International Journal Of Scientific And University Research Publication

ISSN No 2364/2018

Listed & Index with
ISSN Directory. Paris

Multi-Subject Journal

Volum : (3) | Issue : 211 |

INTERNATIONAL JOURNAL OF SCIENTIFIC AND UNIVERSITY RESEARCH PUBLICATION

IJSURP
International Journal Research
www.ijsurp.com

Research Paper

CONSUMPTION HABITS IN MOROCCO AND THEIR INFLUENCING FACTORS

Rachida Belloute || Biology Department
Moulay Ismail University
B.P. 11201
Zitoune
Meknes
Morocco,

ABSTRACT **The main objective of this study is to describe eating habits in relation with some influencing factors and to determine the current trends of consumer behavior. It is based on a**

n a structured questionnaire with a sample of 100 ***respondents. The results obtained show that food rhythms of respondents used to be structured. Meals were taken at home with family at a steady pace. Currently, the constraint of time and the work schedule result in irregular eating habits such as skips of meal and high frequency of outside consumption. Consumers do not seem conscious of their diets; the choice of meals consumed outside is based primarily on pleasure. The meals are not diversified. They tend to be high in meat and low in vegetables and fish. These behaviors are influenced by several factors and reflect a nutritional transition to which women and people having a high level of education, especially scientists, are relatively resistant.***

KEYWORDS :choice, preference, meal, food.

INTRODUCTION

Food is the process whereby the body absorbs food and ensures its own operations. It is the foundation of good health. The way we eat positively or negatively influences our health. A balanced diet is essential for normal growth and functioning of our body, while a poorly designed diet, in conjunction with other genetic and environmental factors leads to chronic diseases [1].The current lifestyle threatens to undermine the principles of a healthy diet through the consumption of processed foods with ingredients too purified containing many additives, often of industrial origin (preservatives, dyes, emulsifiers, stabilizers and thickeners), that adversely affect health [2-4], through the in- crease in animal products consumption, and through the progress of food service. Thus the multiplicity of the current supply keeps away the consumers from a safe eating behavior [5].In addition to these consumer practices, we note the excessive use of chemical inputs in agriculture and the use of additives in farming [6]. The emergence of these practices makes the traditional nature-based diet disappear.The Moroccan diet, which is of Mediterranean type, is based on a large consumption of cereals, fruits and vegetables, with limited consumption of animal products. The ready-made foods and the catering out of home have become more common in urban areas favoring the consumption of unbalanced food. This evolution reflects the nutrition transition underway in both rural and urban areas. Coupled with a reduction of the physical activity, these changes are at the origin of the increase in overweight and obesity in the adult population [7-10].Morocco is undergoing the consequences of a deviation of the Mediterranean food model [11] and profound changes in eating behaviors, in relation to changes in the standard of living, of activities and conditions of residence. These changes concern the various components of the population [12]. In this regard, the objective of this work is to know the current consumption mode and habits and to study their influencing factors.

1-MATERIAL AND METHODS

1-1-Studied population

The study involved a sample of 100 respondents who agreed to participate and who were recruited at random (in the street, in parks, in the super markets, outside schools, colleges, and associations). They were aged 12-70 years, of urban and rural origin, belonging mainly to the Meknes-Tafilalet region. They included men, women and children belonging to different social classes, different standards of living, different levels of study and different cultural origins

1-2-Survey methodology

Our survey was transverse by interview (method of face to face), and was conducted using a structured questionnaire to individuals who have agreed to participate. The data were filled on the paper questionnaire. The survey protocol, defined according to the study objectives included questions on: the demographics of each respondent (name, sex, age, marital status, educational level, specialty, profession), physical activity, physiological conditions, history of food, regularity of meals and consumption habits.The survey was conducted between May 2012 and June 2013. The questionnaire consisted of closed and open questions. The collected data were of qualitative and quantitative nature.Before the start of the main survey, the questionnaire was tested with a preliminary sample of 20 respondents to check the under- standing and the conformity of the questions with the objectives sought.

