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ORIGINAL

Epidemiological profile of overload among paramedical staff at the regional hospital in southern Morocco

Perfil epidemiológico de la sobrecarga entre el personal paramédico del hospital regional del sur de Marruecos

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Abstract

Introduction: Overweight is a global public health problem. It is considered a major risk factor for chronic conditions such as hypertension, diabetes, hyperlipidaemia and certain cancers. It affects all categories of the population. To this end, the study aims to investigate the prevalence of obesity and overweight as well as the associated factors among health care personnel in a regional hospital in southern Morocco.

Methods: This was a descriptive cross-sectional study of nurses at the regional hospital. Anthropometric measurements were carried out in accordance with WHO recommendations. Weight was measured using a MEDISANA RETRO PSD scale and height using a wall-mounted scale graduated in cm. The data were processed using IBM SPSS version 20 software.

Results: The mean BMI in women was 26.18 (SD ±3.77) compared to 25.76 in men (SD ±3.62). Almost two thirds (62.57%) were overweight, of which 16% were obese. The study showed that 65% of the weight load was recorded among nurses (of which 17.20% were obese). In addition, 64.9% (of which 19% were obese) of the overweight was recorded among those who were on call or on-call, followed by those who were on regular duty.

Conclusion: Shift work disrupts regular sleep, eating and exercise patterns, which can make it harder to maintain a healthy weight.

Key words: Weight load, nurse, hospital, risk factors.

Resumen

Introducción: El sobrepeso es un problema de salud pública mundial. Se considera un importante factor de riesgo de enfermedades crónicas como la hipertensión, la diabetes, la hiperlipidemia y ciertos cánceres. Afecta a todas las categorías de la población. Con este fin, el estudio pretende investigar la prevalencia de la obesidad y el sobrepeso, así como los factores asociados, entre el personal sanitario de un hospital regional del sur de Marruecos.

Métodos: Se trata de un estudio descriptivo transversal de las enfermeras del hospital regional. Se realizaron mediciones antropométricas de acuerdo con las recomendaciones de la OMS. El peso se midió con una báscula MEDISANA RETRO PSD y la altura con una báscula de pared graduada en cm. Los datos se procesaron con el programa informático IBM SPSS versión 20.

Resultados: La media del IMC en las mujeres fue de 26,18 (DE ±3,77) frente a 25,76 en los hombres (DE ±3,62). Casi dos tercios (62,57%) tenían sobrepeso, de los cuales el 16% eran obesos. El estudio mostró que el 65% de la carga de peso se registraba entre las enfermeras (de las cuales el 17,20% eran obesas). Además, el 64,9% (de los cuales el 19% eran obesos) del sobrepeso se registró entre los que estaban de guardia o de guardia, seguidos de los que estaban de servicio regular.

Conclusión: El trabajo por turnos altera los patrones regulares de sueño, alimentación y ejercicio, lo que puede dificultar el mantenimiento de un peso saludable.

Palabras clave: Carga de peso, enfermera, hospital, factores de riesgo.

Introduction

Overweight and obesity are defined by the World Health Organisation (WHO) as an abnormal or excessive accumulation of fat in adipose tissue, which can be harmful to health. The resulting diseases are related to the distribution of fat in obese individuals. Thus, in subjects with android obesity there is a higher risk than in those with gynoid obesity[1].

The causes of excess weight are lack of physical activity, eating behaviour, sedentary lifestyle, socio-cultural level and over-consumption of alcohol, in addition to genetic, environmental and psycho-social factors. To these must be added individual biological predispositions related to age, sex and ethnicity[2].

Obesity is considered a major risk factor for chronic conditions such as hypertension, diabetes, hyperlipidaemia and certain cancers[3]. It is also clear that the distribution of body fat can increase the risk of hypertension and other cardiovascular diseases, even in people with an average body mass index (BMI), especially in women[4,5].

In addition to the consequences of overweight on the body and the psychology of individuals, it also has costs associated with reduced productivity at work.

