AGING HOMELESS POPULATION. FILLING THE GAPS

Age of onset of chronic diseases depending on drug use

Final Degree Proyect

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Pere Torán

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1. Abstract

Background. Homelessness is a serious public health problem that affects more than 31.000 people in Spain. It is a population that is aging, with important consequences for their health, causing among other things a greater prevalence of chronic diseases. Also, within this aging homeless population, there is a high proportion of people who use drugs, they are called "aging drug users". This consumption adds a risk to an already vulnerable population.

Aim. Describe the population of aging problematic drug users regarding the age of onset of the first chronic diseases and compare it with the rest of the homeless population depending on drug use, both those who have a non-problematic consumption and those who do not use drugs.

Methods. A retrospective cohort study was conducted in the homeless population served in the city of Girona from 2006 to 2016.The information includes clinical data from January 1, 2000 to December 31, 2016, collected thanks to electronic records of primary care and the mental health centre of Girona. Data included sociodemographic, chronic and infectious diseases, substance misuse disorder. The average healthy months and years the person passes until the onset of the first chronic diseases is compared in the 3 different groups of consumption using the Kruskal-Walls test. The Kaplan-Meier test was used to determine the probability of being healthy over time in the 3 consumption groups.

Results. The sample consisted of 492 participants. Homeless men were accounted for 84.5% of the sample. The mean age of the cohort was 49.7 years (SD 11,09) for men and 49.29 years (SD 13,6) for women. In relation to drug use, 59.1% of the sample has no substance misuse problem, 31,9% had a non-problematic drug use, and 18,1% of the total were problem drug users. About chronic diseases that were recorded in the electronic registry of the PCC, 152 people had al least one. We focus now only on those people over 40, who represent 80% of the sample. Within this older group, non-consumers still are the larger group, representing 44.9% of the people over 40. Aging problematic drug users represent 14% of the sample and those people over 40 who use other drugs represent 21,1% of the sample. Within this aging group, we have the date of diagnosis of the different chronic diseases registered of 115 people. The age of onset of the first chronic disease for each group is; 42,2 years for aging problematic drug users, 52,25 years for other drug use group and 51,25 years for no substance misuse group.

Conclusions. We can conclude that there are differences in the time of appearance of chronic diseases in individuals experiencing homelessness classified depending on their drug consumption, being the "aging problematic drug users" those exposed to an earlier onset of them. However, we cannot assure the association between consumption and the age of appearance.

Key words: Aging, drug use, problem drug use, aging drug user, chronic diseases

2. Abbreviations

COPD. Chronic obstructive pulmonary disease

CVD. Cardiovascular disease

EMCDDA. European Monitoring Centre for Drugs and Drug Addiction

ETHOS. European Typology of Homelessness and Housing Exclusion

EU. European Union

FEANTSA. European Federation of National Organisations Working with the Homeless

HT. Hypertension

IEH. Individuals experiencing homelessness

INE. Instituto Nacional de Estadística

ISCED. International Standard Classification of Education

PCC. Primary care centre

SD. Standard deviation

SUD. Substance use disorder

T2D. Type 2 diabetes

UNESCO. United Nations Educational, Scientific and Cultural Organization

3. Introduction

3.1. Definition of homelessness

Homelessness, that is, the lack of adequate and permanent accommodation that provides a stable framework for coexistence, is one of the main problems identified by the European Social Inclusion Strategy.

According to CESCR "a person experiences homelessness when he or she does not have somewhere to live in security, peace and dignity". (1)

Within this approach, the definitions of homelessness, that vary across countries, range from the strictest perspective that considers homeless people only in reference to "rough sleepers", to one that encompasses also all those situations in which the affected people live in accommodation that does not meet the conditions for human and social development and that, consequently, can lead to the literal lack of a place to live.

Taking as reference this broader definition of homelessness, and to facilitate improved research and policy decision making the European Observatory on Homelessness (FEANTSA) proposed the European Typology of Homelessness and Housing Exclusion (ETHOS).

The ETHOS typology begins with the conceptual understanding that there are three domains which constitute a "home", the absence of which can be taken to delineate homelessness. Figure 1. Table 1.

- First, the security domain, or security of occupancy, which includes both having legal title to occupy, as well as relates to the practical likelihood of eviction.
- Second, the physical domain refers to the fact of having accommodation that meets the needs of a home, both qualitative (durability, weather protection, provision of basic services, freedom from infestation and pollutants, and security of self and possessions of external threats) as quantitatively (not too crowded).
- Third, the social domain refers to opportunities to enjoy social relations at home, as well as being able to maintain their privacy. This domain

refers to the security of internal threats (for example, from other occupants) to both the person and their possessions.

Figure 1. Domains of homelessness and housing exclusion *(2)*

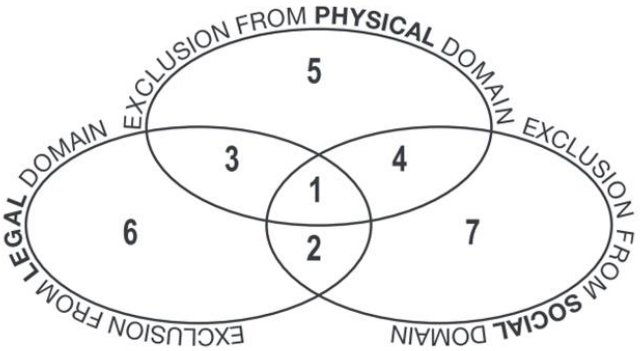


Table 1. Theorical domains of homelessness *(2)*

Conceptual category	Operational Category		Physical domain	Legal domain	Social domain
Homelessness	1	**Rooflessness**	No dwelling (roof)	No legal title to a space for exclusive possession	No private and safe personal space for social relations
	2	**Houselessness**	Has a place to live, fit for habitation	No legal title to a space for exclusive possession	No private and safe personal space for social relations
Housing exclusion	3	**Insecure and inadequate housing**	Has a place to live (not secure and unfit for habitation)	No security of tenure	Has space for social relations
	4	**Inadequate housing and social isolation within a legally occupied dwelling**	Inadequate dwelling (unfit for habitation)	Has legal title and/or security of tenure	No private and safe personal space for social relations
	5	**Inadequate housing (secure tenure)**	Inadequate dwelling (unfit for habitation)	Has legal title and/or security of tenure	Has space for social relations
	6	**Insecure housing (adequate housing)**	Has a place to live	No security of tenure	Has space for social relations
	7	**Social isolation within a secure and adequate context**	Has a place to live	Has legal title and/or security of tenure	No private and safe personal space for social relations

This leads to the 4 main concepts of Rooflessness, Houselessness, Insecure Housing and Inadequate Housing all of which can be taken to indicate the absence of a home.

These conceptual categories are divided into 13 operational categories (Table 2) that can be used for different policy purposes such as mapping of the problem of homeless ness, developing, monitoring and evaluating policies.(2–5)

Table 2. European Typology of Homelessness and housing exclusion(5)

Conceptual category	Operational category		Living situation	
Roofless	1	People living rough	1.1	Public space or external space
	2	People staying in a night shelter	2.1	Night shelter
Houseless	3	People in accommodation for the homeless	3.1 3.2 3.3	Homeless hostel Temporary accommodation Transitional supported accommodation
	4	People in women's shelters	4.1	Women's shelter accommodation
	5	People in accommodation for immigrants	5.1 5.2	Temporary accommodation or reception centre Migrant workers' accommodation
	6	People due to be released from institutions	6.1 6.2 6.3	Penal institution Medical institution Children's institution or home
	7	People receiving longer-term support (due to homelessness)	7.1 7.2	Residential care for older homeless people Supported accommodation for formerly homeless persons
Insecure	8	People living in insecure accommodation	8.1 8.2 8.3	Temporarily with family or friends No legal (sub)tenancy Illegal occupation of land
	9	People living under threat of eviction	9.1 9.2	Legal orders enforced (rented) Repossession orders (owned)
	10	People living under threat of violence	10.1	Police-recorded incidents
Inadequate	11	People living in temporary or non-conventional structures	11.1 11.2 11.3	Mobile home Non-conventional building Temporary structure
	12	People living in unfit housing	12.1	Occupied dwelling unfit for habitation
	13	People living in extreme overcrowding	13.1	Highest national norm of overcrowding

Therefore, homelessness and housing exclusion can be used to describe a wide range of living situations. In spite of this, the complexity and magnitude of the issue often leads to a more restrictive definition being assumed, so statistics usually reflect only those cases that literally lack a home and live or live on the street (outdoors) or in shelters aimed at this group.(3)

3.1.1. Epidemiology of homelessness

Europe

According to FEANTSA & Foundation Abbé Pierre, there are at least 700,000 people sleeping on the street or in emergency or temporary spaces in the European Union.

