



CHANGES IN THE STATUS OF VITAMIN D IN MUSLIM WOMEN DUE TO THEIR LIFE STYLE PATTERN AND CULTURAL PRACTICES IN SOUTH INDIA

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Introduction: Vitamins are group of chemicals that are required to perform vital functions in our body. Vitamin D is a fat soluble vitamin that is synthesized in our body and proven to be very important due to its role in immunity as well as calcium metabolism. This vitamin exists in two forms – Vitamin D₂ that is also known as ergocalciferol and Vitamin D₃ which is known as cholecalciferol. Vitamin D is synthesized in our skin in the presence of ultraviolet B rays (UV-B) of sunlight. Though Vitamin D can be obtained from diet and other medicinal supplements major portion of this Vitamin is obtained from the skin via sunlight.

UV – B rays of the sunlight with wavelength of 290-315 nm⁴ acts on epidermis of the skin which converts 7-dehydrocholesterol into cholecalciferol (Vitamin D₃). In liver cholecalciferol gets converted into 25 – hydroxycholecalciferol which in the kidney gets converted into 1,25 – dihydroxycholecalciferol. 1,25 – dihydroxycholecalciferol works on intestinal epithelium and increases intestinal calcium absorption. Also, Vitamin D plays an important role in remodelling of bone and thereby effect bone health.

Role of this Vitamin in women health like pregnancy, fertility, lactation and menopause has been brought into light since last decade. Common symptoms of vitamin D insufficiency are bodyache, pain in the bones and severe weakness. It is a proven fact that Vitamin D is one of the essential nutrients which supports different stages of women life. Muslim women follow their religious practices as ordered in the Quran and have unique lifestyle pattern and cultural dressing. Studies conducted in the Middle East countries have shown very low levels of Vitamin D though ample of sunlight available in those countries. Such studies on Vitamin D status of Muslim Women of India are very limited. Hence, this study is aimed to find status of Vitamin D in Muslim Women of India.

Materials and Methods: In this cross sectional study Muslim Women were selected randomly from high population of Muslim residing areas. One hundred Muslim women ageing between 25-45 years without any subclinical health problems were selected. Pregnant, lactating and women who were in their menopause were excluded. Women from other religious background were also excluded.

Ethical clearance for the study was obtained and written consents from the participants were obtained prior to the study.

Data of their lifestyle pattern, education, occupation and physical activity like exercise (its type and duration) were collected. Information about duration of their time to exposure of sunlight was obtained. Data emphasizing cultural dress practices and the time, colour and length for selected cultural dress were obtained. Clinical examination was carried out to know any specific signs and symptoms of specific acute and chronic deficiency. Muslim women were examined for deficiency of Vitamin D and calcium. The observational data was documented and statistically analysed.

Results and discussion: Data obtained from one hundred Muslim Women showed that 52% of women have completed their high school education followed by higher secondary education 20%, which shows their trend to dropout after higher secondary education. 75% of selected Muslim Women were housewives and working women were only of 25%. Among working women most of them were working in shops, cloth industry or as caterers.

Only twenty percent of the Muslim women in this study were exercising regularly which shows that their physical activity level was not up to the standard. Muslim women who got exposed to sunlight for more than 30 min to an hour were only 30%. Most of the Women were predominantly staying indoor and when going outdoor tend to cover themselves almost fully by exposing only their hands and face.

Conclusion: The present study revealed that naqab and burqa do prevent the intake of Vitamin D from sunlight. Muslim women who had less sunlight exposure were tend to suffer from major Vitamin D deficiency symptoms like backache, pain in the bones and bone loss. This associates directly with their sunlight exposure, lack of physical activity and education. Hence, it is suggested that Muslim Women must get educated for the effects of Vitamin D status on their body. If not possible to change their lifestyle pattern and cultural practices they are recommend to follow routine physical activity and are advised to take enough sunlight exposure to improve their Vitamin D status.

References

1. Habeeba, B. and Kalpana C.A, Effect of lifestyle pattern and cultural practices on Vitamin D status of Muslim Women in Coimbatore City, The Indian journal of Nutrition and Dietetics; March 2021.
2. WHO guidelines on Physical activity and sedentary behaviour 25th Nov 2020.
3. Singh, P., Pattanaik, F. Unfolding unpaid domestic work in India: women's constraints, choices and career. Palgrave Commun., 2020, 6,111.
4. Mendes, M.M., Botelho, P.B., Lanham – New, S.A. and Hart, K.H. Vitamin D status in the tropics: Is sunlight exposure the main determinant? Nutr. Bull., 2018, 43, 428-434.
5. Do women in hijabs have a greater risk of vitamin D deficiency?, arabamericannews. Com, <https://arabamericannews.com/2018/12/24/do-women-in- hijabs-have - a - special -risk- for - vitamin d – deficiency/>
6. Suvarna Satish Khadilkar, The Emerging role of Vitamin D3 in Women's Health, J. Obstet.Gynaecol. India. 2013, 63, 147-150.

TABLE I : PHYSICAL ACTIVITY PATTERN OF MUSLIM WOMEN OF SOUTH INDIA

PHYSICAL ACTIVITY	NUMBER (n = 100)	PERCENT (%)
Performing exercises regularly		
Yes	20	20
No	80	80
Time for exercises		
Less than 1 hour	10	10
1 hour	06	06
More than 1 hour	04	04
Nil	80	80
PHYSICAL ACTIVITY	NUMBER (n = 100)	PERCENT (%)
Performing exercises regularly		
Yes	20	20
No	80	80
Time for exercises		
Less than 1 hour	10	10
1 hour	06	06
More than 1 hour	04	04
Nil	80	80

TABLE II: USAGE OF CULTURAL DRESS AMONG THE MUSLIM WOMEN

CHARACTERISTICS	NUMBER (n = 100)	PERCENT (%)
Wearing cultural dress		
Yes	87	87
No	13	13
Types of cultural dress		
Chaddar	50	50
Naqab	13	13
Hijab	35	35
No cultural dress	02	02

TABLE III: ASSOCIATION EXPOSURE TO SUNLIGHT

Exposure to Sunlight	Associations	'r' value
	Types and colour of dress	0.013*
	Back pain and pain in bones	0.046**
	Back pain and bone loss	0.027**
	Pain in the bones and bone loss	0.011*

*Correlation is significant at 0.01 level (2-tailed)

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