Journal Homepage: -www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/19961
DOI URL: http://dx.doi.org/10.21474/IJAR01/19961

RESEARCH ARTICLE

EVALUATION OF GERIATRIC PRACTICES: SURVEY OF 213 PATIENTS

I. Zhim[1], M. Belhouari[1], S. Rhazzar[-2] and Y. Bousliman[2]

1. Pharmacy Unit, Mohammed V Military Training Hospital.
2. Toxicology Laboratory, Faculty of Medicine and Pharmacy, Rabat.

Manuscript Info

Manuscript History
Received: 19 September 2024
Final Accepted: 27 October 2024
Published: November 2024

Key words:-
Geriatrics, Aging, Health, Drugs, Epidemiology

Abstract

Introduction: Ageing makes the elderly prone to illness and pathology. Polymedication and psychosomatic vulnerability are factors to be taken into account in geriatric assessment.

Materials and methods: Our study is epidemiological, descriptive, analytical and cross-sectional, aiming at a global geriatric assessment at the pharmacy counter.

Results: Our 213 patients, aged between 50 and 93, were predominantly female, with a median age of 66. Arterial hypertension, metabolic diseases and mental activity disorders were common pathologies in our population. 84% of our patients were polypathological and 27% were polymedicated with 3 to 14 medications taken daily. 61% of our elderly subjects had medical coverage. 88% of patients were loyal to their treating physicians. Non-adherence, inappropriate prescriptions and self-medication were the most common medication problems in our study.

Conclusion: Our work highlights the complexity of the elderly person, which makes medical assessment in geriatrics a delicate and complex process compared with conventional medical assessment.

Introduction:-

The ageing of the population appears to be a global phenomenon. Indeed, old age is not an illness, but rather an inevitable physiological fact of life. The net increase in the percentage of elderly people worldwide in recent years represents a challenge that all countries are constantly facing.

The high level of care required by the elderly places a heavy burden on economies.

Morocco, like other countries around the world, has been facing the phenomenon of geriatrics linked to an ageing population for many years. The proportion of this population is expected to rise to 11.5% by 2030. [1]

Aging is nothing more than a decline in the capacity and performance of the various organs and the functions that depend on them, with a reduction in the subject's ability to adapt. Added to this are the many chronic diseases that are likely to decompensate during the course of an intercurrent acute pathology.

Our project arose from the observation that efforts in the field of geriatrics in Morocco remain too timid, and also from the paucity of Moroccan studies on drug consumption in the elderly and its consequences. We therefore set

Corresponding Author:-I. Zhim
Address:-Pharmacy Unit, Mohammed V Military Training Hospital.

ourselves the main objective of our study, a comprehensive and detailed geriatric assessment at the pharmacy counter.

Materials and Methods:-

In order to reach our target, we decided on a descriptive, analytical and cross-sectional epidemiological study.

In order to carry out our work, we included all patients aged fifty or over presenting themselves at the pharmacy counter for one of the following purposes: seeking prescription treatment, asking for advice, self-medication or all three.

Anyone under the age of fifty was excluded, as were all elderly subjects whose cognitive abilities did not allow them to answer the questions.

The answers collected from the oral interview, based on the components of the standardized global geriatric assessment proposed by the professional version of the MSD Manual (Merck Sharp & Dohme Corp., a subsidiary of Merck & Co., Inc., Kenilworth, NJ, USA), were entered into Microsoft EXCEL and then processed using EPI INFO software version 7.2.2.6.

Anonymity and confidentiality were ensured at the time of data collection, and patient names were not included in the information collected.

Results:-

During this period, we collected 213 operating forms, representing a significant sample of the number of elderly people admitted to the pharmacy counter. Our patients were questioned on several points, which we chose to present mainly under five headings after data collection**.**

Section I: General Geriatric Assessment Data

For our sample, aged between 50 and 93, the gender breakdown showed that men represented 35.8% of patients, or 76 cases, while women accounted for 64.2%(FigureI), with a median age of 66. Most of our patients lived with their families (Table I). Of the 213 patients selected, 132 had medical coverage, representing 61.97% (TableII).