This count simply includes those who have used emergency accommodation such as night shelters (ETHOS category 2.1) and temporary and transitional short-term accommodation (ETHOS 3.1, 3.2, and 3.3).

Although 2010 was *European Year for Combating Poverty and Social Exclusion*, over the last ten years, the number of homeless people has increased in almost all European Union countries.

The only European Union country where these numbers have reversed is Finland, where emergency accommodation has gradually been replaced by permanent housing.

(6,7)

On the other hand, the *Living Conditions in Europe* report states that, of the 500 million people living in the EU, 23.5% live in a situation of exclusion (about 118 million people).

The risk of social exclusion is measured by people at risk of poverty (person whose average disposable income is less than 60% of the national median income, after social assistance) and / or who live in serious material prevalence and / or live in households with low income and / or with low labour intensity.

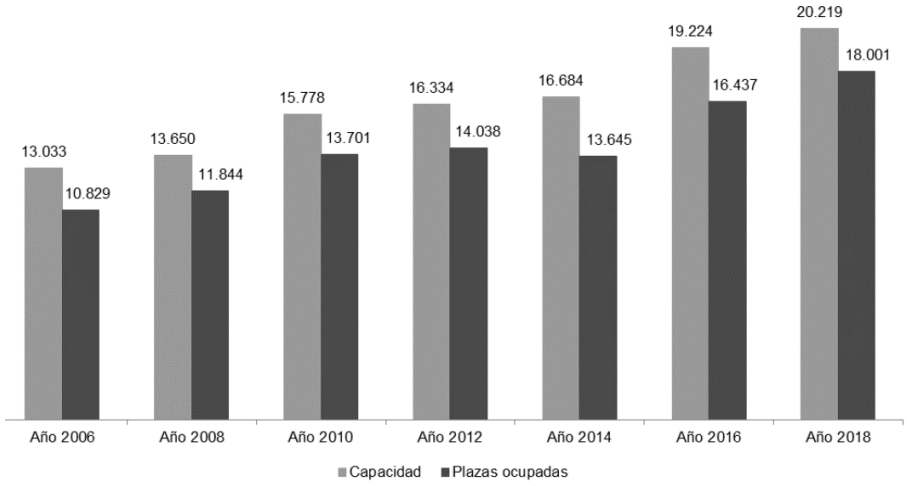
(8,9)

Spain

According to the latest survey on centres and homeless care services conducted by the INE in 2018, there is a daily average of 18,001 homeless people; 9’5% more than in 2016.

In addition, this survey determines that these centres made more than 48,500 daily services in social canteens and state centres, 10.7% more than 2016. (10)

Figure 2. Evolution of the capacity and occupation of the accommodation network(10)



However, these data offered by the INE on the IEHcannot be extrapolated to the rest of the homeless population, since they do not count a part of the most unknown population, not linked to the accommodation and catering centres, who spend the night in inadequate spaces and are living in worse living conditions.

With the aim of including this most invisible part of the IEH, the Spanish government created the National Comprehensive Strategy for the Homeless that estimated between 30,250 and 36,300 people who could really be living on the street. (9,11)

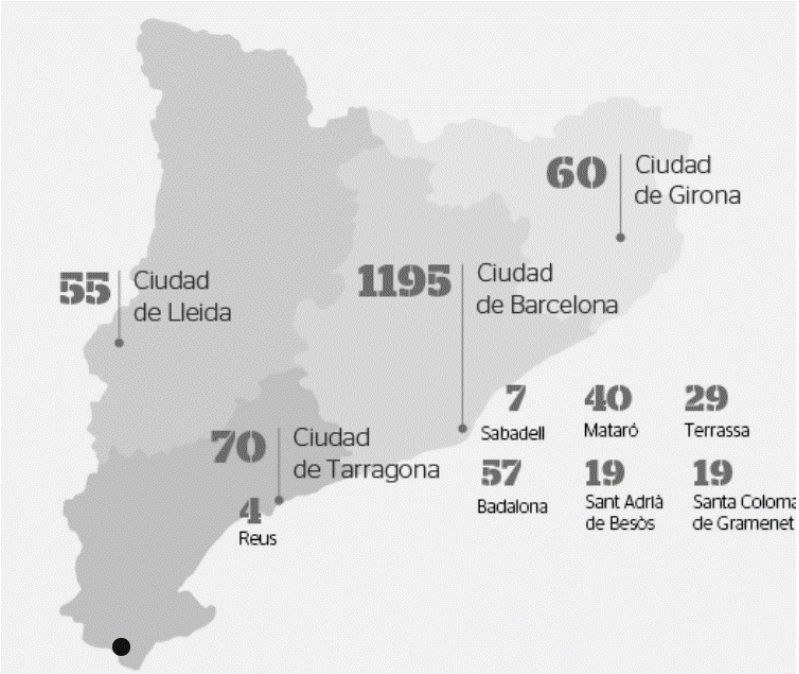
Catalonia

Specifically, in Catalonia, there are data from the INE 2018. The average number of vacancies occupied in the homeless accommodation centres was 1.695, which represents 96’7% of total occupation, and 2.983 meals were served as average daily. (10)

In addition, in Catalonia we know that 1,555 people sleep on the street in 11 municipalities (Barcelona, Tarragona, Girona, Lleida, Badalona, Mataró,

Terrassa, Santa Coloma de Gramenet, Sant Adrià de Besòs, Sabadell and Reus) thanks to some counts that have been Made in recent years. (12,13)

Figure 3. Roofless in Catalonia (12)



In May 2016, The Catalan Housing Agency put DEP Institut in charge of analysing the Homeless situation in Catalunya.

- 5,433 people live on the street or in low demand centres.
- 8,634 people do not have housing, that is, they are adults living in shelters or minors living in shelters.
- 26,705 people live in unsafe housing, with problems paying rent, with an eviction order or suffering from other situations such as domestic violence.
- 7,682 people live in inadequate housing such as settlements and barracks, without basic or over-occupied supplies.

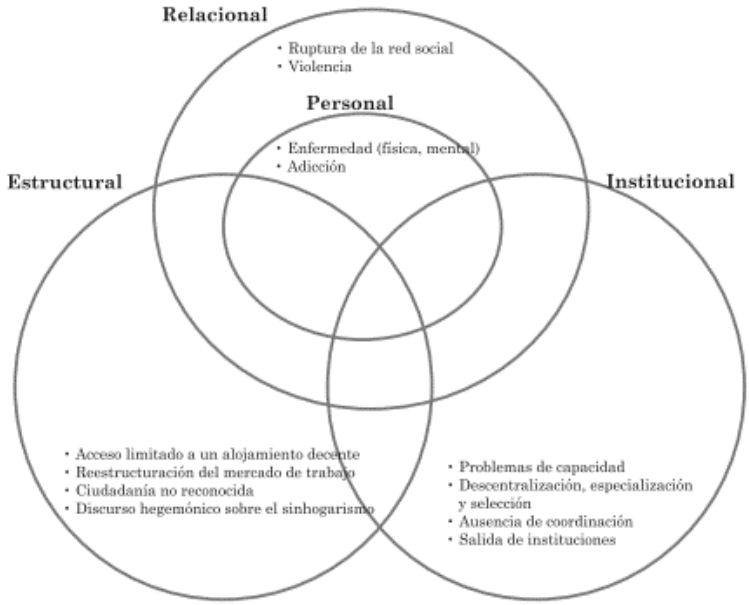
(12,14)

3.2. Causes of homelessness

The causes of homelessness are complex, usually resulting from the accumulation of several factors rather than just a single cause.

The causes of homelessness reflect a relationship between 3 areas: structural factors, system failures and individual circumstances.

Figure 4. The multiple causes of homelessness(15)



Individual and relational factors apply to the personal circumstances of a homeless person.