1-3-Statistical Analysis

The statistical analysis of the data was made using SPSS Statistics 20.0 [13] and the software R. 3.0.3 [14]. The procedures were chosen according to the nature of variables. The relationship be- tween quantitative variables was tested by the correlation test and the Principal Component Analysis (PCA) [15]. The relation- ship between qualitative variables was tested by the $\chi 2$ test and the correspondence Analysis (CA) [16, 17]. The relation between a qualitative variable and a quantitative variable was tested either by the analysis of variance (ANOVA) [17, 18] or by the Stu- dent's t-test.The study of the food history of respondents was made by a descriptive analysis. We distinguished for this study the following variables: " traditional meal, "regular meal ", "to eat at home only or in family "; these variables are nominal qualitative. The variable "eating outside home" is a quantitative variable for which we asked the participant to give a grade (/10) reflecting its frequency. The choice of this variable aimed at the comparison of the frequency of consumption outside home between past and present.The study of the consumer habits and their influencing factors was made by the $\chi 2$ test and by the CA. For this study we used the following variables: the choice (what is actually eaten) and the preference (what is liked or preferred) for vegetables, fruits, legumes, fish and meats.The study of the outside consumption frequency, the reason for eating outside and the type of meals chosen was made by PCA. These variables are quantitative; the respondents assigned a grade to every variable level according to its importance.The analysis of the relationships between these variables and the influencing factors, age among others, was made by correlation and PCA. The influence of gender, marital status, undergone treatment, and study specialty was made by Student's t-test or the ANOVA. These variables are nominal qualitative. For ordinal qualitative factors, in particular education level and health status, the analysis of their influence on the respondents' food habits was studied by ANOVA.The study of meals

regularity and the influencing factors was made by the $\chi 2$ test and the CA. For this study we chose the variables "mealtimes ", "frequency of meal skipping", "meals skipped" and "reasons for skipping meals".

2-RESULTS

2-1-Eating history

The obtained results showed that 88% of respondents used to have a Moroccan traditional meal, 79% declared that their meals were regular and 93% eating together as a family. 40% of respondents declared that they never (and 35% rarely) ate outside home.There was a relationship between the variables "traditional meal" and "regular meals" ($p<0.001$). However, the $\chi 2$ test revealed a loose relationship between the variable "eating at home with family" and the variables "traditional meal" ($p =0.097$) and "regular meals" ($p = 0.072$).

2-2-Influence of age

There is a negative and significant correlation($r = - 0.323$, $p<0.001$) between age and the variable "eating outside". A significant relationship exists between age and regular meals taken in family ($p<0.05$). The aged persons said their meals were regular and are eaten at home in family.

2-3 Influence of gender

There is a significant dependence between gender and consumption at home in family ($p<0.05$) on the one hand, and outside eating frequency ($p<0.001$) on the other hand. Women were taking meals at home with family and gave less importance to consumption outside than men

2-4 Influence of studies

There's a highly significant relationship ($p<0.001$) between the studies and the three variables "regular meals", "eating at home with family". Students declared that their meals were not regular, and that they took them frequently alone at home.

2-5-Influence of marital status

There is a significant relationship between marriage and meals at home ($p<0.05$). Indeed the couples had their meals at home in family compared to the unmarried.

2-6-The food consumed Current consumption habits and the influencing factors This study contains two parts, the first one concerning the consummate food of which we chose the following: red and white meats, legumes, fishes, fruits and raw vegetables. The second part concerns the regularity of the meals and the frequency, the reasons and selected dishes in consumption outside home.

-The obtained results show that:

ü 79% of respondents eat red and white meats 3 times a week or more, 16% eat them 1-2 times a week and 5% eat them rarely to never.

ü 15% eat legumes 3 or more times per week, 60% eat them 1 to 2 times, and 25% eat them rarely to never.

ü 5% eat fish three or more times a week, 68% eat them 1 to 2 times, and 27% eat them rarely to never.

ü 20% of respondents eat fruit 3 times or more per day, 64% eat them 1-2 times a day and 16% eat them rarely to never.

ü 65% of respondents accompany the main course with raw or cooked vegetables according to the season.We also studied the relationship between selection (choice) and preference for these foods. A highly significant dependence was found between choice and preference for vegetables ($p<0.01$) fruit ($p<0.001$), legumes ($p<0.001$), and red and white meats ($p<0.001$). However, the choice was independent of preference in fish ($p>0.05$).

Legend: Choice of Vegetables (Veg.C), Preference for Vegetables (Veg.P), rarely to never (Rar-Nev), 1 to 2 times per week (1-2 T/W), 3 times and more per Week (3 T/W & More).