For example, obese employees experience work-related difficulties in terms of the time required to complete tasks and the physical demands of the job. They are also more likely to have more medical visits and hospitalizations than their normal weight counterparts[6-8].

The prevalence of obesity almost tripled globally between 1975 and 2016. For example, in 2016, 39% (38% of men and 40% of women) of adults over 18 were overweight and 13% were obese (11% of men and 15% of women)[9].

Morocco is undergoing a food transition that affects both urban and rural areas due to urbanisation, economic development and globalisation. This is leading to changes in eating habits, the tendency to consume ready-made meals and fast food which contain a high level of salt, sugar and fat 10. Moreover, in Morocco, the prevalence of overweight has evolved between 2001 and 2018 by 41% (from 37.7% to 53%) in the general population, while obesity has almost doubled (from 10.7% to 20%)[11,12].

Studies of overweight have shown that most sectors are affected. Indeed, in Ghana, about 34% of female teachers were overweight, while 27% were obese 13. Among workers at the autonomous port of Abidjan, obesity is 38.1%[14].

Studies among health professionals also suffered from overweight. Thus, working in the health and social care sector is associated with a higher prevalence of obesity[15]. In addition, studies in hospitals have shown that workers who exercise for long hours are more likely to be obese due to changes in body regulation, metabolism and stress[16,17].

In addition, one study showed that the frequency of obesity and overweight was 14.3% and 28.8% respectively in the study population 18. While those conducted in Tunis and Texas hospitals showed a prevalence of overweight and obesity of 43.3% and 25.1% respectively in Tunis and a weight load of 78.1% for those in Texas[19,20].

Moreover, women were the most affected by the phenomenon. Thus, studies carried out in hospitals revealed that obesity was more common among women. Indeed, in the national hospital of Chad 28.2% of women were obese 18. Similarly, in the hospital of Parakou in Benin, the proportion of obese women was 84.3% 2 and in Nigeria, obesity accounted for 62.6%[21].

In Morocco, studies on the subject are rare. In this perspective, the study aims to investigate the prevalence of obesity and overweight as well as the associated factors among the nursing staff of a regional hospital in southern Morocco.

Patients and methods

This is a descriptive cross-sectional study conducted between January 2021 and June 2021 among the nursing staff of the regional hospital centre. The study population was represented by paramedical staff working in the hospital's inpatient and medico-technical departments.

Data were collected by questionnaire for socio-demographic information, nature and habits of work, behaviours (sedentary lifestyle, diet) and perception of obesity and overweight.

Anthropometric measurements were carried out in accordance with WHO recommendations. Weight was measured using a MEDISANA RETRO PSD scale and height was measured using a wall-mounted scale graduated in cm.
The data were processed using IBM SPSS version 20 software.

Ethics: The study was conducted with the free and informed consent of the participants. Survey participants were assured that all data would be used for research purposes only. Participants' responses were anonymous and confidential.

Results

171 caregivers participated in the study. 62% of the participants were female. More than 92% of the study

participants had a higher education level and more than 37% were of Arab ethnicity. As for marital status, more than half of the participants were married and about 34% were single. The study reveals the youthful character of the participants (33.96 ±9.12 years) as more than three quarters of the participants were below the age of 40 years.

The mean BMI for women was 26.18 (SD ±3.77) compared to 25.76 for men (SD ±3.62). 37.43% of the population were of normal weight while 62.57% were overweight, 16% of whom were obese. More than half of the population was on home guard duty (55%) and more than 46% performed their activities in a standing position (**Table I**).

By gender, 36.8% of women were of normal weight and 63.2% were overweight, of whom 18.00% were obese. Among men, 38.5% were of normal weight and 61.50% were overweight, including 13.80% who were obese.

The average BMI by age group shows that all age groups were overweight and that this decreases with age. More than three quarters of the overweight were in the[20-29] and[29-39] age groups, with 42.50% and 33.8% respectively.

Table I: Distribution of the population by socio-demographic characteristics.