Within *individual* factors the most common are mental health problems and addictions, which can be both a cause and a consequence of homelessness, as well as physical health problems or disabilities. (3)

In addition to these, individual factors also include poverty, early childhood adverse experiences, personal history of violence, and criminal justice system association. (16)

Beyond these individual reasons, *relational factors* are an important issue. Relational problems can include family violence and abuse, addictions, and mental health problems of other family members and extreme poverty.(17)

This factor is important, specifically in the countries of Mediterranean Europe, where family ties are a protective factor against the risk of poverty and social exclusion.(3)

Structural factors such as the distribution of wealth among citizens, the limitations of access to the labour market and the quality of jobs or the phenomenon of immigration without the proper regulation of these citizens. (17)

System failures occur when more convectional systems of care and support fail to assist, and vulnerable people need turn to the homeless sector for help. A good example of this are transitions from juvenile centres, lack of support for immigrants and refugees, etc.(17)

3.3. Homelessness and substance use: Both cause and consequence

There is a strong connection between substance addiction and homelessness, having relation both as a cause and a consequence.

Although it is true that addictions alone are not a cause of homelessness, an individual that is experiencing housing instability, has an increased risk of losing their housing if they use substances. In many situations, however, substance abuse is a result of homelessness rather than a cause, .(18)

Being a cause or a consequence, it is clear that substance use disorders (SUDs) involving alcohol and illicit drugs are strongly associated with homelessness, with prevalence sometimes exceeding 50% in community homeless samples. (19–24)(25)

Homeless people have much higher rates of drug use than the general population and homeless drug users tend to use substances more frequently, in increased quantities and in less safe ways then their housed counterparts.(26)

In addition, people who use drugs and are homeless face significant barriers to accessing health care, drug treatment and support towards recovery, which further hinders their chances to being housed.(26)

3.3.1. Epidemiology of addictions in homeless population

In Spain, both in the general population and in the homeless population the most consumed substance is alcohol. (27)

Several studies show a percentage greater than 40% alcohol dependence or abuse (28,29).

The INE survey indicates that 44.1% of homeless people consume alcohol, however, of this total percentage, 9.5% do so moderately, and only 4.1% reported high or excessive consumption. (30)

Figure 5. Homeless people classified by alcohol consumption and gender. INE 2012 (30)

	Sexo					
	Total		Hombres		Mujeres	
	Personas	%	Personas	%	Personas	%
TOTAL	22.938	100,0	18.425	100,0	4.513	100,0
Consumo de alcohol						
Sin consumo	12.819	55,9	9.354	50,7	3.465	76,8
Ligero	7.005	30,5	5.998	32,6	1.007	22,3
Moderado	2.164	9,5	2.137	11,6	27	0,6
Alto	262	1,1	259	1,4	3,0	0,1
Excesivo	688	3,0	677	3,7	11	0,2
Consumo de drogas						
TOTAL	22.938	100,0	18.425	100,0	4.513	100,0
Sí	8.567	37,3	7.463	40,5	1.104	24,5
No	14.371	62,7	10.962	59,5	3.409	75,5

Although alcohol is the most frequent addiction, IEH may have other types of addictions.

In relation to illicit drugs, the study conducted by the INE establishes 62.7% of IEH have never used, while 37.3% have. (30)

According to another study carried out in Spain, 52% of the IEH interviewed said that they had had some addiction in their lives, which are shown in the table 4.(31)

Figure 6. Addictions suffered by the IEH at some time in their life(31)

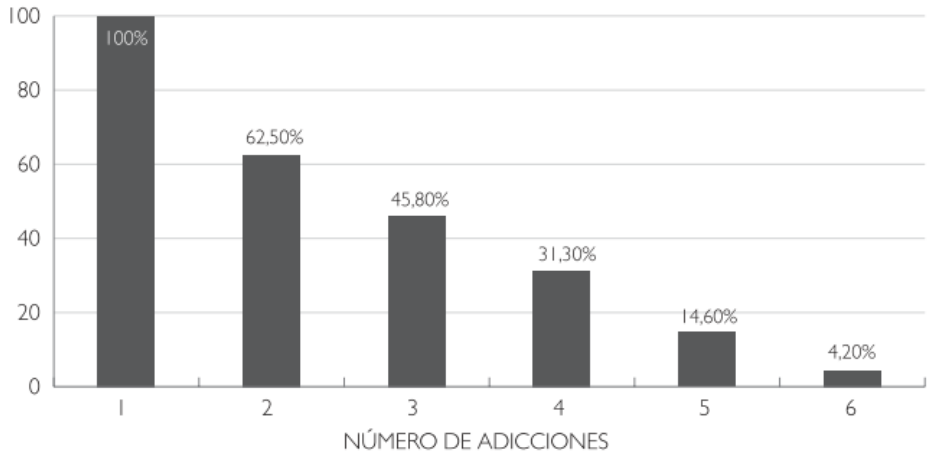
Sustancias a las que han sido adictos	Presencia de adicción	Porcentajes	No presencia de adicción	Porcentajes
Alcohol	34	68%	16	32%
Juego (Ludopatía)	8	16%	42	84%
Cannabis	20	40%	30	60%
Cocaína	21	42%	29	58%
Heroína	23	46%	27	54%
Pastillas (anfetaminas)	18	36%	32	64%

Hence, although alcohol consumption is the most frequent, cannabis use and problem drug use are also an issue. (31)

Problem drug use is defined by the EMCDDA as “injecting drug use or long duration or regular use of opioids, cocaine and/or amphetamines”. This definition specifically includes regular or long-term use of prescribed opioids such as methadone but does not include their rare or irregular use or the use of ecstasy or cannabis.(32)

On the other hand, data was obtained that demonstrated a high presence of polyaddiction in the IEH (45.8% of the IEH who manifested themselves as addicted had at least three addictions). (31)

Figure 7. Cumulative percentage of IEH according to the number of addictions they present at the time of the study.(31)



3.4. Consequences of homelessness and drug use. Aging and health impact

3.4.1. Aging and health within the homeless population

We are currently experiencing a change in homeless population. In Europe, the European Homeless Observatory detected an increase in young people who fall into this situation.

On the other hand, a much higher increase of homeless people over 45 years is detected.

Specifically, in Spain, according to the INE survey, this age group went from 29% in 2005 to 42.5% of all IEH in 2012. Also, the average age of IEH increased from 43.42 years old in 2009 to 45.1 years old in 2014. (11,30)

Despite this change, at present, research, as well as practices related to homelessness, focus more on young adults, paying less attention to older people. (33)

This change in the characteristics of the population has implications for the health needs of the homeless population. While in the youngest part of the population, the main concern is the management of communicable diseases and unintentional injuries, in those older individuals, the management of chronic diseases, geriatric conditions and end-of-life issues becomes important. (16,34)

As a result of all this, several researchers argue that the homeless population should be considered older from 50 years and not 65, age to consider the general population older. Therefore, this part of the homeless will have unique needs regarding safety and access to health and social services. For example, they may require access to specialized medical care beyond what is available in shelter, memory problems can make some older people forget appointments, etc. (33)

Living without a home can be especially challenging in later life.

3.4.2. Aging drug users in the general population. Health consequences

However, homeless population is not the only one that is aging. Drug using population, including those who are in treatment is also ageing.

There is a general belief that drug use is done by the younger part of the population and that people in their 30s “mature out” of drug use. But we can increasingly see more drug use in older populations, demonstrating that SUD have no age limits In the general population. The National Survey of Drug use and Health has shown that the prevalence of illicit substance use in adults over 50 and older has doubled since 2002. (35)

This aging of the drug user population can be explained by several factors that include demographic changes in the general population, changes in the availability of heroin and increased life expectancy for problematic drug users due to greater access to treatments and development of harm reduction programs.

On a historical level, it is important to keep in mind that in Europe, the use of illicit drugs was a social phenomenon during the 1960s and 1970s. At that time, the use of cannabis, LSD (lysergic acid diethylamide), methamphetamine and, a little later, heroin increases among younger people. This type of consumption generated serious negative health consequences, particularly increased deaths due to overdoses, as well as HIV epidemics among drug injectors, which leads to adopting harm reduction measures such as: needle and syringe programs and opioid substitution treatment.

Thanks to these measures, mortality in these patients related to overdose and HIV/AIDS decreases. However, in these countries that witnessed the heroin epidemics, most of these people who were 'problem drug users' are now undergoing maintenance treatment with methadone or buprenorphine, which is, opioid replacement therapy. These people are currently part of most 'problem drug users' and are getting older.