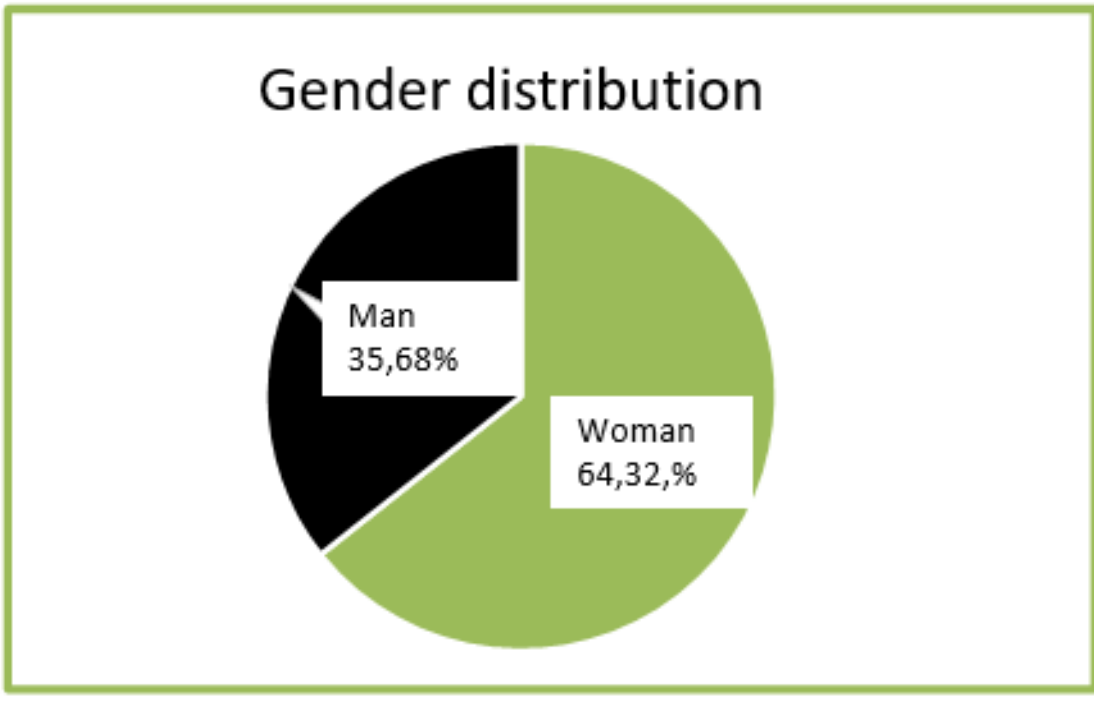


Figure I: Graph of gender distribution

Table I:- Prevalence measurements for single-patient households.

Patients living alone	workforce	Total prevalences	Cumulative percentages	95% confidence intervals
no	194	91,08%	91,08%	86,42%-94,54%
yes	19	8,92%	100,00%	5,46%-13,58%
Total	213	100,00%	100,00%	-

Table II:-Measures of prevalence of medical coverage for patients surveyed.

MEDICAL CARE	workforce	Total prevalences	Cumulative percentages	95% confidence intervals
No	81	38,03%	38,03%	31,48%-44,91%
Yes	132	61,97%	100,00%	55,09%-68,52%
Total	213	100,00%	100,00%	-

Socio-professional activity, physical autonomy, patient loyalty to their GP, as well as abuse and bad habits, are all points to which our patients responded, and which we have also included in this first section dedicated to general geriatric assessment data **(Table III).**

Table III:- Association of general geriatric data with age.

Professional activity	workforce	Total prevalences	Cumulative percentages	95% confidence intervals
yes	10	4,69%	4,69%	2,27%-8,46%
No	203	95,31%	100,00%	91,54%-97,73%
Total	213	100,00%	100,00%	-
Fixed prescriber	Workforce	Total prevalences	Cumulative percentages	95% confidence intervals
No	24	11,27%	11,27%	7,35%-16,30%
yes	189	88,73%	100,00%	83,70%-92,65%
Total	213	100,00%	100,00%	-
Physical autonomy	Workforce	Total prevalences	Cumulative percentages	95% confidence intervals
Assigned	22	10,33%	10,33%	6,59%-15,22%
Normal	191	89,67%	100,00%	84,78%-93,41%
Total	213	100,00%	100,00%	-

Aging is certainly a risk factor for many pathologies. With age, the accumulation of diseases and their interactions within a given individual leads to polypathology. This phenomenon was observed in most of our patients, and is presented in the second section.

Section II: Pathologies And Polypathology In The Elderly In Figures

Eighty-four percent of our patients were polypathological (Table IV). The conditions from which our patients suffered were mainly: arterial hypertension (45%), sleep disorders (40%), type 2 diabetes (25%), psychobehavioral disorders (20%), angina pectoris, heart failure, or other disorders represented with their prevalences in the (figure II).

Table IV:- Measures of prevalence of patients with polypathology.

Multi-disease patients (Two or more pathologies per patient)	Workforce	Total prevalences	Cumulative percentages	95% confidence intervals
No	34	15,96%	15,96%	11,31%-21,59%
yes	179	84,04%	100,00%	78,41%-88,69%
Total	213	100,00%	100,00%	-

Analysis of our results showed statistical significance for the associations: Age-Pathologies (figureIII), Age-Polypathology/Polymedication, Polypathology-Chronic diseases of old age **(table V).**

Table V:- Analysis of associations between polypathology and diseases of old age.

