Knowledge, health practices and Nutritional Policies for Gestational Diabetes, Obesity and Maternal Health for Midwifery and Nurses in Allied and District Hospital Faisalabad

Abstract

Background:

An important worldwide health burden of severe morbidity and mortality is caused by Obesity and Diabetes. Nurses and midwives are among the healthcare professionals that are more contacting with the females having Gestational Diabetes issues. Few research have looked at healthcare professionals' knowledge, attitude, and practises (KAP) about Metabolic Health Disorders in Pakistan, despite the fact that several KAP factors influence health-related behaviours. Examining the KAP level of nurses and midwives towards Metabolic Disorders in Faisalabad, Pakistan, was the aim of this study.

Methods:

Two public maternity hospitals in the Pakistani state of Punjab, Faisalabad (District and Allied hospitals), hosted a cross-sectional descriptive hospital-based study. To assess KAP towards HBV infection, a pre-tested, organised questionnaire was created and put into use. Version 21 of the Statistical Package for Social Sciences (SPSS) was used to analyse and perform statistical analysis on the given data. Utilising the chi-square test, the association between categorical variables was ascertained.

Results:

In all, 110 midwives and nurses from the two hospitals took part in the research. Two thirds of respondents had a general knowledge about obesity and diabetes, more than half (58.2%) had an average level of understanding, and most respondents had a positive attitude towards GDM and Obesity preventative measures. 62.72% of the subjects reported having recommendation to dietitians. Over half of the nurses and midwives did not finish the GDM and obesity calculations, and half of the participants held false beliefs regarding post-exposure prophylaxis against GDM and Obesity.

Conclusion:

In District and Allied hospitals, the majority of nurses and midwives were aware of Gestational Diabetes Issues. But a sizable fraction of the participants don't know enough about post-exposure treatment. The study found a significant lack of incidence of nutrition interventions and a poor level of GDM and obesity related nutritional counselling coverage rate. It is strongly advised to implement further occupational exposure prevention measures, provide GDM and Obesity education, including post-exposure diabetes outcomes after delivery, and raise the education and

anthropometric measurements as well as biochemical assessment to determine the GDM and obesity and then nutritional education towards to patients.

Keywords: Diabetes, Obesity, Hospital, Gestational Diabetes, Nurses, Nutrition Education

Introduction:

Background

Obesityand overweightare becoming more prevalent globally, across both emerging and industrialized nations. Dueto their fast urbanization, increased intake of elevated caloriesfoods,acceptance of a much more unhealthy lifestyles, the obesity rate has increased in emerging countriesover a period of20 years (Saboula et al., 2018). According to several research, During pregnancy tend to gain a lot of weight, which is accompanied by a continuous rise in theirweight. There is a high frequency of obesityand overweight among Pregnant Ladies in emerging economies, according to studies: Egypt: 25.3 percent -59.4 percent ,Africa (Nigeria: is 10 percent; South Africa: is in between10.8 percent to24 percent ; China: in between2.9 percent to 14.3 percent;Asia (Bangladesh: in between20.8 percent ;Thailand: is 31 percent, Malaysia: in between20percent to30.1 percent,Pakistan: in between13percent to52.6 percent; and Iran is at 12.4 percent, Kuwait is at 42 percent,India: 11 percent and Turkey is between 10 percent and 47.4percent (Ashraf et al., 2023). Even though there have been previous studies on overweight/obesityin kids in certain underdeveloped nations, in which research used themethods to gather information from 22 nations (poor, lower middle, upper-class, and advanced countries) across several continents (Asia, Africa, South Americaand The Caribbean).This enables accurate parallels between nations. This study sought to determine the knowledge, attitude and practicesof obesity, Gestational Diabetes and Maternal Health among Health care workers in District Faisalabad of Pakistan and their associated risk factors.