Therefore, this aging cohort, like the homeless population, generates new health needs to take into account, among which the management of chronic diseases will be important.(36)

Older adults who use substances have an additional health risk compared to younger ones, since they are more susceptible to interactions between consumption of illicit substances and / or alcohol with their medications for chronic health

conditions(37,38)(35). They are at elevated risk of harm from substance use, due to higher risk of substance-induced delirium, cardiovascular events, and worsening of chronic pulmonary diseases.(39,40)(35)

Moreover, studies show that drug use not only exacerbates but also accelerates conditions associated with ageing causing premature metabolic ageing, such as atherosclerosis or cardio-pulmonary ailments, among chronic drug users as young as 40 years old. (36)Therefore, elderly drug users are considered those aged above 40 years whose recurrent use of substances is causing them harm or is placing them at a high risk of such harm. (41)

3.4.3. Aging drug users within the homeless population. Health consequences

As previously mentioned, the use of alcohol and other substances is frequently associated with homelessness. However, the literature that exists regarding the use of substances in older IEH is limited and inconclusive. (33)

There is research that find that patterns of use decrease with age, other studies indicate that older people tend to report less drug use, etc.

On the contrary, there are studies that suggest that substance misuse in the homeless population, as well as in the general population, is increasing and is expected to continue through this trajectory. (33)

In the United States, a survey done in San Francisco determined that almost two thirds of the participants (homeless> 50 years) had some moderate or severe symptoms secondary to at least one illicit drug, and that 25.8% had moderate or severe symptoms secondary to alcohol. Therefore, this study concluded that in this sample of older homeless adults, substance use is common.(35)

This increase in drug use compared to previous generations could be explained, both in the general and homeless population, by the cohort effect: people tend to maintain drug habits in their lives, and greater comorbidity is expected of prolonged use of drugs and alcohol. (33,41)

Despite these differences between literature, it is clear that this substance use among older IEH adds one more risk to an already vulnerable population.

Study Justification

Homelessness is a serious public health problem, which affects more than 31,000 people in Spain.

The homeless population is a population that is aging and will continue to do so. In addition, within this population there is a significant percentage of aging drug users, that is, older people (> 40 years) with problems of addiction to alcohol and other substances.

This is important because both homelessness and the fact of being an aging drug user are risk factors for a higher prevalence of chronic diseases. However, in Spain there are no protocols for managing this type of disease in this population.

It is important to keep in mind that the fact of being an aging drug user, in addition to being a risk factor for the greater prevalence of chronic diseases, has been described as a risk factor for the exacerbation, acceleration and complication of chronic diseases.

Specifically, in these patients, this premature metabolic aging occurs in patients as young as 40 years old[1].

Therefore, it is important to study this population change and its consequences for a better sanitary control of these patients, with different needs to the general population.

[1]In this case, as in other studies around the concept of aging drug users, 40 years are used as a cut-off point to establish older drug users.

4. Research question:

Is the older (>40 years old) homeless population conditioned to an early onset of chronic diseases (HT, T2D, COPD, CV events, obesity, neoplasms) depending on the different drug use?

5. Objective:

The main objective of this study is to compare the average ages of diagnosis of chronic diseases (HT, DMII, MPOC, cardiovascular events, obesity and neoplasms) in homeless patients over 40 years, depending on drug use, classifying such consumption into 3 groups:

- Problem drug use. Problem drug use' is defined by the EMCDDA as 'injecting drug use or long duration or regular use of opioids, cocaine and/or amphetamines'. This definition specifically includes regular or long-term use of prescribed opioids such as methadone but does not include their rare or irregular use or the use of ecstasy or cannabis
- Alcohol and other drugs consumption
- No drug use

6. Hypothesis:

There are differences in the average age of onset of chronic diseases depending on the different drug use, classifying such use in 3 different groups:

- Problem drug use
- Alcohol and another drug consumption
- No drug use

7. Methodology y statistics

Study design

This is a retrospective cohort study.

Study population

The target population are those individuals experiencing homelessness in the province of Girona.

Basically, it is constituted by people who do not have housing, live in the street, in houses occupied illegally, or temporarily in the municipal reception centre "La Sopa" and / or receive aid from this same centre.[2]

[2]The reception centre "La Sopa" is a social and welfare entity aimed at the homeless or in situations of extreme poverty or exclusion.

The objectives and functions of the reception centre are:

- Provide a reception service to people in situations of need or with special difficulties for their economic and social autonomy
- Carry out an intervention that combines assistance with reintegration and the promotion of personal autonomy
- Establish an effective cooperation with other services, and resources of the territory to face the multidimensionality presented by the situations attended, in social, health, labor, legal and housing aspects.

In addition, the centre offers other services open to the city for those with few economic resources. These services include food distribution service, dining room, showers and laundry.

- The addiction care program
- The program of sheltered housing for reintegration
- The street program
- El programa de viviendas tuteladas de reinserción
- El programa de la calle

Sample

The sample is the entire IEH population that was treated in a service offered by “La Sopa” reception centre during 2006.

Due to the characteristics of the centre, already mentioned, the people included in the study respond to a broader definition of homelessness, considering not only those people sleeping on the street (“rough sleepers”) but also those living in situations at risk of poverty and social exclusion.

Of this totality, only those who met the criteria of Busch-Hersemmaa, Culhane & Fitzpatrick (Annex 1) were selected. Although the criteria developed by FEANTSA is the most accepted one, these criteria are used as they are aimed at people in a more extreme homelessness situation.

According to the counts made by the work team of the records of the reception centre of "La Sopa", the total number is 857 people.

Data source

The registration of data from this patient cohort begins in 2006 and continues until December 31, 2016.

During this time, a coordination between the Girona primary care centre, mental health centre, and “La Sopa” reception centre is established for the correct collection of data.

The data of the different variables are obtained by electronic records from both the primary care centre and the mental health centre.

These data include clinical information from January 1, 2000 to December 31, 2016.

Those individuals without clinical information of chronic diseases in the available E-CAP were excluded.

Variables

Independent variable

Substance misuse.

The recorded substance misuses were alcohol misuse, cocaine misuse, cannabis misuse, opioids misuse, and hypnotic drugs misuse. These data were grouped into three categories.

- Problem drug use. Defined by the EMCDDA as "injecting drug use or long duration/ regular use of opioids, cocaine and/or amphetamines.
- Alcohol and other drug use, including here cannabis and hypnotic drugs consumption. This group includes all those people with a consumption that does not meet the definition of problematic consumption of the EMCDDA.
- No drug consumption.

Age

Age is recorded at the time of completion of the study, that is, on December 31, 2016. The date of death is taken into account to calculate the age of those who had died during the 10 years of the study.

People are divided into two groups depending on whether they are older or younger than 40 years.

Dependent variable

Healthy months

Time in months that has passed from the birth of the person until the appearance of the first chronic disease. This variable is obtained thanks to the date of birth and the earliest date of diagnosis of chronic diseases, both recorded in the study.

The chronic diseases included here are those registered in the PCC (primary care centre) and would be HT, COPD, T2D, Obesity, CV disease, and neoplasms.

Covariates

- Gender. Data were categorized in binary gender to facilitate the management of the data: man or woman.

  Gender can be an important confounding factor since it is an important social determinant of health, both in the general and in the homeless population.
- Civil Status. Data were grouped into 5 categories: single, married, divorced widowed and missing data.

  Especially in the countries of Mediterranean Europe, family ties represent a barrier of protection against the risk of poverty and social exclusion.
- Education level. The data was firstly categorized according to ISCED 1997 (International Standard Classification of Education), the statistical framework for organising information on education by the UNESCO (United Nations Educational, Scientific and Cultural Organization). Finally, it was grouped into 4 different categories: No studies/primary not finished, Primary (0 from ISCED), Secondary (1-3 ISCED) and University (5 ISCED).

  The educational level, like gender is an important social determinant of health and may be creating confusion.
- Days of homelessness. Records of all the following services were analyzed and confronted with records of local police incidents (each specific unit records each occasion when an agent or patrol locates an IEH in the city), the record of intervention monitoring in an open environment (specific street intervention team with IEH with extensive knowledge of the group and its situation), and the clinical records of the public mental health services of the autonomous community, which also attend IEH. The absolute number of days was obtained.

  People experiencing homelessness chronically or longer basis are generally at greater risk of having physical and mental illness, as well as a greater difficulty in changing their situation.
- Migrant. Data was grouped into two categories: migrant (considering those from outside Spain) and non-migrant (those from Spain).

  Being an immigrant can also be a confounding factor since language has been identified as a significant barrier to accessing housing and support services among older people who are homeless.