Analysis tools Statistics			Exposure variables (explanatory)			
			Diabetes I	Diabetes II	HTA	Angor/IDM
Statistical significance of the association	Uncorrected X2 tests	X2 Observed	-	0,7105	13,1016	-
		P-value	-	0,3992778818	0,0002950423	-
	Yates correction	X2 Observed	1,0357	-	-	4,1163
		P-value	0,3088315964	-	-	0,0424707475
	Test Exact de Fisher	P-one-sided value	0,1534933130	0,2658471636	0,0001920847	0,0096575445
		P-value bilateral	0,2656197138	0,5389144209	0,0002831682	0,0171902505
	Kurska-Walis test	H value	7,3571	4,5247	24,0672	10,8942
		P-value	0,0067	0,0334	0,0000	0,0010
Strength of the association	Odds Ratio	OR	2,5974	1,4415	4,9349	Non défini*
		IC à 95%	0,5855-11,5224	0,6139- 3,3851	1,9487-12,4972	Non défini*
	Relative risk	RR	2,3226	1,3650	3,9768	Non défini*
		IC à 95%	0,5900- 9,1436	0,6540- 2,8489	1,7176-9,2077	Non défini*
	Excess risk	RD%	9,7969	4,6349	18,2254	18,0851
		IC à 95%	-1,4728 à 21,0666	-5,5777 à 14,8475	9,0569 à 27,3939	12,5831 à 23,5871

***OR, RR and their 95% CIs not defined because at least one observed number in the contingency table is zero.**
MI = Myocardial infarction.

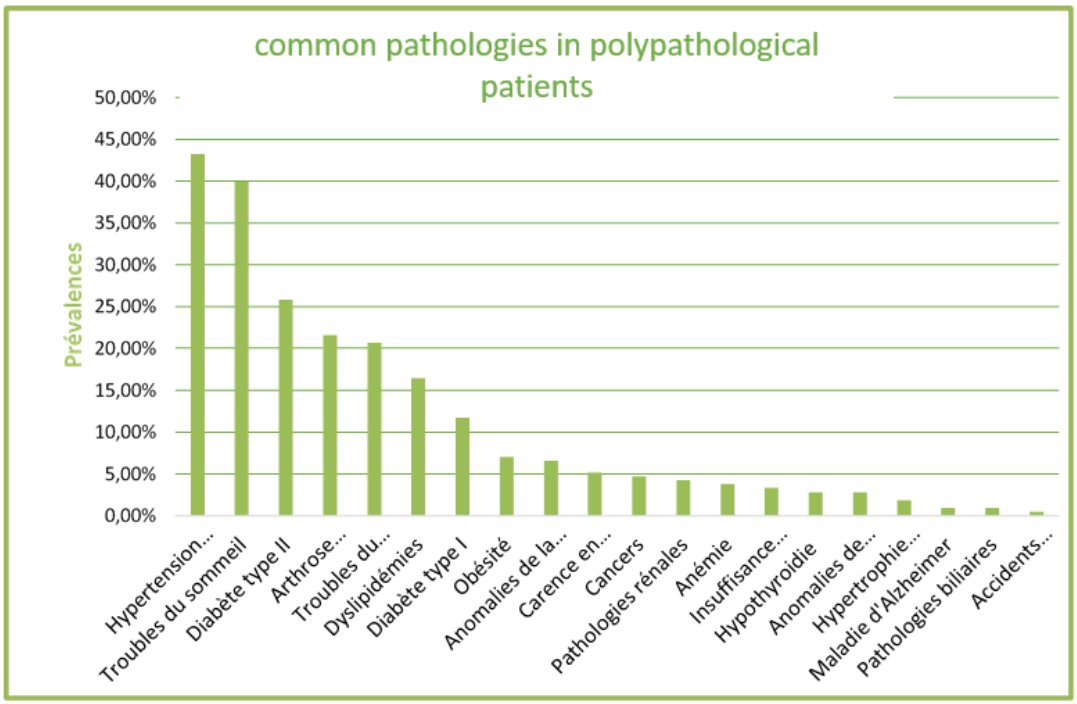
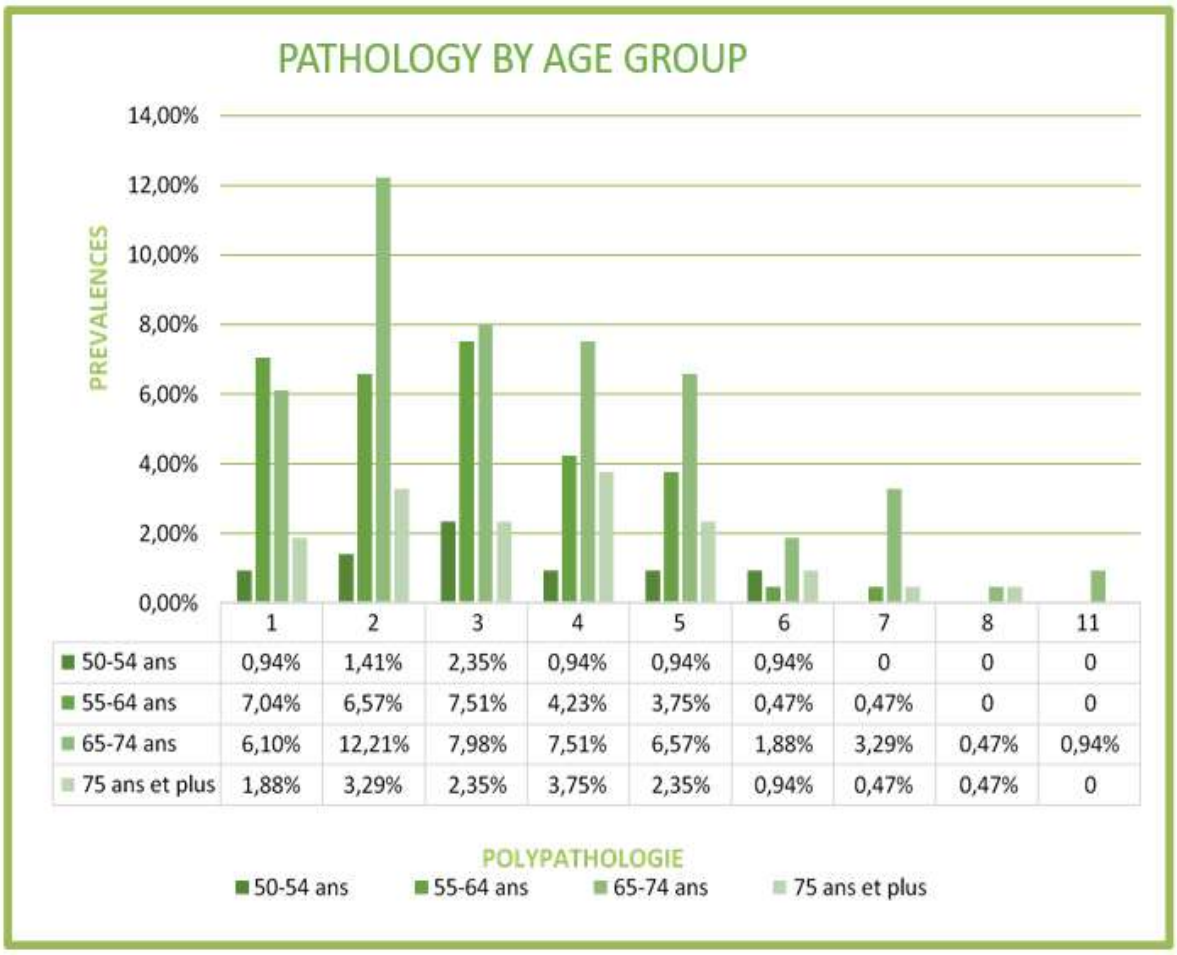