Legend: Choice of Fruits (Fruits.C), Preference for Fruits (Fruits.P), rarely to never (Rar-Nev), 1 to 2 times per week (1-2 T/W), 3 times and more per Week (3 T/W & More).

Legend: Choice of legumes (legum.C), Preference for legumes (legum.P), rarely to never (Rar-Nev), 1 to 2 times per week (1-2 T/W), 3 times and more per Week (3 T/W & More).

Legend: Choice of meats (M_R_W.C), Preference for meats (M_R_W.P), rarely to never (Rar-Nev), 1 to 2 times per week (1-2 T/W), 3 times and more per Week (3 T/W & More).

Legend: Choice of Fruits (Fish.C), Preference for Fruits (Fish.P), rarely to never (Rar-Nev), 1 to 2 times per week (1-2 T/W), 3 times and more per Week (3 T/W & More).

2-7-Influence of level of education

People who have a lower level than high school diploma prefer to eat meats more ($p <0.05$) than people who have a higher level of studies. The latter prefer to eat balanced meals with vegetables, legumes, fish, and cereals.

Legend: Preference for meats (M_R_W.P), rarely to never (Rar-Nev), 1 to 2 times per week (1-2 T/W), 3 times and more per Week (3 T/W & More), lower level than baccalaureate (Lower- Bac), Higher level than baccalaureate (Upper-Bac), Level of Edu- cation (L_E).**Fig. 6:** Influence of level of studies on the preference of meat.

2-8-Influence of gender

Women eat more raw vegetables than men ($p <0.05$).

2-9-Influence of medical treatment

People who undergo a medical treatment prefer less fruits ($p=0.01$) and meats ($p<0.05$).

2-10-Influence of cultural factors

The cultural factors have a big influence on the food habits ($p<0.01$). People who declare being attached to their culture eat legumes at least 3 times a week; the others eat them at most twice a week.

2-11-Influence of specialty

The people who followed scientific studies prefer to eat meats not more than 1 to 2 times a week ($p<0.05$), whereas people without specialty (illiterate or having a low level of education) prefer to eat meats at least 3 times a weeks (fig. 7)

Legend: Preference for meats (M_R_W.P), rarely to never (Rar-Nev), 1 to 2 times per week (1-2 T/W), 3 times and more per Week (3 T/W & More), Without specialty (WS), Arts and human

2-12-Meals regularity

All respondents take four meals a day, breakfast, lunch, teatime snack, and dinner. Concerning the regularity of meals the ob- tained results reveal that:

ü 35% of respondents say they rarely to never skip a meal;

ü 35% say they skip a meal 2 to 3 times a week;

ü 30% skip a meal 4 or more times per week.There was a significant relationship between:

ü The skip of meal and breakfast ($p<0.05$), and;

ü The skip of meal and dinner ($p<0.05$).

These results show that skipped meals are mainly breakfast and dinner.In addition, the main reasons for skipping meals, especially breakfast and dinner, are justified mainly by lack of appetite, lack of time and seeking to lose weight. Some skipped meals are not justified and some others are explained by aversions or dis- eases. The results obtained (Fig. 8) show the existence of a significant relationship between the frequency of meal skips and their reasons reported by respondents ($p<0.001$)

Legend: Reasons of meal skips (MS_reason), Meal skips (MS), rarely to never (Rar-Nev), 2 to 3 times per week (2-3 T/W), 4 times and more per Week (4T/W & More).Concerning consumption outside home, 65% of respondents eat rarely or never outside, 23% take meals outside 1 to 2 times a week, and 12% take them 3 times or more per week. 2% of re- spondents said they never eat outside due to economic or hygienic reasons.The frequency of meals eaten outside is highly related to the available-time factor ($p<0.001$) and to the work condition ($p<0.001$).Regarding the types of meals eaten outside, we found that 17% of respondents gave the highest grade (10) to balanced foods with a good amount of vegetables, 6% gave this grade to fatty and savory foods and 77% selected their meals according to their pleasure without wondering whether their actions are healthy or not.Furthermore, the chosen meals were strongly related to the frequency of outside catering ($p<0.05$). Individuals who frequently eat outside choose their meals according to their pleasure, not the meal nutritional quality. Thus, for the self-assessment of the respondents of their food habits, 7% of respondents thought their eating habits were pretty bad, 49% reported that their habits were average, 36% considered them good, and 8% believed they were very good.The regularity of the meals and consumption outside were modulated by age, gender, level of education, and marital status.

