Master of Public Health

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Renouncement to dental care of underserved population:

a research among university service patients in Paris.

Lisa Friedlander

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Service odontologie du Groupe Hospitalier Pitié Salpêtrière

Professional advisor: Dr Frédéric Rilliard, Praticien Hospitalier
Academic advisor: Dr Olivier Grimaud, médecin de santé publique

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List of acronyms used

-AME: Aide Médical d'Etat

-AOI: Aide Odontologique Internationale

-AP-HP: Assistance Publique Hôpitaux de Paris

-CMUc: Couverture Médicale Universelle

-DMFT: Decayed and/or Missing and/or Filled Teeth

-GHPS: Groupe Hospitalier Pitié

-PASS: Permanence d'Accès aux Soins de Santé

1). Abstract

1.1. What was the rationale for the project?

Drop-out from medical care, including drop-out from oral-dental care programs, has been extensively researched (12,23). However, no studies have focused on drop-out from medical care within the specific setting of drop-out prompted by non-financial reasons given that the patients could exploit 100% free coverage of their medical fees. The focus of this study is therefore to identify the social and medical patient parameters that could represent explanatory factors of drop-out, and to improve patient management by increasing patient acuity in terms of risk factors for potential care drop-out.

In short, the study aims to address the following issue: Patients utilizing the PASS service are given full support for the prosthodontic care and treatment programs they are entitled to. So why, despite free provision of care, do they drop out?

1.2. How was the project led?

The study was conducted on a 2004 database compiled using social background data recorded by a social worker during treatment initiation interviews conducted following the first consultation. A descriptive analysis was conducted followed by multivariate regression to model the risk factors for drop-out from care. All the patients were being delivered care under the PASS system at the Pierre Fauchard care centre for scheduled treatment programs. The common denominator to the patients was that all had been interviewed by the resident social worker, which guarantees optimal reliability for the social background data recorded, and all had passed a panoramic X-ray on the first day they were drafted in.

The study enrolled all patients that had been through the steps involved in consultation with a referral dentist, had been interviewed by a social worker, and had a case file with the eligibility commission, over the period 01/01/2004 to 31/12/2004.

The study was run retrospectively by screening the files in the patient listing, recovering and analyzing panoramic X-rays, and cross-comparing social background records.

1.3.   What discoveries were made?

Starting out from a sort of 'composite picture' of the patient typically representing the highest probability of dropping out of care, several conclusions can be drawn:

The patient qualifying for the oral-dental health PASS but discontinuing care is single (but has friends-and-family support), with no dependants, and comes from outside the EU. They live in self-contained housing, which in 50% of cases is in Paris. They have gone further than secondary-school education.

In almost 1 in 2 cases they do not have basic healthcare coverage, and very few of this patient population reported having complementary insurance coverage.

Multivariate analysis shows that of all the medico-economic variables studied, the most significant are variable missing anterior teeth followed by basic and complementary healthcare insurance coverage.

Keywords: renouncement, social protection, oral dental care, vulnerable populations.

2). Introduction

The framework law dated 29 July 1998 enacting French social inclusion policy initiated a move by public-sector hospital services to provide permanent access to continuing healthcare (acronymed as the 'PASS' scheme) for vulnerable populations, the aim being to facilitate access to the regular statutory healthcare system and to help these populations complete the procedures necessary.

On 17 June 1998, Antoine DURRLEMAN, Director-in-Chief of the Assistance Publique–Hôpitaux de Paris (AP-HP; Paris city public hospitals system) tasked Professor Françoise ROTH, former head of the Garancière Dentistry Department at Hôtel-Dieu Hospital Paris, with the mission of assessing the dental care offer for the most vulnerable populations in the Greater Paris region. One of the conclusions she filed (21,22) underlined the lack of a system-coordinated dental care offer, prompting the creation of a specific medico-social care delivery structure offering treatment management for patients dropping out of dental care for financial reasons. Thus, on 2 September 2002, the new Pierre FAUCHARD care centre, a Functional Unit ('UF') branch of Garancière Dentistry Department at Hôtel-Dieu Hospital Paris, opened its doors to the public.