- Age. Age is recorded at the time of completion of the study, that is, on December 31, 2016. The date of death is taken into account to calculate the age of those who had died during the 10 years of the study.
  Different mean ages in the 3 groups can be an important confounding factor that we should also consider when conducting the analysis.

Statistical analysis

Two descriptive studies of the sample were performed. One of them in relation to the general characteristics of the sample (socioeconomic characteristics, substance use, presence of infectious diseases and chronic diseases and ages).

The second descriptive study is done in relation to 2 different characteristics (sex and time in months and years that the patient passes until the onset of the first chronic disease) for 3 different groups[3] of the sample performed according to the age and drug use.

To determine if there are differences between these 3 groups according to sex, chi-square tests were used.

The average healthy months and years the person passes until the onset of the first chronic disease is compared in the three groups using the Kruskal-Walls test.

Finally, the Kaplan-Meier test was used to determine the probability of being healthy or not having any chronic disease over time in the 3 consumption groups.

Results are expressed as absolute number, percentages, means, confidence intervals and medians. Statistical tests were considered to be significant with a p value <0.05

[3] These 3 groups are those already discussed previously. It is the IEH OF in the sample, over 40 years old, divided into 3 different consumption groups based on drug use. As a reminder, these 3 groups are:
- Problematic consumption, as defined by the EMCDDA.
- Other drug use
- No drug use

Ethical Aspects

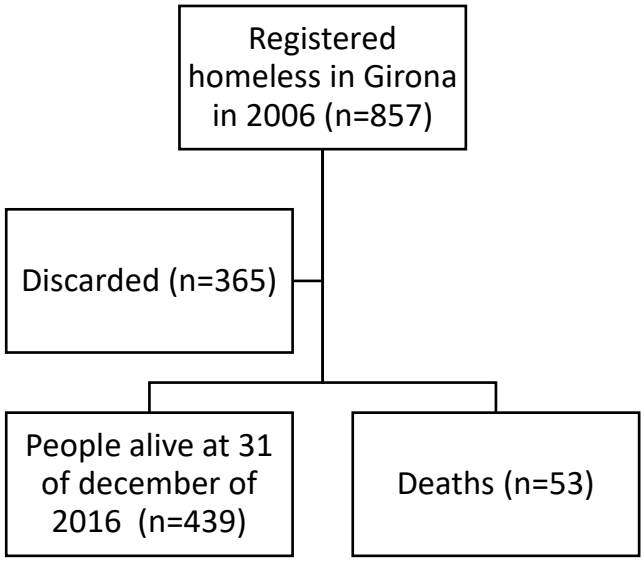
The Research Ethics Committee CEI-Girona approved the research protocol with code COHORT2006 on October 28, 2016.

8. Results

8.1. Sample characteristics by gender

The total number of people at the time of registration was 857. After ruling out people who had no registered clinical data in the electronic registration of the primary care centre, the total number of the sample is 492 people.

Figure 8. Flow of people during the study



The average age of the total sample was 49.7 years. Homeless men were accounted for 84.5% of the total, and the rest, 74 people, were women. The mean age of the cohort was 49.7 years (SD 11,09) for men and 49.29 years (SD 13,6) for women.

Table 3 lists the sociodemographic characteristics of the study population. Fifty-one per cent were migrant people.

It is important to consider the percentage of people without data, especially in relation to the educational level, which constituted 75% of the sample, but also in relation to civil status (55,9%), criminal records (67,7%) and prison records (69,1%).

Of all the people who did have data, 100 had criminal records and27 had prison records. Regarding civil status, the majority were single, followed by married and divorced. A minority were widowed.

There is not enough information about education level due to the lack of educational data of more than two thirds (75%) of the sample.

Table 3. Sociodemographic characteristics of the sample by gender

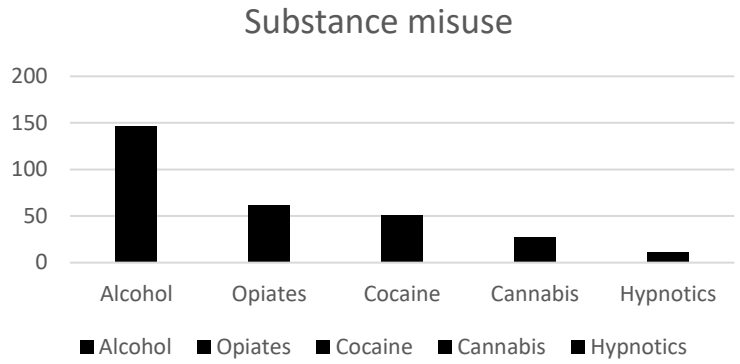
	Men	Women	TOTAL
Migrant n (%)	224 (45,53%)	28 (4,27%)	252 (51,2%)
Education level n (%)[a]			
No studies/ Primary not finished	31(25,2%)	8 (6,5%)	39(31,7%)
Primary	41 (33,33%)	5 (4,06%)	46 (37,4%)
Secondary	31 (25,2%)	5 (4,06%)	36 (29,3%)
University	2 (1,63%)	0	2 (1,63%)
Civil Status n (%) [b]	230 SIN DATOS	45 SIN DATOS	
Single	94	13	107
Married	50	5	55
Divorced	42	9	51
Widowed	2	2	4
Criminal records n (%) [c]	90	10	100
Prison records n (%) [d]	27	0	27

[a]Missing: 369 (75%) [b]Missing:275 (55,9%) [c]Missing: 333 (67,7%) [d] Missing: 340 (69,1%)

In relation to substance use, alcohol is, as we suspected, the most consumed substance, with 146 people who admit its use.

Followed by alcohol, the other most commonly used drugs are opiates (62 people), cocaine (51 people), cannabis (27 people) and hypnotics (11 people).

Figure 9. Substance misuse in the sample



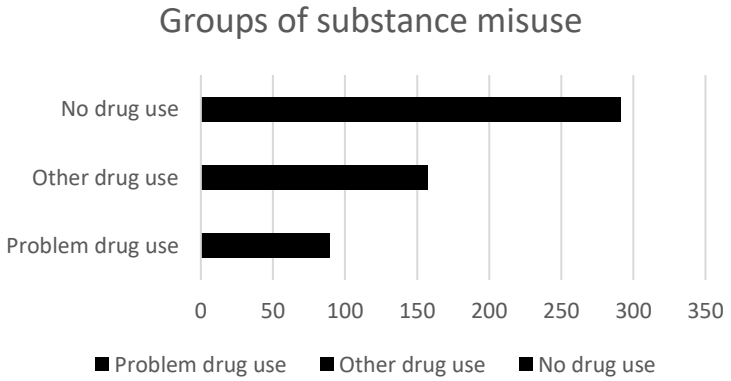
If we classify this consumption according to whether it is a problematic consumption or not, we will have 3 consumption groups.

- Problematic drug use: We understand "problem drug use" as defined by the EMCDDA; “injecting drug use or long duration/ regular use of opioids, cocaine and/or amphetamines.

  In our sample, this group represents 18.1% of the total, with 89 people using cocaine and / or opioids.
- Other drug use: This group will be composed of all those types of consumption that do not fall within the EMCDDA definition of "problematic consumption”.

  Therefore, it is made up of people with alcohol, cannabis and hypnotic consumption, which constitutes 31.9% of the sample.
- No drug use: It is the largest group. It represents 59.1% of the sample, that is, 291 people who have no substance misuse problem.

Figure 10. Groups of substance misuse



Regarding infectious diseases, the most common one was Hepatitis C Virus representing 13% of the total sample, which stood out above HIV (5,5%) and Tuberculosis (3,8%).

Table 4. Infectious diseases of the sample by gender

	Men	Women	Total
Infectious diseases n (% of the total sample)			
HIV	20 (4%)	7 (1,43%)	27 (5,5%)
VHC	50 (10,2%)	14 (2,8%)	64 (13%)
Tuberculosis	18 (3,7%)	1 (0,2%)	19 (3,86%)

On the subject of chronic diseases that were recorded in the electronic registry of the PCC, out of the total sample, 152 people had registered the diagnosis of at least one chronic disease. Therefore, 340 had no diagnosis of chronic disease, they were healthy patients.

If these 152 people were classified depending on the number of chronic diseases, it will result in a little more than half of this group, 86 people, having only one chronic disease, 40, with two chronic diseases, 19 having 3, 6 having 4 and only one person having all 5 chronic diseases.