2-13-Influence of age

Young adults take more meals outside ($p<0.05$) and skip more frequently the breakfast ($p<0.001$) and dinner ($p<0.001$) than elderly individuals.

2-14-Influence of gender

Women skip dinner more often than men do ($p<0.01$). The frequency of consumption outside is also gender dependent ($p<0.01$). Men justify their consumption outside, more than women, by the constraint of time ($p <0.05$), work ($p<0.01$) and pleasure ($p<0.01$).

2-15-Influence of studies

People who have a high level of studies eat outside more than individuals who have a level less than or equal to high school diploma ($p<0.05$). They justify this consumption frequency by the constraints of time and work. However, the level of studies has no influence on the skip of meals.

2-16-Influence of marital status

The skip of Meals for married people are less common than among single persons ($p<0.05$).

2-17-DISCUSSION

The objective of eating history studies is the comparison be- tween the current and previous consumer habits of the respondents. The obtained results show that respondent previous food rhythms were not very unstructured. The majority of individuals had their meals at home with family at a steady pace. This consumer behavior was influenced by several factors including age, gender, studies, and marital status. Women were taking meals at home with family and gave less importance to consumption out- side than men. This behavior is not limited to women in Morocco; an American study indicated that more attention to health- food relationship is paid by women than men [19]. Studies also plays important role in consumption habits. Indeed, students declared that their meals were not regular, and that they took them frequently alone at home. These results can be explained either by force of time, or by the conflict with the schedule of the other family members. Studies showed that meals in family improve food habits, especially in children [20]. Indeed the couples had their meals at home in family compared to the unmarried. This effect confirms, but is confounded to the effect of age on the habits, since married individuals are generally old.Concerning the consummate food, we can deduce that fish rep- resents only a low part in the diet of the majority of the respondents like what was reported by [21] The percentage of the eaters of fish turns out very low. It could be due to two factors; the first one is its rarity in the region, and the second is the lack of time, for women who work, to prepare it. The low consumption of fish could also be explained by the high price of this type of food. A number of studies [22- 24] have shown that the low proportion of fish in the diet deprives many people of its numerous advantages. In the other hand, the results showed the existence of an excessive consumption of white and red meats. Consumer hab- its were influenced by several factors in particular sex, medical treatment, level of education, specialty and cultural factors. In point of fact, Women eat more raw vegetables than men. These results confirm those which showed that women are more careful to the nutritional properties of food [25].Other studied factors, in particular age, marital status, and diet undergone had no impact on the studied food habits.Eating rhythms of respondents were previously structured. The majority of individuals used to have their meals at home with family at a steady pace. However, currently, more than half of respondents skip one or more meals at least 2 times a week. The meals skipped are mainly breakfast and dinner. These skips of meal are justified by the constraints of time, lack of appetite and weight loss. Furthermore, 35% of respondents take meals out- side their home at least 1 to 2 times a week. Meals outside are selected based primarily on pleasure. In addition, meal skips and outside eating are gender and age dependent.This study showed the existence of an excessive consumption of white and red meats, and a low consumption of vegetables and fish. These habits are shaped by several factors related to the individual or to the context.

CONCLUSION

These feeding practices, reflecting a nutritional transition, cou- pled with reduced physical activities, show worrisome trends that may be responsible for the progression of different health problems. Nevertheless, women and people having a high level of education, especially scientists, are relatively resistant to these trends.

ref_str

1. **Seignalet, J.** (2012), “L'alimentation ou la troisième médecine”, éditions du Rocher, Collection : Equilibre, pp. 1-770.
2. Apfelbaum, M., and Romon, M. (2009), “Additifs alimentaires”, Diététique et nutrition (7ème édition), 470-486.
3. **Gallen, C.,** and Pla J. (2013), “Allergie et intolérance aux additifs alimentaires”, Revue française d’allergologie, 53, S9-S18.
4. **Sauvage, C.** (2010), “Controverse l’hypersensibilité aux additifs alimentaires est une réalité clinique : pour”, Revue française