Despite the complex conditions governing patient recruitment in adult populations whose socio-economic vulnerability can be incompatible with following mid-to-long-term dental treatment (in contrast with children or elderly populations), few studies have focused on this issue (3,6,25). The few published studies generally base their social background data on interviews led by people who are not trained social workers, which can consequently compromise the validity of the data collected. Most research into the general or dental health of socio-economically vulnerable populations has not identified specific morbidity but rather a trend towards heavier alterations in dental health than in the general population.

Several studies have attempted to associate clinical data from investigations performed according to World Health Organization (WHO) protocols (centered on a cursory dental examination) using basic socioeconomic data such as age, gender, and socioprofessional category (1,24), occupation (26), or resource levels (18). These studies confirm the established fact that states there are no socio-economic exclusion-specific diseases, but rather a tendency for dental health to get worse in patients exposed to multiple dimensions of social exclusion.

It is important to distinguish drop-out from dental care for economic reasons, which is an important selection criterion for PASS scheme eligibility, and drop-out mid-treatment when the economic reasons no longer apply. Indeed, within this framework, where dental care is entirely welfare-sponsored, the reasons for drop-out would be linked to factors intrinsic to the social vulnerability of the consultants on one hand and potential deficits in patient intake and management on the other.

The point is to assess which motivations prompt socially-vulnerable patients to drop out, or indeed conversely to lead their oral treatment programs through to the end, and identify the alarms signalling that action needs to be taken in order to better accommodate the patients most likely to drop out of treatment.

3). Materials and Methods
3.1. Study site and timeline

The study was led at the Pitié-Salpêtrière Hospital Complex ('GHPS') Department of Dentistry on patients consulting the Continuing Oral-Dental Care centre services. The oral-dental health PASS scheme is open to any person facing financial difficulties that exclude them from access to dental care. A functional unit of the hospital's dentistry department, it provides disadvantaged populations with "welfare dentistry" stretching as far as "dental"

prosthetic rehabilitation.

As soon as the clinic was opened, a partnership agreement was signed with the Emmaus association, the emergency outreach assistance service for the homeless ('Samu Social'), Médecins du Monde, the "AOI" international dental aid service, and the "bus dentaire" mobile community dental care outreach service. Patients who are referred to the clinic by the association are fast-tracked into priority care via a time-window dedicated exclusively to this population. Anyone can qualify for oral and dental rehabilitation, regardless of their health insurance coverage. The decision to fully cover all medical treatment fees is based on assessment of the patient's medico-social records by a commission of members of the hospital care team. The commission comprises the GHPS director-in-chief or his/her representative from the social services side of the GHPS (thus bringing together social and administrative expertise), the head of the Garancière Department of Dentistry (Paris 6th district) and/or the clinic head from the medical expertise side of the GHPS. The service is open to anyone over 15 years 3 months of age. It delivers care to anyone who needs oral dental treatment, irrespective of where their financial resources come from. The patient is integrated into a care delivery circuit that features a series of stages: making contact with the clinic, compiling medico-social records (medical interview and assessment by the PASS scheme referral physician, followed by an interview with the social worker to compile the social support file), then the patient sees a physician or hospital intern to be given primary care, and in some cases will also be interviewed by the commission to decide on eligibility for prosthetic treatment. One of the factors determining the results observed here is the specificity of the population studied, for which patient parameters are marked not just by economic vulnerability but equally social vulnerability.

The clinic opened in September 2002 to provide low-income patients with social support and all-round oral rehabilitation (oral and prosthodontic care). This structure allows professional, social and medical reinsertion. The missions of the PASS extend beyond bringing primary oral rehabilitation to encompass making sure the population gets the wider benefits of social security in terms of basic health coverage plus assistance on mutual-funded care. In other words, as a collectively-funded oral care delivery system, the fundamental mission of the oral-dental PASS scheme is to allow patients received in this framework to access the statutory universal healthcare system via social support designed to secure appropriate disease coverage.

The study was conducted on patients admitted for consultations over a one-year period. Analysis begins with descriptive statistics before employing analytical statistics to demonstrate certain correlation factors between social and dental health parameters and then associate these parameters with dental care drop-out.

The setting is a university hospital tasked specifically with intake and management of dental care drop-out for financial reasons. Study population was 456 patients.