Table 5. Chronic diseases of the sample categorized by number

	N	%
Number of chronic diseases		
0 chronic diseases	340	69,1%
1 chronic disease	86	17,5%
2 chronic diseases	40	8,1%
3 chronic diseases	19	3,9%
4 chronic diseases	6	1,2%
5 chronic diseases	1	0,2%
TOTAL	492	100%

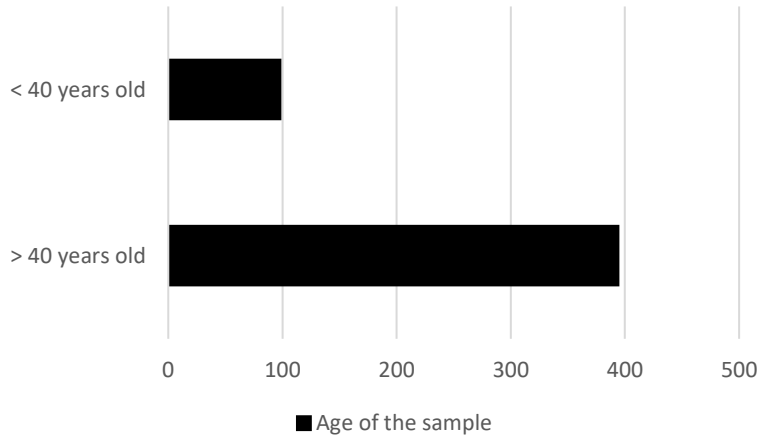
Of all people with a diagnosis of chronic disease,66 people had HT, 55 people obesity, 47 had a diagnosis of T2D, 38 people had had a CV event, 35 people a diagnosis of COPD, and 22 people had malignancies.

Table 6. Chronic diseases of the sample by gender

	Men	Women	Total
Chronic diseases n (% of the total sample)			
HT	54 (10,9%)	12 (2,4%)	66 (13,4%)
T2D	39 (7,9%)	6 (1,2%)	45 (9,15%)
COPD	29 (5,9%)	4 (0,8%)	33 (6,7%)
CVD	34 (6,9%)	2 (0,4%)	36 (7,3%)
Obesity	30 (6,1%)	21 (4,3%)	51 (10,36%)
Neoplasm	17 (3,5%)	4 (0,8%)	21 (4,3%)

Finally, regarding the age of the sample, 80% of the people was over 40 years old, which indicates as we suspected, that it is an aging population. Only 98 people were under 40 years old.

Figure 11. Age of the sample



8.2. Aging, substance misuse and chronic diseases

As we have previously mentioned, in this study we want to focus on the age of onset of chronic diseases registered in the PCC in aging problematic drug users and compare them with other homeless sample, classified depending on drug use.

In order to do this we will divide the sample into 3 groups depending on consumption:

- Aging problematic drug user.This group represents 14% of the sample, 69 people over 40 have a problematic drug use.
  The average age in these patients is 47.9 years (SD 5,4).

- People over 40 who use other drugs. It is made up of those elderly people with a substance use that would not fall within the EMCDDA classification of problematic consumption, that is, alcohol, cannabis and hypnotic consumption.
  They represent 21.1% of the sample, and are exactly 104 people.
  The average age in these patients is 55.8 years (SD 9,3).

- Over 40 years non-consumers. They are the most abundant group represented 44.9% of people over 40 in the sample.
  The average age within this group is 53.8 years (SD 10,5).

Those over 40 years are not taken into account in this part of the study since, according to the literature, they are not old enough for the appearance of chronic diseases.

Table 7. Substance misuse groups categorized by gender

	Men	Women	Total
< 40 years old			
N	79	19	98
% inside each group	80,6%	19,4%	100%
>40 years ols NO consumption			
N	184	37	221
% inside each group	83,3%	16,7%	100%
>40 years old with other drug use			
N	98	6	105
% inside each group	94,2%	5,8%	100%
Aging problem drug users			
N	57	12	69
% inside each group	82,6%	17,4%	100%
Total			
N	418	74	492
% inside each group	85%	15%	100%

Although, as we have said before, there are 152 people who have at least one diagnosis of chronic disease, not all of them have the date of diagnosis. Of the total of the people in the sample diagnosed with chronic disease in the electronic records of the PCC who are over 40 years old, we have an electronic record of the date of such diagnosis of 115 people.

Therefore, thanks to this date of diagnosis and to the date of birth, both recorded in the database, we calculate the average time in months and years that elapses until the appearance of the first chronic disease in each of the 3 groups of consumption.

In table 9 we can observe the time in months and years that passes until the appearance of the first chronic disease in the 3 consumption groups.

- People over 40 years old without substance misuse. These group has an average of onset of chronic diseases of 51,25 years, in other words, the spend an average of 51,25 healthy years.

- People over 40 years old consumers of alcohol and other drugs not considered problematic by the definition of the EMCDDA.

  These group has an average appearance of at leat one chronic disease of 52,25 years.
- Aging problematic drug users. They have the lowest age of onset of chronic diseases of the three groups, spend an average of 42,2 healthy years, before the onset of their first chronic disease.

Table 8. Healthy months in the different groups

	Healthy months			
	Mean			**Median**
	Confidence interval at 95%			
	Value	Inferior limit	Superior limit	Value
Groups				
>40 years old NO consumption	614,9	569,95	660,04	586
>40 years old other drug use	625,9	586,5	665,34	621
Aging problematic drug user	506,55	471,9	541,22	494

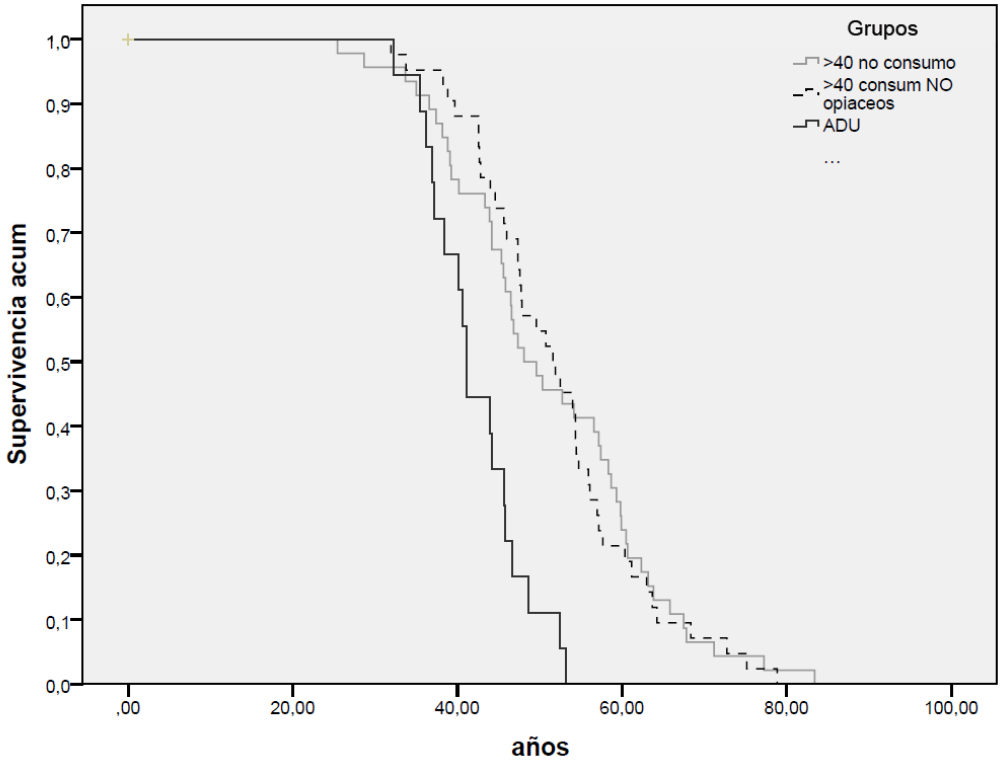
Table 9. Healthy years in the different groups

	Healthy years			
	Mean			**Median**
		Conficende interval at 95%		
	Value	Inferior limit	Superior limit	Value
Groups				
>40 years old NO consumption	51,25	47,6	54,9	48,1
>40 years old with other drug use	52,16	48,9	55,35	51,6
Aging problematic drug users	42,2	39,5	44,9	41,16

After performing the Kruskal-Wallis test we can say that, since the value of p (Sig. Asymptot.) is less than 0.05, we can conclude that there is sufficient evidence to state that the time until the onset of the first chronic disease differs between the 3 groups of consumption.