Figure II. Prevalence of the most frequent pathologies in multi-pathological patients



	1	2	3	4	5	6	7	8	11
50-54 ans	0,94%	1,41%	2,35%	0,94%	0,94%	0,94%	0	0	0
55-64 ans	7,04%	6,57%	7,51%	4,23%	3,75%	0,47%	0,47%	0	0
65-74 ans	6,10%	12,21%	7,98%	7,51%	6,57%	1,88%	3,29%	0,47%	0,94%
75 ans et plus	1,88%	3,29%	2,35%	3,75%	2,35%	0,94%	0,47%	0,47%	0

Figure III. Distribution of polypathology prevalence by age group

In summary, polypathology in the elderly requires a management approach that takes into account the complexity of the situation, since it is often associated with increased drug consumption: the subject of section III.

Section Iii: Elderly People And Drug Consumption

The accumulation of pathologies in our population prompted us to delve deeper into our questioning, which revealed a high level of medical consumption of different drug classes (figure IV). Polymedication is clearly associated with an increased risk of overdose, drug interactions, adverse reactions and medication errors in this fragile population. Most of these drugs are prescribed on a chronic basis, the most frequently encountered being antihypertensives with a prevalence of 46.95%, followed by antidiabetics at 40.85% .

Section Iv: Polymedication And Drug-Related Problems In The Elderly

The elderly are mainly concerned by polymedication and its consequences. Indeed, 27.23% of patients in our series were polymedicated (Table VI), taking between 3 and 14 drugs a day (Table VII). Women predominated in 15.96% of cases (for polymedications exceeding 5 drugs) (Figure V). The risk of drug interactions was the main drug-related problem in our population (Table VIII).