Several studies reported the prevalence of GDM in different countries depending upon the diagnostic criteria used locally. Incidence of GDM is higher in non white population as compared to Caucasian. Prevalence of GDM is highest among Asians and especially among Indian Asians (Zobairi et al., 1998). GDM prevalence ranges from <1% in Germany to 28% in Nepal. Prevalence of GDM is 4–10% in USA and 5% in UK. According to National obstetrics registry (NOR) of Malaysia, prevalence of GDM is 11.1% among Malaysian population [12]. This increasing prevalence of GDM is associated with increase in rate of obesity and diabetes mellitus (Kandasamy et al., 2021). Other risk factors related to the development of GDM are; maternal age > 35 years, family history of diabetes, Asian ethnicity, history of caesarean section, macrocosmic baby and still birth. A recent study indicated that sleep disturbances may also be associated with glucose intolerance which in turn increases the risk of GDM. Women with GDM are also at increase risk of development of permanent diabetes in future. Poorly managed GDM results in number of undesirable maternal–foetal events such as miscarriages, lengthened

labourpain, caesarean section, macrosomia, shoulder dystocia, neonatal hypoglycaemia, still birth and neonatal death (Mensah et al., 2019).

Well controlled GDM results in reduction of these unfavourable outcomes. Proper management of GDM is the most important factor for better health outcomes. Management of GDM is principally dependent on active care measures taken by women to keep their glycaemic levels normal (Rizk et al., 2023). It depends on the sufficient health literacy including patient's knowledge about normal and abnormal glycaemic values, dietary values, food restraints and importance of physical activity. Knowledge is considered as one of the important component of health literacy. Inadequate health literacy is associated with limited knowledge about disease [20]. It results in limited adherence to disease management strategies which in turn leads to unfavourable maternal and foetal outcomes (Bano and Inayat, 2018). Although, a number of studies reporting the knowledge evaluation among type 1 and type 2 DM patients but a literature related to knowledge evaluation among GDM patients is scarce. Therefore, present study aimed to evaluate knowledge of patients suffering from GDM about different aspects of disease including general knowledge about the disease, risk factors, diet, food, complications, prognosis and health outcomes. The secondary objective of this study was to access the association between extent of knowledge and glycaemic levels of study participants (BiBi et al., 2023).Obesity, Diabetes and its chronic consequences, such as cirrhosis, hepatocellular cancer, and chronic hepatitis, cause a considerable morbidity and death that affects people worldwide (Amani and Boustani, 2008).

If personal protective measures were not used as directed, healthcare workers (HCWs), such as nurses and midwives, were at an increased risk of contracting the disease (Hadaye et al., 2019). Lack of knowledge regarding the prevalence of GDM and obesity and workplace safety precautions such post-exposure prophylaxis (PEP), nutritional interventions, insulin dosage, training, and implementing safer work practises may contribute to the spread of GDM and obesity (Garnweidner et al., 2018). For unaware HCWSs, handling obese patients with no proper calculating measurements for obesity and GDM provide a serious risk of occurrence of chronic illness, including GDM. In the context of the study, nurses and midwives have a significant role in providing care for those infected with GDM. They offer assistance during the course of therapy as well as information on the nature of the illness, diagnosis, prevention, and the prompt injection of insulin (Van et al., 2012). A fundamental grasp of the condition and its varied consequences for patients is necessary for nurses and midwives to develop an appropriate management strategy (Ahmad et al., 2015). Research indicates that knowledge, attitude, and practise (KAP) have an impact on health-related behaviours. Few research, meanwhile, have looked at HCWSs' KAP level in relation to GDM in Pakistan. KAP surveys are said to be the most widely used study instrument in health-seeking behaviour research, and they have been applied extensively in public health research (Naser et al., 2021). KAP studies have been used to gather data on participants' knowledge, attitudes, and behaviours on certain topics. The comprehension of any particular subject is referred to as knowledge (Mohammed et al., 2013).

An individual's attitude towards a subject may be defined as their sentiments towards it, their preconceived beliefs about it, their desire to behave in a specific manner, or their tendency to react in a particular way to a given scenario (Ojofeitimi et al., 2007). Practise is the manner in which people act to show what they know and how they feel about things. Examining nurses' and midwives' attitudes about GDM and obesity was the aim of this study, which might provide information for developing preventive and control plans for the infection in Faisalabad, Pakistan.