The study was run retrospectively by screening the files in the patient listing, recovering and analyzing panoramic X-rays, and cross-comparing social records.

Treatment was generally delivered by interns approaching the end of their program, and whowere supervised by tutors and hospital experts. Treatment tends to take longer than usual, as the students are still in the learning curve. These conditions mean patients need to demonstrate regular attendance and cooperative availability.

The study is based on analysis of three groups for which the adjustment variable is their ability to comply with the treatment program through to the end.

Of the 456 patients who consulted during the study year:

- 188 (41%) had discontinued their treatment before it was completed
- 81 (18%) had completed treatment
- 186 (41%) were still in treatment

For coherency purposes, we have focused the analysis on the "care discontinued" and "care completed" groups, as the "care in progress" group introduces too much randomness since it includes patients who will go on complete the care and patients who will drop out. For the third group, "care in progress", patients who are still on care at the end of the year, we'll explain the different issues that can be meet in the discussion part.

3.2. Data collection specificity

Data have been collected through different ways. Social and economic ones have been collected by the social worker during the first social meeting with the patient.

Then, dental data were added to the previous ones to complete the global cohort. All the patients who have been seen by the social worker during this year have been included in the study if all the variables we wanted to work on were available and if the medical file was complete. These data are routine data that have been cleaned to become a material we can work on. Giving sense to data from Excel to Stata was a long process.

For the study, we gave the name « renouncement » or « drop out » to patients who stopped their treatment during the year. A patient who did not come to his appointment more than

twice, or came by the emergency way, was considered as a renoucement patient.

3.3. Statistical analysis

First, a descriptive analysis was conducted, followed by a multivariate logistic regression analysis for which the primary dependent variable is drop-out from dental care, i.e. care discontinued before program completion.

Statistical analysis was performed using Stata/IC 11.0 (StataCorp, USA) for Mac. All the social parameters were associated to drop-out/completion adjusted for age and gender. First, a descriptive analysis was conducted on the three groups (drop-out, completion and care-in-progress), followed by a multivariate logistic regression analysis to test correlations between social variables and dental care drop-out.

The variables studied are as follows:

→Social variables: gender, age, marital status, demographic origin, home situation, professional situation, income, basic health coverage, complementary coverage, level of educational attainment.

→Oral variables: missing anterior teeth (incisive and canine teeth), number of missing teeth and DMFT.

4). Results

4.1. Descriptive and univariate analysis

4.1.1. Treatment continuation program registered in PASS

Based on the records files, the patients were inventoried into 3 groups, i.e.

1. dental care drop-out or discontinuation
2. dental care or treatment program identified as completed
3. others considered as treatment-in-progress (this group was not retained for the multivariate analysis in the subsequent study).

4.1.2. Social and demographic data

Table1: Descriptive and univariate analysis (Pr) for social and demographic data.

		completed	on going	renouncement	Pr Univariate analysis
age, mean years		43,17	41,24	38,05	0,003
gender	male	66,66	64,39	67,37	0,61
Civil status %	separeted/divorced	19,44	13,08	14,2	0,37
	maried	9,72	8,9	11,47	
	single	58,33	62,3	65,57	
Friends-and-family support %	yes	70,42	74,21	83	0,14
Living with partner %	yes	15,49	15,26	16,93	0,64
origin %	french	16,43	22,28	18,47	0,41
	European Union	1,37	0,52	1,63	
	no EU	82,19	77,2	79,89	
Educational attainement %	High and secondary education	66,15	76,81	74,4	0,34
	Primary and unschooled	35,88	22,52	25,58	

Table 1 shows that in the group 'renouncement', patients are younger than in the two other groups. The three groups are comparable for gender, they all have more men then women. For the civil status, we can notice that in the three groups, there is more single patients (a little bit more for the renouncement group). We don't really point any differences in the distribution for the variable 'friends and family support' but we can see that the proportion is higher in the renouncement group, which is the same for the variable 'living with partner'. For the variable 'origin', we can see that most of the patients come from an non European country and that we don't see big differences between the groups. For the variable 'educational attainment', we don't show any significant differences between the groups.