d'allergologie, 50, 288–291.
5. **Remesy, C.** (2006), "Produits frais, produits bruts… la base incontournable d'une alimentation saine", Journal de pédiatrie et de pué- riculture, 19, 192-193.
6. **Fleischer, G.** (2006), "Les produits chimiques utilisés en agriculture – sont-ils nécessaires ou superflus?", Agriculture & développement rural, 1, 51-54.
7. **Benjelloun, S., Bade, E.,** and Razès, M. (2011), "Profil Nutritionnel du Maroc", Division de la nutrition et de la protection des consommateurs, FAO, 1-57.
8. **Benjelloun, S.** (2002), "Nutrition transition in Morocco". Public Health Nutrition, 5 (1A), 135-140.
9. **El Rhazi, K., Nejjari, C.,** Berraho, A., Abda, N., Zidouh, A. and Rekkali B. (2009), "Prévalence de l'obésité et les principaux facteurs sociodémographiques associés au Maroc", Revue d'Epidémiologie et de Santé Publique, 57 (S1), S25.
10. **Sebbani, M., Elbouchti, I.,** Adarmouch, L. and Amine, M. (2013), "Prevalence of obesity and overweight among children in primary schools in Marrakech, Morocco", Revue d'Épidémiologie et de Santé Publique, 61 (6), 545–549.
11. **Soualem,A., Ahami, A**., Aboussaleh, Y., Elbouhali, B., andBonthoux, F. (2008), "Le comportement alimentaire des préadolescents en milieu urbain au nord-ouest du Maroc", Revue Francophone de Clinique Comportementale et Cognitive, 13 (4), 39-46.
12. **Aboussad, A., Cherkaoui, M.,** and Vimard, P. (2010), "Santé et vulnérabilités au Maroc", 1er Edition, Imprimerie et Papeterie El Watanya, Marrakech, 1-256.
13. **Meulman, J.J.,** and Heiser, W. J. (2011), IBM SPSS Catégories 20, Manuel. IBM Corporation 1989, 1- 325, [Online] Available: URL: http://ibm-spss-statistics.soft32.com/.
14. **Core Team, R.** (2014), "R: A language and environment statistical computing". R. foundation for statistical computing, Vienna, Autriche, [Online] Available: URL: http://www. R-project.org/.
15. **Morrison, D.F.** (1978), "Multivariate Statistical Methods", 2nd ed., McGraw-Hill, Singapore, 415p.
16. **Benzecri, J.P.,** and Benzecri, F. (1983), "La pratique de l'analyse des données", Tome 1, Analyse des Correspondances, exposé élémentaire, Paris: Dunod.
17. **Stafford,J.,** and Bodson, P. (2006), "L'analyse multivariée avec SPSS, presses de l'université de Québec 258 p.
18. **Bertrand, R**. (1986), "Pratique de l'analyse statistique des données", Sainte-Foy, presses de l'université de Québec,379 p.
19. **Kan, K ., andTsai, W.D.** (2004), "Obesity and risk knowledge", J Health Econ, 23(5), pp. 907-934.
20. **Fulkerson, J.A., Rydell, S**. (2008), "Family meals: Perceptions of benefits and challenges amoug parents of 8 to 10 year-old children Journal of American Dietetic Association, 108, 706-709.
21. **Houbaida, M.** (2008), " Le Maroc végétarien, 15ème -18ème siècles: Histoire et biologie ", éditions Wallada, Casablanca, 149 p.
22. **Bang, H.O. ,Dyerberg, J.**, Nielsen, A.B.E. (1971), "plasma lipid and lipoprotein pattern in greenlandic west-coast es- kimos", The Lancet , 297 (7710) ,1143 – 1146.
23. **Rizos, E.C., Ntzani, E.E.,** Bika, E., Kostapanos, M.S., and Elisaf, M.S. (2012), "Association between omega-3 fatty acid supplementation and risk of major cardiovascular disease events: a systematic review and meta-analysis", The Journal of American Medical Association,308 (10),1024–1033.
24. **Hooper, L., Thompson, R.L.**, Harrison, R.A., Summerbell, C.D., Ness, A.R., Moore, H.J., Worthington, H.V., Durrington, P.N., Higgins, J.P., Capps, N.E., Riemersma, R.A., Ebrahim, S.B., and Davey Smith, G. (2006), "Risks and benefits of omega 3 fats for mortality, cardiovascular disease, and cancer: systematic review", British Medical Journal, 332(7544), 752-760.

IJSURP Publishing Academy

International Journal Of Scientific And University Research Publication

Multi-Subject Journal

Editor.

International Journal Of Scientific And University Research Publication

+965 99549511

+90 5374545296

+961 03236496

+44 (0)203 197 6676

www.ijsurp.com