewer than 50% were affirmative. The questionnaire was administered personally by the researchers to minimize non-response and ensure clarity of items.

Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 22. Descriptive statistics, including frequencies and percentages, were calculated for categorical variables, while means and standard deviations were computed for continuous variables. Findings were presented in tables and figures to illustrate the distribution of demographic characteristics, as well as levels of knowledge, attitudes, and practices regarding healthy diets among the study participants.

Results

A total of 120 women of reproductive age participated in the study. The majority of participants were aged between 26 and 35 years (37.5%), followed by those aged 36 to 49 years (35%). Most women had only primary (34.2%) or secondary (31.7%) education, while 18.3% had no formal education and 15.8% had higher education. The marital status distribution revealed that three-quarters (75.8%) of the individuals were married. In terms of occupation, the majority were housewives (68.3%), followed by those in employment (24.2%), and those not working (7.5%). (Table 1)

Table 1. Demographic characteristics of reproductive-age women (N=120)

Variable	Category	Frequency (n)	Percentage (%)
Age (years)	15–25	33	27.5
	26–35	45	37.5
	36–49	42	35.0
Education	No education	22	18.3
	Primary education	41	34.2
	Secondary education	38	31.7
	Higher education	19	15.8
Marital status	Married	91	75.8
	Unmarried	29	24.2
Occupation	Housewife	82	68.3
	Working women	29	24.2
	Not working	9	7.5

A majority of participants demonstrated adequate knowledge about dietary fibers, vitamins, and high-fat foods. However, knowledge of folic acid and iron-rich foods was comparatively lower. Overall, 74.2% were categorized as having good knowledge, while 25.8% had poor knowledge. (Table2)

Table 2. Knowledge of reproductive-age women regarding a healthy diet (N=120)

Statement	Yes n (%)	No n (%)
Know about food containing dietary fibers	94 (78.3)	26 (21.7)
Think dietary fiber prevents disease	92 (76.7)	28 (23.3)
Heard/read about vitamins	103 (85.8)	17 (14.2)
Know vitamins/minerals provide energy & immunity	86 (71.7)	34 (28.3)
Heard folic acid prevents congenital disabilities/disease	68 (56.7)	52 (43.3)
Know iron-rich foods	69 (57.5)	51 (42.5)
Heard about iron deficiency anemia	72 (60.0)	48 (40.0)
Know about high-fat foods	99 (82.5)	21 (17.5)
Know the risks of consuming high-fat foods	101 (84.2)	19 (15.8)
Heard about a balanced diet	91 (75.8)	29 (24.2)

Most participants exhibited a positive attitude toward healthy eating. In total, 88.3% demonstrated a positive attitude, while only 11.7% expressed a negative attitude. (Table 3)

Table 3. Attitudes regarding healthy diet (N=120)

Statement	Yes n (%)	No n (%)
Prefer to eat healthy food	109 (90.8)	11 (9.2)
Eat nutritious food daily	102 (85.0)	18 (15.0)
Willing to learn more about a healthy diet	101 (84.2)	19 (15.8)
Satisfied with the daily meal pattern	93 (77.5)	27 (22.5)
Balanced diet important	103 (85.8)	17 (14.2)
Consider a balanced diet while preparing food	104 (86.7)	16 (13.3)

Dietary practices were favorable among participants, with 90% classified as having good practices. Eating freshly cooked food, family meals, and traditional flavors were highly prevalent practices. (Table 4)

Table 4. Practices regarding a healthy diet (N=120)

Statement	Yes n (%)	No n (%)
Use traditional food flavors	112 (93.3)	8 (6.7)
Usually eat rice and curry for the main meal	83 (69.2)	37 (30.8)
Eat roti and curry at breakfast	110 (91.7)	10 (8.3)
Eat three meals daily	83 (69.2)	37 (30.8)
Eat meals with family	97 (80.8)	23 (19.2)
Eat freshly cooked food	107 (89.2)	13 (10.8)

Discussion

The objective of this discussion is to contextualize the findings presented from a study of knowledge, attitudes, and practices (KAP) towards a healthy diet among reproductive-age women in a rural Lahore community. The study surveyed 120 women, primarily aged between 26 and 49 years, and yielded valuable insights into their dietary knowledge and associated behaviors.