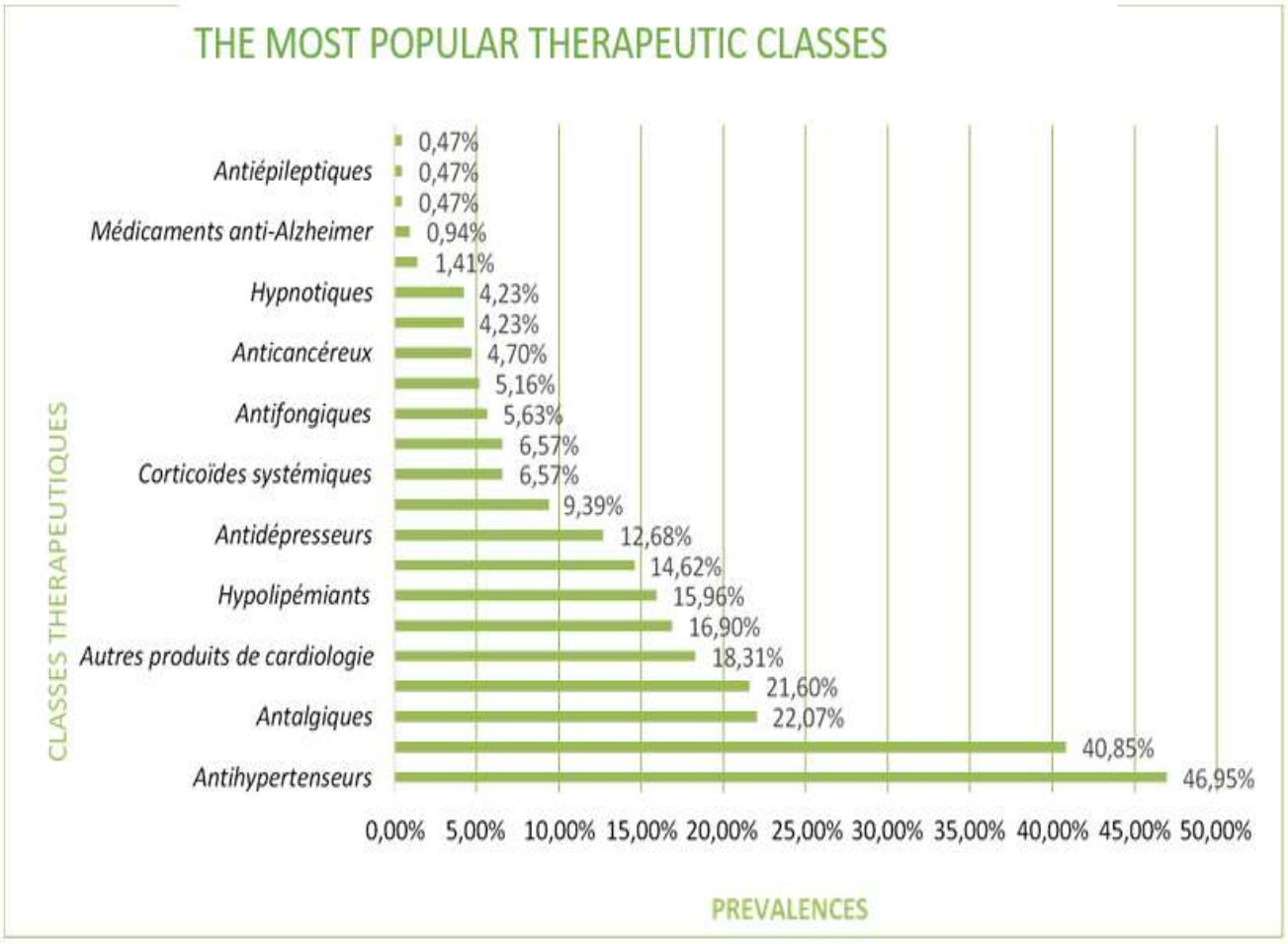


Figure IV. Distribution of therapeutic classes most frequently used by patients surveyed

This increased drug consumption is justified by the polypathology and specific symptoms affecting this segment of the population. This can only expose our patients to iatrogenic risks. In this respect, we have attempted to develop the consequences of poly-medication, as well as the various drug-related problems, in section IV.

Table VI:- Descriptive statistics for polymedication in the geriatric population surveyed.

Polymedication: Qualitative aspect (patients on 5 or more molecules)				
Presence of polymedication	Workforce	Total prevalences	Cumulative percentages	95% confidence intervals
No	155	72,77%	72,77%	66,27% - 78,63%
yes	58	27,23%	100,00%	21,37% - 33,73%
Total	213	100,00%	100,00%	-

Table VII:- Descriptive statistics for medication use in the geriatric population surveyed.