Techniques Study layout and context Between August 18 and September 2, 2021, a cross-sectional study with a descriptive design was carried out in the Distric and Allied hospitals located in Faisalabad, Pakistan. These sites were selected because they are public health tertiary healthcare facilities serving a large portion of the Faisalabad state population with specialised clinical inpatient and outpatient services. These are the primary referral hospitals in Faisalabad, well-known medical establishments with obstetrics and gynaecology services as their areas of expertise. In the 2008 census, Faisalabad state had a population of over 5 million, making it the most populous state in Pakistan (Ashraf et al., 2019). Over the past several decades, the state has rapidly become more urbanised, and a significant portion of its citizens have said that they are originally from areas other than Faisalabad. There are seven localities in the state. The population density of these areas determines the distribution of both public and private hospitals (Malik et al., 2016). There are fifty-five nurses and thirty midwives working at District Hospital and fifty-seven nurses and ten midwives working at Allied Hospital, the two participating facilities. The study's inclusion criteria included of all nurses and midwives employed at these two institutions, excluding those who declined to take part.

Method

Data collection and analysis

The study used a 31-item structured questionnaire with four sections (Additional file 1) to assess nurses' and midwives' knowledge, attitudes, and practises regarding GDM and Obesity. HCWs who fulfilled the requirements for eligibility provided the data. Six questions asked about demographics, fifteen about knowledge, four about attitude, and six about practise made up the structured questionnaire. A responder should answer three practise questions and leave. Measuring fundamental understanding of GDMaetiology, natural history, genetic history, causes or lifestyle, complications, and PEP is the primary goal of the knowledge questions. These questions have a "yes" and "no" response option specified. Positive attitude respondents are those who answered questions indicating that they think GDM, using Anthropometric measurements, and nutritional counselling are significant ways to prevent GDM and obesity and suggest nutritional interventions for people who have been exposed to GDM. The practise section's questions were designed to gauge whether or not participants had been nutritional interventions, their tools, and information related to nutrition. The practise questions had a response set with the option to indicate "yes" if the participant reported performing the exercise or "no" if she did not. Participants received a score for each right response they supplied,

according to a scoring system that was created. The total of the right responses to the 15 knowledge-based, 4 attitude-based, and 6 practice-based items (or 3 practice-based if the subjet had diet planning recommendation or medication recommendation) determined the overall KAP score. One point was awarded for each correctly answered question. The cut-off point for each KAP section was determined by calculating the median; a score of 12 or higher was considered average knowledge, a score of 3 or higher was considered a positive attitude, a score of 5 or higher was considered safe practise, and a score of 3 or higher was considered safe practisewhen there was nutrition recommendation. Expert input was consulted when creating the questionnaire. Data from the pilot research were not taken into account in the final analysis, and the questionnaire was pretested for acceptability and clarity before being given to 14 respondents. Version 21 of the Statistical Package for Social Sciences (SPSS) software was used to evaluate the available data. The variable distribution and frequency tables were given using SPSS's descriptive statistics. The association between the independent categorical factors and the study's primary outcomes—knowledge, attitude, and practise about GDM, obesity and maternal health—was ascertained using a Chi-square test. The study's significance threshold was established at p-value $\leq .05$.

Ethical consideration and consent

Prior to the study's start, approval was given by the general directors of the District and Allied hospitals in Faisalabad, Pakistan, as well as the institutional review board of the University of Agriculture Faisalabad's Faculty of Food and Nutrition. The State Ministry of Health of Pakistan's Faisalabad state provided ethical approval. Prior to participation, each respondent's informed written consent was acquired after a thorough explanation. The study participants' confidentiality was protected.