Finally, a survival analysis is carried out using the kaplan-meier method, through which we obtain curves that show the time until the appearance of the first chronic disease.We can see that there is a separation between the curve of the aging problematic drug users group and the rest. The curves of the two remaining groups are more similar. However, we cannot make this difference is significant.

Figure 12. Time in years until the onset of a chronic disease



In these curves, we can see that at age 40, about 34% of "Aging problematic drug user" have at least one chronic disease. Meanwhile, at 40 years in the group of non-consumers 20% have at least one chronic disease and the group of alcohol consumers a little less than 10%.

At 50, 90% of Aging problematic drug users have chronic disease. In the non-consumer group this group represents 54%, and in the alcohol and other drug group 45%.

At age 60, most people within each of the groups have a chronic illness. In the group of aging problematic drug users 100% of them have a chronic disease, in the group of consumers of alcohol and other drugs or non-consumers there are about 75-80% of people with at least one chronic disease.

9. Discussion

It is a fact that the homeless population is an aging population. In our sample, specifically, 80% are over 40 years old. This makes the management of other diseases important, among which are chronic diseases.

In addition, in this aged population, as in the general aged population there is an increasing use of drugs. This consumption also has risks, including exacerbation and acceleration of chronic diseases. This adds one more risk to an already vulnerable population.

For this reason, we wondered if the different drug consumption in the aging (> 40 years old) homeless population aged can be a risk factor for the earliest occurrence of these chronic diseases.

With this study, we can conclude that if there is a difference in the age of onset of chronic diseases in the 3 different consumption groups. However, with these results we cannot guarantee the association of consumption with the early appearance of diseases, since we have not done an analysis considering the variables that can cause confusion.

The median age of occurrence of chronic diseases in the “aging problematic drug users” group is 41 years. 90% of this population group has some chronic disease at 50 years. In the "alcohol and other drugs use" group the median age is 51,6 years old, and in the “no drug consumption group” 48,1 years old.

This results march what was found in the literature. A study carried out in San Francisco, reported that 85% of the general homeless people over 50 had at least 1 chronic medical condition.(42) It is for this and for the appearance of other diseases that various researchers propose to consider the homeless population old from 50 years of age and not the 65 years considered in the general population.

However, if the older homeless population is a very poorly studied collective, drug use in this population and its effects is even less so. Hence, there are no studies regarding the occurrence of chronic diseases in homeless people who also use drugs.

Nevertheless, this has been studied in the general population, concluding in these studies that the use of drugs accelerates these conditions associated with age at ages as early as 40 years.

Although these have only been studied in the general population, we would not expect to find many differences regarding the homeless population, since older drug users are often socially excluded and isolated from their family, friends and social networks outside the drug users' networks. They are more marginalized, have higher levels of unemployment, lower education, they are more often homeless, and they are more likely to have been in prison.

In other words, older drug users are people generally at high risk of social exclusion and poverty, and, thus, homelessness.

Limitations of the study

The current study is not without limitations and, therefore, the results may vary.

To begin, we can identify a selection bias. At the beginning of the study, almost half of the sample is discarded due to lack of clinical information. To explain this, we must consider the characteristics of the study population. The homeless are a group difficult to find and, above all, to follow up. This causes that many of them get out of control as in this case.

About information bias, these data have been collected from electronic records of the public health system and, therefore, it cannot be guaranteed that the diagnoses were obtained correctly or using the same measuring instrument. In addition, due to the characteristics of the study population, which is difficult to follow, there may be an underdiagnosis error, and there may be people not diagnosed or diagnosed late for such diseases. Nor can we ensure, for the same reason, the temporal sequence of drug use and the subsequent occurrence.

Finally, we can also identify confusion bias. We are dealing with a topic, which is age of onset of chronic diseases, which depends on a very broad list of factors that may be causing error. To minimize this error, a regression should have been made. Therefore, as this regression could not be done, we can guarantee that there is a difference between the time of appearance in the 3 groups, but we cannot guarantee the association of this different age of onset with consumption.

Impact of the study and future perspectives

First, as we know, a more thorough study of this aging homeless population is important. It is necessary to study this population change in order to establish housing, health and social assistance policies aimed at this group of people, currently neglected.

Whether the results are finally different or not among homeless people aged according to consumption, what we know for sure is that we are facing a population with special needs. Also, within this population that is already at risk, it is important to determine whether drug use really poses an added risk. for adequate control by the health system and services directed at this population.

If finally both homelessness and drug use prove to be risk factors for the early aging of the population, it would be important to anticipate the effects at younger ages for better patient control, as well as establish measures for a better quality of life of those patients already diagnosed.

10.Conclusion

Therefore, after conducting the study we can conclude that there are differences in the time of appearance of chronic diseases in individuals experiencing homelessness classified depending on their drug consumption, being the aging problematic drug users those exposed to an earlier onset of them.

However, we cannot assure the association between consumption and the age of appearance, having not done an analysis taking into account the different factors that can cause confusion.

11.Bibliography

1. Office of the High Commissioner for Human Rights. CESCR General Comment No. 4: The Right to Adequate Housing (Art. 11 (1) of the Covenant). Geneva: OHCHR; 1991.

2. Busch-Geertsema V, Eoin WE, Sullivan O', Pleace N. Homelessness and Homeless Policies in Europe: Lessons from Research. Brussels: European Consensus Conference on Homelessness; 2012.

3. Cabrera PJ, Rubio MJ. Las personas sin hogar, hoy. Rev del Minist Trab e Inmigr [Internet]. 2008 [cited 2019 Dec 16];75:51–74. Available from: http://www.mitramiss.gob.es/es/publica/pub_electronicas/destacadas/revista/numeros/75/est03.pdf

4. Busch-Geertsema V, Culhane D, Fitzpatrick S. Developing a global framework for conceptualising and measuring homelessness. Habitat Int. 2016 Jul 1;55:124–32.

5. FEANTSA. ETHOS - European Typology of Homelessness and housing exclusion. Brussels: Fédération Européenne d'Associations Nationales Travaillant avec les Sans-Abri AISBL; 2005.

6. Fédération Européenne d'Associations Nationales Travaillant avec les Sans-Abri. Homeless in Europe. The sate of emergency shelters [Internet]. Brussels: FEANTSA; 2019 [cited 2019 Dec 26]. Available from: https://statswales.gov.wales/Catalogue/Housing/Homelessness/

7. Pierre Foundation Abbé, Fédération Européenne d'Associations Nationales Travaillant avec les Sans-Abri. Fourth Overview of Housing Exclusion in Europe. FEANTSA; 2019.

8. Eurostat. Living conditions in Europe [Internet]. Luxembourg: Publications Office of the European Union; 2018 [cited 2019 Dec 26]. Available from: http://ec.europa.eu/eurostat/about/policies/copyright

9. Fundació Arrells [Internet]. En la Union Europea. 2019 [cited 2019 Dec 26]. Available from: https://www.arrelsfundacio.org/es/personas-sin-

hogar/problematica/europa/

10. Instituto Nacional de Estadística. Encuesta de centros y servicios de atención a las personas sin hogar. Madrid: INE; 2018.

11. Ministerio de Sanidad Consumo y Bienestar Social. ESTRATEGIA NACIONAL INTEGRAL PARA PERSONAS SIN HOGAR 2015-2020 [Internet]. Ministerio de Sanidad, Consumo y Bienestar Social; 2015 [cited 2019 Dec 26]. Available from: https://www.mscbs.gob.es/ssi/familiasInfancia/ServiciosSociales/docs/EstrategiaPSH20152020.pdf

12. Arrels Fundació [Internet]. En Cataluña. 2019 [cited 2020 Jan 24]. Available from: https://www.arrelsfundacio.org/es/personas-sin-hogar/problematica/cataluna/

13. XAPSLL. Podries ser tu [Internet]. 2018 [cited 2019 Dec 26]. Available from: http://sensellarisme.cat/ca/el-recompte-2018-comptabilitza-956-persones-dormint-al-carrer-i-2-099-allotjades-en-equipaments/

14. Agència de l'Habitatge de Catalunya, Institut D. Quantificació i distribució territorial de la població mal allotjada a Catalunya. Informe de resultats. Barcelona: Agència de l'Habitatge de Catalunya; 2016.