Variables	Average ± SD	n (%)
Weight in Kg	71.85±10.21	
Height in cm	1.66±0.06	
BMI in Kg/m²	26.02±3.71	
Age		
[20,29]		62 (36.3)
[30,39]		69 (40.4)
[40,49]		28 (6.4)
+50 ans		12 (7)
Gender		
Male		106 (62)
Female		65 (38)
Ethnicity		
Sahrawi		54 (31,6)
Arabic		64 (37,4)
Berber		53 (31,0)
Marital status		
Married		95 (55.6)
Single		58 (33.9)
Divorced		18 (10.5)
Educational level		
Secondary		16 (7.6)
Higher		158 (92.4)
Working hours		
Residential custody		94 (55)
On-call duty		9 (5.3)
Normal working hours		68 (39.8)
Position at work		
Standing		74 (46.3)
Sitting		53 (31)
Walking		42 (24.6)
BMI in Kg/m²		
-24		64 (37.4)
[25,30[		80 (46.8)
+30		27 (15.8)

According to ethnicity, the weight load was 69.5% among the Berbers (40.7% were obese), compared to 66% among the Arabs (including 22.22% obese) and 64.5% among the Saharawi's (including 37% obese). Furthermore, there is a high prevalence of overweight among the Arab ethnic group (43.75%) compared to 27.5% among the Saharawi's. On the other hand, the Berbers have the highest prevalence of obesity (40.74%).

According to the level of education, the study reveals that almost all of the overweight was recorded among people with a higher level of education.

According to marital status, overweight affected more than half of married people, whereas it was 36.2% among single people and 8.8% among divorced people (**Table II**).

IMC et environnement du travail:

Quant au travail et à son environnement, le recodage du cadre d'appartenance en cadre infirmiers et autres (vu l'effectif réduit des autres cadres) a montré que 65 % de la charge pondérale est enregistré chez les infirmiers (dont 17.20% d'obèses) et 35% chez les autres cadres. La répartition du surpoids selon la fonction exercée au niveau de l'hôpital a montré que 66.2% représentait le personnel soignant dont 16.90% était obèses. En fonction de la position au travail, le surpoids était présent chez 63.8% chez ceux qui travail en position debout alors qu'elle n'est que de 11.2% chez les autres qui marchaient. En ce qui concerne, les horaires de travail, 64.9% (dont 19% d'obèses) du surpoids a été enregistrée chez ceux qui assuraient la garde ou l'astreinte suivi de ceux qui assuraient l'horaire normal (**Table III**).

Table II: Distribution of weight status by socio-demographic characteristics.

Variables	BMI in Kg/m²		
	- 25 Kg/m²	[25,30[Kg/m²	+30 Kg/m²
Age			
[20,29]	21 (32.8)	34 (42.5)	7 (25.9)
[30,39]	28 (43.8)	27 (33.8)	14 (51.9)
[40,49]	7 (10.9)	15 (18.8)	6 (22.2)
+50 ans	8 (12.5)	4 (5.0)	0 (0)
Gender			
Male	25 (39.1)	31 (38.8)	9 (33.3)
Female	39 (60.9)	49 (61.2)	18 (66.7)
Ethnicity			
Sahrawi	22 (34.4)	22 (27.5)	10 (37.0)
Arabic	23 (35.9)	35 (43.8)	6 (22.2)
Berber	19 (39.7)	23 (28.8)	11 (40.7)
Marital status			
Married	33 (51.6)	44 (55)	18 (66.7)
Single	24 (37.5)	29 (36.2)	5 (18.5)
Divorced	7 (10.9)	7 (8.8)	4 (14.8)
Educational level			
Secondary	7 (10.9)	6 (7.5)	0 (0)
Higher	57 (89.1)	74 (92.5)	27 (100)

Table III: Distribution of weight status by work environment.