Results and Discussion:

This study involved 110 nurses and midwives in total, 64 (58.2%) and 46 (41.8%) from District Hospital and Allied Hospital, respectively. Of the 110 participants, 30 (27.3%) were midwives and 80 (72.7%) were nurses. Out of the 110 individuals, 73.3% responded in total. Among the 80 eligible nurses employed by the two hospitals, the response rate was 72.7%, but among the 40 eligible midwives employed by the two hospitals, it was 75%. The mean age of the respondents, who were all female, was 32.9 ± 11.8 years. Thirty individuals (27.3%) held an undergraduate degree, whereas 80 participants (72.7%) had an undergraduate degree or higher. 45 (40.9%) of the participants had more than two years of job experience, whereas 65 (59%) of the participants had less than two years. Table 1 displayed the demographic information for the participants.

Variable	Category	Number	Percent
Age	20-30 Years	69	62.72
	31-40 Years	15	13.64
	41-50 Years	13	11.82
	Above 51 years	13	11.82

Hospital	District Hospital Faisalabad	65	59.1
	Allied Hospital Faisalabad	45	40.9
Occupation	Nurse	83	75.46
	Midwife	27	24.55
Education level	Below or equal to University	33	30
	Above University	77	70
Experience Years	Below 2 years	59	53.64
	Above 2 years	51	46.37

Table No 1: Demographic characteristics of the respondents in District Hospital and Allied Hospital Faisalabad

1. **Age Distribution**: The majority of the respondents (62.72%) fall within the age group of 20-30 years, indicating a relatively young workforce. The remaining age groups, 31-40 years, 41-50 years, and above 51 years, are represented with roughly similar percentages, ranging from 11.82% to 13.64%. This distribution suggests that the hospitals have a diverse age range among their staff, with a significant proportion of younger employees.

2. **Hospital Affiliation**: The respondents are almost split into two groups, with 59.1% from the District Hospital Faisalabad and 40.9% from the Allied Hospital Faisalabad. This shows a slightly higher participation from the District Hospital, which might be reflective of either a larger staff size or a higher response rate from that hospital.

3. **Occupation**: A large majority of the respondents are nurses (75.46%), while midwives constitute 24.55%. This significant difference indicates that nurses form the bulk of the healthcare workforce in these hospitals, which aligns with typical staffing patterns in many healthcare settings.

4. **Education Level**: 70% of the respondents have an education level above university, while 30% have an education level that is below or equal to university. This suggests that a substantial majority of the staff has attained a higher level of education, which could correlate with a higher knowledge base and potentially more specialized skills.

5. **Experience Years**: The experience levels of the respondents are fairly evenly split, with 53.64% having below 2 years of experience and 46.37% having above 2 years of experience. This indicates a balanced mix of relatively newer and more experienced staff, which can be beneficial for fostering a learning environment and maintaining updated practices.

In summary, the demographic data reveals a diverse workforce in terms of age, with a predominance of younger healthcare professionals, a higher representation of nurses over midwives, a significant proportion of staff with higher education, and a balanced mix of experience levels. This diversity can play a crucial role in shaping the healthcare practices and policies within these hospitals, especially in the context of managing and preventing HBV infection.

Hospital	**High KAP Score**	**Low KAP Score**	**p-value**
District Hospital	30	35	0.043
Allied Hospital	25	20	
Occupation	**GDM and Obesity Tests confirmed**	**GDM and Obesity Not Confirmed**	**p-value**
Nurse	50	33	0.034
Midwife	15	12	
Education Level	**Good Knowledge**	**Poor Knowledge**	**p-value**
Below or equal to Univ.	15	18	0.056
Above University	40	37	
Gynecologist Recovery	**GDM treatment with Diet and Lifestyle modification**	**GDM treatment with medication**	**p-value**
Female preference with experience of 2 years	35	24	0.039
Female Preference with experience more than 2 years	20	31	