Polymedication: Quantitative aspect				
Number of molecules per patient	Workforce	Total prevalences(n=213)	Cumulative percentages	95% confidence intervals
0 *	1	0,47%	0,47%	0,01-2,59%
1	29	13,62%	14,08%	9,31-18,96%
2	49	23,00%	37,09%	17,53-29,05%

3	45	21,13%	58,22%	15,85-27,23%
4	31	14,55%	72,77%	10,11-20,02%
5	25	11,74%	84,51%	7,74-16,84%
6	15	7,04%	91,55%	3,99-11,35%
7	6	2,82%	94,37%	1,04-6,03%
8	5	2,35%	96,71%	0,77-5,39%
9	3	1,41%	98,12%	0,29-4,06%
10	1	0,47%	98,59%	0,01-2,59%
11	1	0,47%	99,06%	0,01-2,59%
12	1	0,47%	99,53%	0,01-2,59%
14	1	0,47%	100,00%	0,01-2,59%
Total	213	100,00%	100,00%	-

*** Patient not answering questions about medication use.**

Table VIII:- Numbers and prevalence of certain drug-related problems in polymedication patients.

Drug-related problems associated with polymedication	Workforce	Relative prevalences*	Total prevalences (nT=213)
Overdose (n=16)	3	18,75%	1,41%
Risk of drug-drug interactions (n=179)	57	31,84%	26,76%
Risk of drug-food interaction (n=181)	54	29,83%	25,35%
Non-adherence (n=66)	21	31,82%	9,86%
Potentially inappropriate medications in elderly subjects (n=123)	42	34,15%	19,72%
Drugs to be used with caution in elderly subjects (n=93)	37	39,78%	17,37%

***Relative prevalences: nT = Total number of patients with the drug problem.**

Section V: Geriatric Care In The Study Population

As a result of multiple chronic illnesses, the elderly are increasingly consulting and moving from one medical establishment to another. During the period of our study, 43.10% of the polymedics in our study population reported having been hospitalized, and 32.89% had been hospitalized at the time of the survey. Of the 44 patients who had undergone surgery, 36.36% were on polytherapy (Table IX).

Table IX:- Numbers and prevalence of patients who have ever received inpatient medical care.

	workforce	Total prevalences (nT=213)	95% confidence intervals
Hospital nursing	85	39,91%	33,28%-46,82%
Durable medical equipment for hospitals	17	7,98%	4,72%-12,47%
Intravenous therapy in hospital	43	20,19%	15,01%-26,21%
Dialysis	3	1,41%	0,29%-4,06%
Parenteral or enteral nutrition	8	3,75%	1,64%-7,27%
Diagnostic procedures	172	80,75%	74,81%-85,82%
Hospitalization	72	35,68%	29,25%-42,51%
Surgical procedures	44	20,66%	15,43%-26,72%
Day care	37	17,37%	12,54%-23,14%
Emergency care	55	25,82%	20,08%-32,25%

Discussion:-

The results of our study go hand in hand with the results of several studies carried out in this direction, moreover the age range most represented in our series is 65 to 74 years, and the average age noted was 66 years. This was cited by the Haute Autorité de Santé in its methodological note (based on INSEE 2013 data) [2], of "la prise en charge des personnes âgées polypathologiques en soins primaires", which had noted an increase in the population of patients aged 65 or over, and that on January 1, 2013, 17.5% of the French elderly population were over 65. The female predominance also observed in our study is the same on an international scale, with the Institut National de la

Statistique et des Etudes Economiques (INSEE), which collects, analyzes and disseminates information on the French economy and society, making the same observation, on the preponderance of women in the elderly population, in a report on senior citizens published in 2019.[3]The link between normal aging and age-related diseases has been the subject of several studies in the field of geriatrics. For example, the 1986 study by Jacob A. BRODY and Edward L. SCHNEIDER classified diseases diagnosed in the elderly as age-related and age-dependent. [4]

In our survey, 84.04% of elderly people had two or more diseases, compared with 15.96% who had no associated defects. This result is similar to that of Z. Mokrani [5], who found that elderly people had an average of 2.4 pathologies, with cardiovascular pathology predominating at 70.6%. No link was found between gender and the risk of cardiovascular disease or diabetes.

Typically afflicted with chronic diseases, defined by the WHO as "health problems that require long-term care (over a number of years or decades), their common feature is that they systematically affect the social, psychological and economic dimensions of the patient's life" [6], the elderly require medication to manage these conditions. As a result, these patients often have several prescriptions, which may come from different doctors, and are sometimes self-medicated. In addition to the risks associated with polypathology, there are also those associated with polymedication and iatrogenic medication.

This is explained by the fact that the elderly become more sensitive to drug interactions and their adverse effects than younger subjects, due to the effects of aging on the body and less resistance to drug aggression. Indeed, physiological aging leads to changes in drug pharmacodynamic and pharmacokinetic parameters. An American study showed that 18% of people over 65 took at least 10 drugs a day [7].in our study, two participants reporting 11 pathologies were the only ones to take 11 and 14 drugs a day. Their polymedication was associated with polypathology and chronic morbidities (type 1 diabetes, angina/myocardial infarction, dyslipidemia, arterial hypertension): these elements are risk factors for polymedication according to the analysis of our results.