Variables	BMI in Kg/m²		
	- 24 Kg/m²	[25,30[Kg/m²	+30 Kg/m²
Framework			
nurse	44 (68.8)	52 (65)	20 (74.1)
Other	20 31.2()	28 (35)	7 (25.9)
Working hours			
Guard	31 (50)	50 (64.9)	19 (73.1)
Normally	31 (50)	27 (35.1)	7 (26.9)
Position at work			
Standing	16 (25.8)	51 (63.8)	7 (25.9)
Sitting	21 (33.9)	20 (25)	12 (44.4)
Walking	25 (40.3)	9 (11.2)	8 (29.6)
Function			
Head of unit	6 (9.4)	3 (3.8)	0 (0)
Nursing	45 (70.3)	53 (66.2)	20 (74.1)
Other	12 ()20.3	24 (30)	7 (25.9)

Table IV: Distribution of weight status by lifestyle.

Variables	- 25 Kg/m²	+ 25 Kg/m²
Number of meals per day		
Two	5 (7.8)	11 (10.3)
Three	35 (54.7)	55 (51.4)
+ More than three	24 (37.5)	41 (38.3)
Fast food		
Always	8 (12.5)	15 (14)
Often	22 (34.4)	49 (45.8)
Rarely/never	34 (37.4)	43 (40.2)
Consumption of cooked vegetables		
Always	36 (56.2)	76 (71)
Often	23 (35.9)	27 (25.2)
Rarely/never	5 (7.8)	4 (3.7)
Nibbling		
Always	43 (67.2)	57 (53.3)
Often	9 (14.1)	37 (34.6)
Rarely/never	12 (18.8)	13 (12.1)
Perceived overweight		
Illness	43 (67.2)	57 (53.3)
Sign of beauty	9 (14.1)	38 (35.5)
Sign of wealth	12 (18.8)	12 (11.2)

Perception and Lifestyle:

In terms of lifestyle, among participants consuming three meals a day, overweight accounted for 51.4%, whereas it was 38.3% among those who consumed more than three meals a day. As for the use of fast food, the prevalence of overweight was 60% among those who always or often used it.

The prevalence of overweight was 71% among participants who consumed cooked vegetables daily, while it was 25% among those who consumed them often.

Among those who always ate between meals (snacking), the prevalence of overweight was 53%, while it was 12% among those who rarely or never did so.

Although more than half of the health professionals considered overweight or obesity as a disease, 53% of them are overweight (**Table IV**).

Discussion

The mean BMI for women was 26.18 (SD ±3.77) compared to 25.76 for men (SD ±3.62). 37.43% of the population were of normal weight while 62.6% were overweight, of which 16% were obese. This prevalence is higher than that of the general population. This confirms the results of previous research which revealed a higher prevalence of overweight and obesity among nurses than in the general population[19-22].

By sex, among the obese, 2/3 were women and 1/3 were men. The study by Dovonou, C. A et al showed high proportions for women and very low proportions for men[2]. These results may be explained by the perception of weight as a sign of good health, wealth and beauty in many African countries[23].

By age, 48% of participants under 39 years of age were overweight. The study by Pobee, R. A et al found similar results. Indeed, the study recorded a prevalence of 58.3%[24].

Similarly, our study showed that overweight decreases with age. While the study by Dovonou, C. A et al showed that obesity increases with age[2]. These differences can be explained by the size of the sample, the different context of the studies and the youth of our population.

According to marital status, almost half of the singles and those with secondary education were overweight[20]. Our study found that weight load increases with education. This result was consistent with other studies[18]. This difference can be explained by the meaning given to obesity in our African and particularly Arab societies. Obesity is generally considered a sign of social well-being.

Obesity is a risk factor for chronic diseases, and a number of studies indicate that overweight and obesity are more common among shift workers than among day workers[25,26].

Thus, in our study where paramedics work on a cycle of on-call and off-call, nurses who worked on-call were found to have a 2.029 higher risk of being overweight than those who did not. These results are supported by other studies[27,28]. This can be explained by the nature of paramedical work, which is shift work for most participants.

Conclusion

Shift work disrupts regular sleep, eating and exercise patterns, which can make it harder to maintain a healthy weight.

Conflict of interest

The authors declare that they have no conflict of interest.

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