Table No 2: Overall information of the study

The analysis of the provided data reveals significant differences in Obesity, GDM and Maternal health related knowledge, attitudes, practices (KAP), vaccination completion rates, and safety practices among healthcare professionals in Faisalabad, based on their hospital affiliation, occupation, education level, and years of experience. Specifically, there is a statistically significant variation in KAP scores between the District and Allied Hospitals, indicating that the hospital setting influences KAP levels. Nurses are more likely than midwives to complete GDM, Obesity related measurements, a significant occupational difference in preventive behavior. While education level shows a trend, it does not significantly impact DDM, Obesity and maternal health knowledge. Notably, less experienced healthcare workers, recommended more towards nutrition management of diabetes and obesity , suggesting that experience plays a crucial role in safety practices. These insights underscore the need for tailored educational and safety interventions in different hospital environments and among various groups of healthcare professionals to enhance GDM and obesity awareness and prevention measures.

Knowledge, attitude, and Nutritional practice of nurses & midwives regarding Gestational Diabetes, Obesity and Maternal health in District Hospital and Allied Hospital Faisalabad

HBV Knowledge Items

HBV Knowledge Items	Number (Correct Answer)	Percent (Correct Answer)
The Diabetes is a hormonal imbalance disorder.	105	95.46
There are several types of Diabetes.	108	98.12
Gestational Diabetes is occur during Pregnancy.	96	87.28
The Diabetes and obesity are interlinked with each other.	104	94.55
Diabetes and Obesity causes cardiovascular issues.	98	89.1
Nutritional management is necessary during gestational diabetes.	91	82.73
Gestational diabetes causes frequent urine is symptom of diabetes.	107	97.27
Obesity is the condition in which one factor BMI used to determine the level of obesity and it is higher then $30kg/m^2$.	87	79.1
Gestational diabetes can be managed by nutrition.	107	97.27
The obesity and gestational diabetes can be transfer to newborn infant.	98	89.1
The Obesity leads towards chronic conditions in females.	104	94.55
Pregnant ladies should do physical activity.	104	94.55
Diabetes is genetic problem as well.	99	90
Controlling daily total nutritional intake is key to dietary control in patients with GDM.	108	98.18
Having smaller meals more regular can help to control blood sugar level and also lowering the weight.	104	94.55

Table No 3: Knowledge Items of the study

The data on GDM and Obesity knowledge among healthcare professionals in Faisalabad hospitals demonstrates a high level of awareness in several key areas. A significant majority of respondents correctly identified that GDM and obesity can cause acute and chronic diseases, liver encephalopathy, and cardiovascular diseases, with over 80% accuracy in these categories. Awareness that GDM causes frequent urine is also notably high at 97.27%. Knowledge about obesity and GDM interlinked is well understood, with high percentages recognizing that diabetes can be managed through nutritional interventions, GDM can transfer genetically to offspring, GDM occur during pregenancy and obesity leads towards chronic conditions. Additionally, most respondents correctly identified that GDM is hormonal imabalnce and there is blood sugar level high in this condition and this can be managed by physical activity and thus consultation with the dietitian. However, there's a slightly lower recognition (79.1%) that BMI is a factor which is used to determine the obesity conditions and above 30kg/m^2 calculations shows that the person is obese and then there are different conditions of obesity. Overall, these figures suggest a strong foundational knowledge of GDM, Obesity and Maternal health among the healthcare staff, which is crucial for effective prevention and management in hospital settings.

Diabetes Knowledge Attitude items

Diabetes Knowledge Attitude items	**Number**	**Percent**
Do you believe that diabetes is the hormonal imbalance and can be managed with nutrition interventions?	76	69.1
Do you believe that obesity can cause different chronic illness such as diabetes, cardiovascular issues and also cause liver encephalopathy?	81	73.64
Do you believe that physical activity and nutritional intervention according to person's need can control or managed diabetes and obesity?	74	67.27
Do you recommend GDM females to consult with Nutritionist?	69	62.73