Overall, the prevalence of diseases in the elderly varies between geriatric surveys. Sample size, selected geriatric age threshold, study setting, institutions where participants are collected, time and geographical area are all factors that influence the prevalence of diseases of old age and the strength of the association that may exist between age and pathologies. A comparison of our results with 2011 data from the Caisse Nationale de l'Assurance Maladie des Travailleurs Salariés (CNAMTS, France) [8] shows that the average number of diseases increases with age, with patients aged 75 and over accumulating the most diseases. The difference in the average number of pathologies observed in the two studies highlights the vulnerability of the Moroccan geriatric patient population. These differences can be explained in part by the nature of the diseases included in the study.

Polymedication is one of the major problems in geriatrics, where numerous studies associate advancing age with polymedication in both qualitative and quantitative terms. The analysis of our results is in line with data from the 2018 National Survey of Family Health Protection in Morocco (ENPSF) [9], which revealed the absence of correlation associating polymedication with age and gender.

Drug iatrogenicity - defined by the WHO as any harmful and unintended response to a drug that occurs at doses used for prophylactic, therapeutic or diagnostic purposes [10]; and the risk of drug interactions, are the consequences of this polymedication that intertwine and revolve around non-adherence to treatment. Thus, good adherence is not an end in itself, but a good tool for ensuring therapeutic satisfaction. The term "treatment adherence" is increasingly used to avoid the controversial image of non-adherence, which reflects a certain discordance in the doctor-patient relationship. Adherence in the elderly is a highly complex behavior that is difficult to assess, due to the heterogeneity of the diseases and populations studied, the absence of conventional methods defining a "gold standard", and the scarcity of studies on the adherence of elderly patients to treatment [11]. There is still a tendency to link adherence to the patient's adapted and active behaviour alone, but this overlooks the main components [12], which govern patient adherence to treatment, namely: the patient, the prescriber and the pharmacist.

The patient:

Poor patient compliance with treatment is often involuntary, but can sometimes be intentional. Elderly patients, by taking medication throughout the day without understanding the purpose of each treatment, end up taking some that

they find useless, especially in the absence of symptoms or signs of improvement between the time the medication is taken and the onset of effect. Adherence is therefore an interpersonal process in which the patient's motivation to maintain treatment cannot be ensured without organization and discipline, which themselves depend on conditions linked to: the disease, the treatment, the patient and the relationship of trust between patient and healthcare professionals. [10]

Prescriber:
An observational study [13] in which the adherence of 100 elderly, multi-medicated hospitalized patients was monitored in two phases: at the time of hospitalization and three months after discharge. The results of this study confirm the decrease in adherence to treatment, from 45% at the time of hospitalization to 30% three months after discharge. Hospitalization was also and reciprocally linked to a high risk of iatrogenic drug interactions. In a literature review by the French National Authority for Health (HAS), 5.2% of hospital admissions are linked to iatrogenic accidents, with the rate of drug interactions ranging from 16.6% to 60.6% of cases [14]. According to the same source, the errors leading to iatrogenic accidents are mainly linked to inappropriate prescriptions for both hospitalized and home-care patients, with errors in drug administration being added when the patient is hospitalized.

Before Prescribing [15]
 Find out about the patient's state of health;
 Evaluate the degree of severity of all illnesses;
 Somatic assessment of the patient (nutrition, weight, hydration) ;
 Assessment of the patient's general condition (physical autonomy, cognition, sensory and thymic function, lifestyle, etc.) with reference to the standardized geriatric assessment (EGS);
 Take a medication history;
 Evaluate the elderly patient's adherence and ability to take charge of his or her own care;

When Writing: Mastering Treatment [15]
 Check and organize indications according to the previously defined hierarchy;
 Eliminate unjustified drugs to limit polymedication;
 Avoid complex therapeutic regimens;
 Eliminate drugs, dosages, durations and rhythms that are unsuitable for elderly patients;
 Establish the duration of treatment and monitoring and discontinuation procedures in advance;
 Adapt the method of drug administration to the patient's situation;
 Explain to patients and their families the objectives of treatment, and the procedures for monitoring and discontinuing treatment, in order to improve adherence;
 Take into account the patient's socio-economic circumstances and medical coverage;
 Always remind patients and their families to bring their treatment and prescriptions with them when they are hospitalized or consulted.

The pharmacist
Pharmacists play a key role in reinforcing therapeutic adherence. In the hospital setting, close collaboration between physicians and clinical pharmacists is the key to successfully combining appropriate therapeutic choice with restrictions on inappropriate prescribing and improved adherence. In the dispensary, rigorous prescription analysis, appropriate advice and the clarification of adverse effects and other drug-related problems considerably improve adherence. Nevertheless, errors in reading and interpreting prescriptions, the infrequency or absence of drug histories at the pharmacy counter due to lack of time, and the lack of access to the patient's medical file, reduce the quality of the dispensing act. The sale of certain pharmaceutical or parapharmaceutical products without a medical prescription further encourages the occurrence of drug interactions. [12]

As we have just seen, an overall geriatric assessment provides a general view of the elderly person and all his or her difficulties. This will then enable the frail person to be referred to the appropriate healthcare professionals, with possible intervention from socialservices to try and manage these difficulties as best as possible.