The demographic data revealed that a significant portion of the participants, 37.5%, were aged between 26 and 35 years, and approximately 68.3% identified as housewives, which aligns with prevailing gender roles observed in South Asian societies, where women often bear the primary responsibility for home management (11). The education levels were predominantly lower, with 34.2% having only primary education, mirroring studies that highlight how educational disparities impact women's health knowledge, dietary choices, and practices (12,13).

Research by Weerasekara et al. confirmed that marginalized women often exhibited knowledge deficits related to nutrition, resulting in poor dietary habits that can adversely affect maternal and child health (14). The high percentage of married participants (75.8%) aligns with typical cultural norms in Pakistan, reinforcing the idea that marital status may influence dietary patterns and health behaviors.

In terms of dietary knowledge, the study found that 74.2% of participants demonstrated adequate awareness of nutritional fibers and vitamins. However, notable gaps existed in their understanding of folic acid and sources of iron-rich foods. This is particularly alarming given the findings of Helmy et al., which indicated that nutritional knowledge plays a crucial role in preventing anemia among pregnant women (15). Additionally, the lower recognition of iron-rich foods may correlate with an increased risk of health complications among this demographic.

Moreover, given that only 56.7% of women were aware that folic acid prevents congenital disabilities, there is a substantial need for targeted educational interventions aimed at improving nutritional knowledge concerning essential micronutrients (16). Such interventions could follow the model established by Abu-Baker et al., which highlighted the importance of health education in enhancing dietary practices among pregnant women (17).

The positive attitudes towards healthy eating, recorded with 88.3% showing favorable perspectives, suggest that many women value nutritious diets, echoing research by Kandel et al. that found positive attitudes towards healthy diets to be significantly correlated with better dietary practices (18). However, it remains crucial to convert this positive attitude into practice. The findings confirm similar results to those of Yu et al., wherein, despite high awareness of dietary quality, actual compliance with healthful eating standards remained inconsistent.

A noteworthy 90% of participants were classified as having good practices, with prevalent habits of consuming freshly cooked meals and traditional foods. This resonates with studies indicating that traditional culinary practices often provide the framework for healthier eating patterns among women (19). Nonetheless, the data exposed that practices varied in conjunction with socioeconomic status, exemplifying disparities in diet quality that can affect reproductive health (13,20).

Despite the positive dietary practices noted, barriers related to access to high-quality foods were acknowledged as significant hindrances; these include economic limitations, as evidenced by findings from Kostecka et al., discussing the influence of socioeconomic factors on diet adherence (21). Thus, while participants engage in traditional diets that may be nutritionally balanced, socioeconomic constraints may limit their access to a broader range of nutritious foods, as emphasized in studies by Nayan et al. (22).

This study underscores the urgent need to enhance nutrition knowledge among reproductive-age women in rural settings of Pakistan, where socio-economic barriers, low educational levels, and cultural norms significantly impact dietary choices. The findings mirror national health challenges, particularly concerning maternal health, where insufficient dietary knowledge poses risks to reproductive health outcomes (23). By fostering nutritional awareness and providing targeted interventions that resonate with cultural practices, there is potential to not only enhance

dietary behaviors but also improve overall women's health during reproductive years in Pakistan.

Thus, this study provides a foundational understanding of the nutritional landscape among reproductive-age women in Pakistan, revealing critical gaps and opportunities that can inform future public health initiatives.

Conclusion

This study revealed encouraging levels of knowledge, attitudes, and practices toward healthy diets among reproductive-age women in a rural community of Lahore. Despite overall positive findings, deficiencies in knowledge about folic acid and iron-rich foods remain concerning and may increase the risk of maternal and neonatal health complications. Strengthening nutrition education programs and addressing socioeconomic barriers can help bridge these gaps and support healthier dietary behaviors for women and their families in rural Pakistan.

Declarations

Data Availability statement

All data generated or analysed during the study are included in the manuscript.

Ethics approval and consent to participate

Approved by the department concerned. (IRBEC-MMS-033-24)

Consent for publication

Approved

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Conflict of interest

The authors declared the absence of a conflict of interest.

Author Contribution

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Conception of Study, Development of Research Methodology Design,
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All authors reviewed the results and approved the final version of the manuscript. They are also accountable for the integrity of the study.

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