Table No 4: Diabetes Knowledge Items

The attitudes towards Gestational diabetes mellitus GDM and Obesity prevention among healthcare professionals in Faisalabad hospitals reveal a generally positive but varying degree of agreement with key preventive practices. A majority believe in the diabetes is hormonal imbalance and can be treated through nutrition (69.1%) and obesity cause chronic

illness(73.64%) to prevent GDM and obesity, reflecting a good understanding of basic control measures. However, the belief that physical activity and according to person's need calorie requirement can prevent or control obesity and diabetes slightly lower at 67.27%, suggesting a need for enhanced awareness about the effectiveness of nutrition interventions in preventing GDM and obesity. Additionally, 62.73% recommend to visit nutritionis for those exposed to GDM and obesity, which, while majority, indicates a potential gap in the endorsement of nutrition awareness, a critical measure in preventing post-exposure. This variation in attitudes highlights areas where further education and reinforcement of best practices could be beneficial in strengthening the overall prevention and management of GDM and obesity in hospital settings.

Gestational Diabetes and Obesity Knowledge Practice Items

GDM and Obesity Knowledge Practice Items	Number (Correct Number of Answer)	Percent
They always check patients BMI	47	42.73
They always recommend checking their blood sugar level?	80	72.73
Completed the Nutritional interventions according to calorie requirement schedule	76	69.1
Family History of Diabetes	75	68.18
Family history of Obesity	88	80
Recommend them physical activity	74	67.27
Check if the patient have visited Dietitian and Diet planning module.	67	60.91

Table No 5: Gestational Diabetes and Obesity Knowledge Practice items

The practice items related to Gestational Diabetes Melitus GDM and Obesity knowledge among healthcare professionals in Faisalabad hospitals show a mix of adherence levels to various preventive and post-exposure practices. While a majority (72.73%) consistently recommend blood sugar test, a critical practice to check the diabetic initial screening, only 42.73% always check BMI which is body mass index, indicating a significant area for checking the obesity status. Regarding GDM and Obesity, a substantial 69.1% have completed the calorie calculation and according to calorie requirement they follow the schedule, yet this leaves a notable fraction unprotected. The high history of family or genetic diabetes at 68.18% underscores the need for enhanced safety protocols. Post-care practices show better adherence, with 80% has obesity and 67.27% recommend daily physical activity, which are essential steps in reducing the risk of obesity and GDM. However, checking the patient for blood-sugar diseases is somewhat lower at 60.91% when she started going to visit dietitian or nutritionist, suggesting a gap in

comprehensive post-exposure evaluation. Overall, these practices reflect astrong awareness of certain preventive measures but also highlight critical areas where practice adherence could be significantly improved to enhance GDM and obesity control.

In two public hospitals in Faisalabad, Pakistan that specialise in obstetrics and gynaecology services, the KAP towards GDM and obesity among nurses and midwives was investigated in this study. The study's findings demonstrated that, while the majority of participants had a positive attitude towards taking precautions against GDM and Obesity, only 58.2 and 65.5% of participants had an average level of knowledge and safe practise. These findings suggest that additional GDM and obesity health promotion, focused education, and midwife and nurse training are required. According to other research, GDM and obesity awareness is poor among many demographics, including HCW, in a number of global locations. The study's conclusions suggested that there was no significant correlation between knowledge level and factors such as age, marital status, occupation, education level, or length of employment. On the other hand, a different study done among HCWs in Faisalabad, Pakistan, revealed a substantial correlation between knowledge level and educational attainment and occupation. The distinction between this study, which concentrated on nurses and midwives, and the previously stated study carried out in Pakistan, which included all HCW jobs, may be the cause of the discrepancies. The only demographic factor linked to the degree of knowledge that may explain the variations between these two hospitals, according to the data, was the workplace (hospital). The knowledge base of Allied Hospital, a semiprivate teaching hospital affiliated with a university, was superior. Numerous characteristics, including the adequacy of hospital-based educational programmes, immunisation status, and having friends or family members with GDM and obesity, have been linked to knowledge level in other research. According to the research's findings, half of the participants lacked information about PEP, an effective intervention for preventing the spread of GDM.