Conclusion:-

Given the multitude of social, medical, and psychological issues that interlink in sick elderly individuals, it is necessary to propose comprehensive care and develop interventions that reduce the prevalence of these diseases, slow their progression, and delay the onset of functional dependency. It is important to note that the primary

objective of geriatric care is to reduce both the prevalence of disability and diseases related to aging and to enhance the quality of life for the elderly. This will lead to improved geriatric care offerings and the strengthening of professional skills among healthcare personnel. In Morocco, the Ministry of Health has implemented a national strategy aimed at universalizing access to healthcare and combating territorial inequalities through the appropriate rationalization of healthcare expenditures, which will favor improvements in research, innovation, and access to healthcare structures, particularly geriatric ones. A multidisciplinary partnership program (both national and international) has been established. This has led to improved geriatric care offerings, enhanced professional competencies, and the establishment of a national strategy in geriatrics. However, there remains a need to develop more geriatric evaluation indicators, beyond those related to old-age diseases, to address the social coverage of the elderly, the coverage rate by geriatric practitioners, and the number of geriatric structures.

References:-

[1] Haut-Commissariat au Plan du Maroc. National Survey on the Elderly in Moroc Survey Report. [Online]. 2006. Accessed September 15, 2020. Available at: https://www.hcp.ma/file/103241/.

[2] Haute Autorité de Santé (HAS), France. www.has-santé.fr. [Online].; 2015. Acceso 9 de Septembre de 2020. Disponible en: https://www.has-sante.fr/upload/docs/application/pdf/201504/note_methodologique_polypathologie_de_la_personne_agee.pdf.

[3] Institut National de la Statistique et des Etudes Economiques (INSEE), France. www.insee.fr. [Online]; 2019. Acceso 25 de 09de 2020. Disponible en: https://www.insee.fr/fr/statistiques/4238381?sommaire=4238781#:~:text=Au%201er%20janvier%202019,soit%2020%20%25%20de%20la%20population.&text=La%20vie%20%C3%A0%20domicile%20demeure,les%20nonag%C3%A9naires%20(figure%201).

[4] Brody JA, Schneider EL. Diseases and disorders of aging: An hypothesis. J Chronic Dis. 1986; 39(11): p. 871-876.

[5] Z.Mokrani et al. Analyse épidémiologique des patients âgés de plus de 75 ans, admis aux urgences du centre hospitalier de Salon-De-Provence ne disposant pas d'équipe mobile de gériatrie. JEUR 2009 ; 03 : 264.

[6] « Former les personnels de santé du XXIe siècle : le défi des maladies chroniques ».Available at: 271 Insides FR 12jun.indd

[7] Budnitz DS, Lovegrove MC, Shehab N, Richards CL. Emergency hospitalizations for adverse drug events in older Americans. N Engl J Med 2011;365:2002–12.

[8] Haute Autorité de Santé. Prendre en charge une personne âgée polypathologique en soins primaires, 2015. Note méthodologique et de synthèse documentaire. HAS, Service communication – information.

[9] Ministère de la Santé, Direction de la Planification et des Ressources Financières, Division de la Planification et des Etudes. Enquête Nationale sur la Population et la Santé Familiale (ENPSF) 2018. Rabat, Maroc:, Service des Etudes et de l'Information Sanitaire.
Schwartz RH. The war on drugs. New Engl J Med, 1994, 331, 126-127.

[10] schneider MP, Locca JF, Bugnon O, et al. L'adhésion thérapeutique du patient âgé ambulatoire : quels detereminants et quel soutien ? Revue Médicale Suisse, 2006, 56, 664-670

[11]

[12] Petermans J, Samalea Suarez A, Van Hees T. Observance thérapeutique en gériatrie. Rev Med Liège. 2010; 65: p. 5-6.

[13] Pasina L, Brucato AL, Falcone C, Cucchi E, Bresciani A, Sottocorno M, et al. Medication Non-Adherence Among Elderly Patients Newly Discharged and Receiving Polypharmacy. Drugs Aging. 2014; 31(4): p. 283-9.

[14] Haute Autorité de Santé, Legrain S. Consommation Médicamenteuse chez le Sujet Agé : Consommation, Prescription, Iatrogénie et Observance.; 2005. Acceso 12 de Juin de 2021. Disponible en: https://has-sante.fr/upload/docs/application/pdf/pmsa_synth_biblio_2006_08_28__16_44_51_580.pdf.

[15] Oudrhiri M. Doctinews. [Online]; 2010. Acceso 14 de Juinde 2021. Disponible en: https://www.doctinews.com/index.php/archives/38-fondamentaux/250-medication-et-seniors-comment-mieux-prescrire-chez-la-personne-agee.