15. Meert H, Benjaminsen L, Cabrera P, Dandolova I, Fernández E, Filipovic M, et al. L'evolution des profils des sans-abri: Une depéndanse persistante à l'égard des services d'urgence en Europe: Qui et Pourquoi? [Internet]. Brussels; 2005 [cited 2019 Dec 22]. Available from: www.feantsa.org

16. Fazel S, Geddes JR, Kushel M. The health of homeless people in high-income countries: Descriptive epidemiology, health consequences, and clinical and policy recommendations. Lancet. 2014 Oct 25;384(9953):1529–40.

17. Gaetz S, Donaldson J, Richter T, Gulliver T. The State of Homelessness in Canada 2013 [Internet]. Toronto: Homeless Hub; 2013 [cited 2019 Dec 22]. Available from: www.homelesshub.ca

18. Substance Use and Adicction. The Homeless Hub [Internet]. 2019 [cited 2020

Jan 10]. Available from: https://www.homelesshub.ca/about-homelessness/topics/substance-use-addiction

19. Palepu A, Gadermann A, Hubley AM, Farrell S, Gogosis E, Aubry T, et al. Substance Use and Access to Health Care and Addiction among Homeless and Vulnerably Housed Persons in Three Canadian Cities. PLoS One [Internet]. 2013 Oct 4 [cited 2020 Jan 10];8(10):e75133. Available from: https://dx.plos.org/10.1371/journal.pone.0075133

20. Caton CLM, Dominguez B, Schanzer B, Hasin DS, Shrout PE, Felix A, et al. Risk factors for long-term homelessness: Findings from a longitudinal study of first-time homeless single adults. Am J Public Health. 2005 Oct;95(10):1753–9.

21. O'Toole TP, Gibbon JL, Hanusa BH, Freyder PJ, Conde AM, Fine MJ. Self-Reported Changes in Drug and Alcohol Use after Becoming Homeless. Am J Public Health. 2004;94(5):830–5.

22. North CS, Eyrich KM, Pollio DE, Spitznagel EL. Are Rates of Psychiatric Disorders in the Homeless Population Changing? Am J Public Health. 2004;94(1):103–8.

23. Breakey WR, Fischer PJ, Kramer M, Nestadt G, Romanoski AJ, Ross A, et al. Health and mental health problems of homeless men and women in Baltimore. JAMA [Internet]. 1989 Sep 8 [cited 2020 Jan 10];262(10):1352–7. Available from: http://www.ncbi.nlm.nih.gov/pubmed/2761036

24. Burt MR, Aron LY, Douglas T, Valente J, Lee E, Iwen B. Homelessness: Programs and the People They Serve | Findings of the National Survey of Homeless Assistance Providers and Clients [Internet]. Washington DC: Urban Institute; 1999 [cited 2020 Jan 10]. Available from: http://www.urban.org/publications/310291.html.

25. Stringfellow EJ, Kim TW, Gordon AJ, Pollio DE, Grucza RA, Austin EL, et al. Substance use among persons with homeless experience in primary care. Subst Abus. 2016 Oct 1;37(4):534–41.

26. Fédération Européenne d'Associations Nationales Travaillant avec les Sans-Abri.

GOOD PRACTICE GUIDANCE FOR WORKING WITH PEOPLE WHO ARE HOMELESS AND USE. Brussels; 2017.

27. 2017 REPORT EXECUTIVE SUMMARY SPANISH OBSERVATORY ON DRUGS AND ADDICTIONS SURVEY ON ALCOHOL AND DRUGS IN SPAIN [Internet]. [cited 2020 Jan 13]. Available from: http://www.pnsd.msssi.gob.es/profesionales/sistemasInformacion/home.htm

28. Muñoz López M, Vázquez Valverde C, Cruzado Rodríguez JA. Personas sin hogar en Madrid : informe psicosocial y epidemiológico. Madrid: Consejería de Integración Social, Secretaría General Técnica; 1995.

29. Panadero S, Vázquez JJ, Martín RM. Alcohol, poverty and social exclusion: Alcohol consumption among the homeless and those at risk of social exclusion in madrid. Adicciones. 2017;29(1):33–6.

30. Instituto Nacional de Estadística. Encuesta a las personas sin hogar. Avance de resultados. Madrid: INE; 2012.

31. Fajardo Bullón F. Poliadicción y edad de inicio del consumo en personas sin hogar. Rev Española Drog. 2011;36(4):393–402.

32. European Monitoring Centre for Drugs and Drug Addiction [Internet]. Problem Drug Use. 2019 [cited 2020 Jan 10]. Available from: http://www.emcdda.europa.eu/topics/problem-drug-use_en

33. Grenier A, Barken R, Sussman T, Rothwell D, Bourgeois-Guérin V, Lavoie J-P. A Literature Review of Homelessness and Aging: Suggestions for a Policy and Practice-Relevant Research Agenda. Can J Aging [Internet]. 2020 [cited 2020 Jan 22];35(1):28–41. Available from: https://doi.org/10.1017/S0714980815000616

34. Hahn JA, Kushel MB, Bangsberg DR, Riley E, Moss AR. Brief report: The aging of the homeless population: Fourteen-year trends in San Francisco. J Gen Intern Med. 2006;21(7):775–8.

35. Spinelli MA, Ponath C, Tieu L, Hurstak EE, Guzman D, Kushel M. Factors associated with substance use in older homeless adults: Results from the HOPE

HOME study. Subst Abus. 2017 Jan 2;38(1):88–94.

36. European Monitoring Centre for Drugs and Drug Addiction. Treatment and Care for Older Drug Users. Lisbon: EMCDDA; 2010.

37. Lindsey WT, Stewart D, Childress D. Drug interactions between common illicit drugs and prescription therapies. Am J Drug Alcohol Abuse. 2012 Jul;38(4):334–43.

38. Moore AA, Whiteman EJ, Ward KT. Risks of combined alcohol/medication use in older adults. Am J Geriatr Pharmacother. 2007 Mar;5(1):64–74.

39. Kuerbis A, Sacco P, Blazer DG, Moore AA. Substance Abuse Among Older Adults. Clin Geriatr Med. 2014;30(3):629–54.

40. Rothberg MB, Herzig SJ, Pekow PS, Avrunin J, Lagu T, Lindenauer PK. Association between sedating medications and delirium in older inpatients. J Am Geriatr Soc. 2013 Jun;61(6):923–30.

41. Institute for Addiction Research at the Frankfurt University of Applied Sciences. Better Treatment for Ageing Drug User. Luxembourg; 2018.

42. Garibaldi B, Conde-Martel A, O'Toole TP. Self-reported comorbidities, perceived needs, and sources for usual care for older and younger homeless adults. J Gen Intern Med. 2005 Aug;20(8):726–30.

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13.ANNEXES

Annex 1.

Table 10. Proposed global framework by Busch-Geertsema, Culhane, &Fitzpatrick, 2016.(4)

		Subcategory	
1.	People without accommodation	1(a)	People sleeping on the streets or in other open spaces (such as parks, railway embankments, under bridges, on pavement, on river banks, in forest, etc.)
		1(b)	People sleeping in public roofed spaces or building not intended for human habitation (such as bus and railway stations, taxi ranks, derelict building, public buildings, etc.)
		1(c)	People sleeping in their cars, rickshaws, open fishing boats and other forms of transport
		1(d)	'Pavement dwellers' – individuals or households who live on the street in a regular spot, usually with some form of makeshift cover
2.	People living in temporary or crisis accommodation	2(a)	People staying in night shelters (where occupants have to renegotiate their accommodation nightly)
		2(b)	People living in homeless hostels and other types of temporary accommodation for homeless people (where occupants have a designated bed or room)
		2(c)	Women and children living in refuges for those fleeing domestic violence
		2(d)	People living in camps provided for 'internally displaced people' i.e. those who have fled their homes as a result of armed conflict, natural or human-made disasters, human rights violations, development projects, etc. but have not crossed international borders
		2(e)	People living in camps or reception centres/temporary accommodation for asylum seeker, refugees and other immigrants.
3.	People living in severely inadequate and/or insecure accommodation	3(a)	People sharing with friends and relatives on a daily basis
		3(b)	People living under threat of violence
		3(c)	People living in cheap hotels, bed and breakfast and similar
		3(d)	People squatting in conventional housing
		3(e)	People living in conventional housing that is unfit for human inhabitation
		3(f)	People living in trailers, caravans and tents
		3(g)	People living in extremely overcrowded conditions
		3(h)	People living in non-conventional buildings and temporary structures, including those living in slums/informal settlements