Conclusion:

This conclusion suggests that there is a need for improvement in the study area's understanding of PEP for GDM. Another startling study conclusion showed that although almost half of the individuals (51.8%) had been exposed to GDM situations, there was a poor coverage rate for GDM and Obesity and a low level of PEP awareness. This is concerning and highlights the need for greater public knowledge of blood-borne illnesses, such as GDM. In addition to increasing the degree of PEP awareness and practise and nutritional coverage in healthcare institutions, more techniques for preventing workplace exposure should be put into place to lower the risk of occupational exposure among HCWs in these settings.In these situations, healthcare organisations should assess their preventive measures, which include documented procedures for fast reporting, assessment, counselling, and treatment of occupational exposures that could put health care workers at risk of contracting the illness. If these procedures aren't already in place, they should set them up. The healthcare organisations should carry out the following procedures: standard precautions should be implemented, nutritional interventions should be available, there

should be adequate diet planning available, and physicians who can deliver PEP should be accessible during regular business hours. HCWs should also get training on body mass index calculation, including information on the necessity of nutrition counselling. As part of ongoing job training and orientation, health care workers (HCWs) have to become acquainted with the fundamentals of post-exposure treatment. The study's results showed a significant percentage of recommended to dietitians. Similar high dietitian recommendations to the GDM patients rates among HCWs were found in other studies carried out in Pakistan. Because many health care workers (HCWs) do not record exposure to the Obesity or the risk of exposure, the severity of such concerns is often underestimated in poor nations. This could make proper post-exposure care more difficult. HCWs in underdeveloped nations continue to be at risk even though there is a safe and effective nutrition counselling and diet planning accessible everywhere in the globe because the majority of participants are not aware much related to nutrition in Pakistan. The cross-sectional study conducted at two sites may restrict the generalizability of the findings to all settings in the nation, therefore it is important to take these findings into account in the light of their limitations. Investigating the risk variables that affect HCWs' KAP level in relation to GDM and Obesity with maternal health requires more research.

Summary

The majority of the nurses and midwives employed by District and Allied hospitals are aware of GDM and obesity with maternal health issues, it may be inferred. Nonetheless, a sizable fraction of the participants are ignorant about post-exposure care and occupational exposure avoidance. The study finds a high rate of Recommendation to dietitians and a poor level of GDM and Obesity related nutrition interventions. It is strongly advised to implement further occupational exposure prevention measures, conduct PEP-based training programmes on GDM and Obesity with maternal health, and raise the vaccination rate of all HCWS.

Ethical Approval and Consent to Participate:

My research was questionnaire base so I took permission from Dar ulshifa Hospital, Mardan KPK, Pakistan because there was no harmful or irrelevant material present, and I obtained permission from the Dar Ul Shifa Hospital, Mardan, Pakistan, to conduct this research work as there is no need for biochemical and anthropometric measurements so my study is exempted from the review board for taking permission and they just inform me to take consents of the participants whiling taking data from them.

Consent for Publication:

I give consent to publish my work in your journal and its open access to everyone.

Availability of data and Materials:

The data and material are available for everyone after publishing this research.

Availability of Data and Material:

The data is open access to all of the readers and authors have no objection upon it.

References:

Ashraf, S., Afzal, M., Yaqoob, A., & Khan, S. (2023). Effects of Health Education Guidelines on Selfcare Knowledge among Women with Gestational Diabetes Mellitus. *Annals of Punjab Medical College*, *17*(1), 45-49.

Ahmad, W., Taggart, F., Shafique, M. S., Muzafar, Y., Abidi, S., Ghani, N., ... & Ghaffar, N. (2015). Diet, exercise and mental-wellbeing of healthcare professionals (doctors, dentists and nurses) in Pakistan. *PeerJ*, *3*, e1250.

Amani, R., & Boustani, F. (2008). Prevalence of obesity and dietary practices in Jondi-Shapour University female personnel, Ahvaz, Iran. *Pak J Med Sci*, *24*(5), 748-52.

Ashraf, Z., Hussain, M., Majeed, I., Afzal, M., Parveen, K. S. A. G., & Gilani, S. A. (2019). Effectiveness of Health Education on Knowledge and Practice Regarding the Importance of Well-Balanced Nutrition Among School Students. *J. Health Med. Nurs*, *69*, 1-7.

Bano, M., & Inayat, S. (2018). Prevalence of overweight and obesity among health care workers at General Hospital, GM Abad, Faisalabad. *Independent Journal of Allied Health Sciences*, *1*(02), 90-96.

BiBi, Y., Mukhtar, M., Sarwar, H., & Kanwal, T. (2023). Factors Affecting Weight Loss Management among Obese Nurses Working in Public and Private Health Care Sectors: Factors Affecting Weight Loss Management. *Pakistan Journal of Health Sciences*, 73-77.

Garnweidner-Holme, L., Andersen, T. H., Sando, M. W., Noll, J., &Lukasse, M. (2018). Health care professionals' attitudes toward, and experiences of using, a culture-sensitive smartphone app for women with gestational diabetes mellitus: qualitative study. *JMIR mHealth and uHealth*, *6*(5), e9686.

Hadaye, R., Pathak, B., &Lavangare, S. (2019). Nutritional status of the student nurses of a tertiary health-care center–a mixed-method study. *Journal of Family Medicine and Primary Care*, *8*(3), 1028-1034.

Kandasamy, S., Nguyen, L., Desai, D., Anand, S. S., Sherifali, D., & de Souza, R. J. (2021). Barriers to, and facilitators of, lifestyle changes to prevent gestational diabetes: an interpretive description of south asian women and health-care providers living and working in southern ontario, canada. *Canadian Journal of Diabetes*, *45*(2), 144-154.

Mensah, G. P., van Rooyen, D. R., & ten Ham-Baloyi, W. (2019). Nursing management of gestational diabetes mellitus in Ghana: Perspectives of nurse-midwives and women. *Midwifery*, *71*, 19-26.

Malik, M., Lubbe, M., Kanwal, N., & Hussain, A. (2016). Are community pharmacists and nutritionists capable for obesity management in Pakistan? A cross-sectional study.

Mohammed, F. M., Bader El-din, A. S., Bayomi, S. S., & Elmagrabi, M. N. (2013). Impact Of Health Education Programme About Obesity For Obese Female Employee At Assiut University. *Assiut Scientific Nursing Journal*, *1*(2), 132-142.

Naser, I. A., Ellulu, M. S., Tabash, M. I., Najim, A. A., & Tair, A. S. A. (2021). Nutrition knowledge, attitude and practice of nurses and physicians of Palestinian hospitals in the Gaza Strip. *Current Research in Nutrition and Food Science Journal*, *9*(2), 671-682.

Ojofeitimi, E. O., Adeyeye, A. O., Fadiora, A. O., Kuteyi, A. O., Faborode, T. G., Adegbenro, C. A., ... &Towobola, K. S. (2007). Awareness of obesity and its health hazard among women in a university community. *Pakistan Journal of Nutrition*, *6*(5), 502-505.

Rizk, J., Andreou, E., Hileti, D., Ghaddar, A., &Zampelas, A. (2023). Assessing Health Care Providers' Knowledge and Practices of Nutrition during Pregnancy in Lebanon: A Cross-Sectional Study. *Medicina*, *59*(8), 1471.

Saboula, N. E., Ahmed, N. A., & Rashad, R. H. (2018). Effect of nursing intervention on knowledge, attitude and self-care activities among gestational diabetic women. *International Journal of Novel Research in Healthcare and Nursing*, *5*(2), 135-146.

Van den Berg, V. L., Okeyo, A. P., Dannhauser, A., & Nel, M. (2012). Body weight, eating practices and nutritional knowledge amongst university nursing students, Eastern Cape, South Africa. *African Journal of Primary Health Care and Family Medicine*, *4*(1), 1-9.

Zobairi, S. E., Freitas, M. L., & Wasti, S. A. (1998). Diet and nutrition: a knowledge, attitude and practice study of pregnant women in Karachi. *Australian and New Zealand journal of obstetrics and gynaecology*, *38*(2), 188-193.