4.1.3. Social and economic data

Table2: Descriptive and univariate analysis (Pr) for social and economic data.

		completed	on going	renouncement	Pr Univariate analysis
dependent* %	yes	12,67	17,8	18,47	0,64
housing %	Self contained	63,38	64,21	62,63	0,94
	Boarding hostel	30,98	28,42	29,67	
	Borderline homeless	1	4,21	2,74	
	Street/squatt	5,63	3,15	4,94	
house hold income %	Disability benefits	18,05	15,49	10,47	0,02
	Social welfare benefits	6,06	7,27	5,32	
	pension	1,51	6,06	3,55	
	salary	3,03	4,84	0,59	
	other	42,42	31,18	31,36	
	nothing	18,78	29,09	40,23	
basic coverage %	Social security	15,71	24,47	18,57	0
	AME (state sponsored medical aid for migrant)	51,42	48,43	29,5	
	Universal healthcare coverage	20	13,02	7,1	
	paying	11,42	14,06	43,16	
	Foreign coverage	1,42	0	1,09	
complementary coverage	without	22,22	28,07	46,15	0,085
	complementary	5,55	24,56	15,38	
	Complementary Universal healthcare coverage	72,22	47,37	38,46	

dependents means if the patients has to take care of people (parents, children…)

Table 2 shows that proportion is lightly higher for the variable 'dependant' for the renouncement group. For the 'basic' and 'complementary' coverages, we can see that patients who renounce to care are the one who have the worst coverage as social security without anything else, or no complementary coverage. Patients who are covered by the

Universal Healthcare and the Complementary Universal Healthcare are the ones who better carry on their treatment.

4.1.4. Dental data

Table3: Descriptive and univariate analysis (Pr) for dental data.

	completed	on going	renouncement	Pr Univariate analysis
missing teeth	12,92	8,49	7,04	0,001
missing anterior teeth %*	74	66	62	0,02
DMFT: decayed and/or missing and/or filled teeth	15,53	14,18	10,57	0,003

missing anterior teeth: missing incisive and/or canine teeth

Table 3 highly shows that missing anterior teeth, number of missing teeth and DMFT are associated to renouncement where the most important these variables are, the less the patient renounce to dental care.

Results of univariate analysis with Pearson Chi 2 have been put in the previous tables. We can see that the significant variables associated to renouncement (with 5% statistic thresold) are age (Pr=0,003), number of missing teeth (Pr=0,001), anterior missing teeth (Pr=0,002) and DMFT (Pr=0,003), houshold income and especially the "no resources" variable (Pr=0,02), basic coverage system (Pr=0,00).

4.2. Multivariate analysis

We performed statistical modelling by running multivariate logistic regression with drop-out as dependent variable. The initial independent variables used were all medico-social variables recorded for the 292 patients studied, i.e. number of missing teeth, DMFT, marital status, source of income, educational attainment, friends-and-family support, housing, level of income, basic healthcare insurance coverage, complementary healthcare insurance coverage, whether or not the patient has dependents, nationality, type of home, age, gender, prior tooth loss.

At this point, we can attempt to scale the model down to only the most significant independent variables (table 4), in which case the only variables retained are the one explained previously for the univariate analysis.

This demonstrates that the two most significant variables, at Pr=0.054 and Pr=0.012 for basic coverage and missing anterior teeth, respectively, are for the first one related to healthcare coverage system, and as seen earlier, if we take social security as baseline reference, then patients admitted without any healthcare coverage are the most likely to drop out of the care program. Conversely, patients benefitting from state-sponsored health insurance for immigrants (the 'AME' scheme) are not the patients dropping out of care. In this study, patients benefitting from universal healthcare coverage ('CMU' scheme) showed the lowest oral-dental care drop-out rates at the clinic.

The other variables can be stratified according to their impact on drop-out by repeating the model but ignoring the variables known to be less significant in the log regressions. This modelling process named backward selection (table 5) highlights that after the missing anterior teeth, the next most significant variable is basic healthcare insurance coverage system, then number of missing teeth ans then complementary healthcare insurance coverage system. Anterior missing teeth is therefore the most highly associated to drop-out, with a higher number of missing teeth at the start of the care program indicating a lower drop-out rate at the end of the program.

Table 4: multivariate logistic regression with renouncement as dependent variable

renouncement	Odds Ratio	z	Std. Err.	P>|z|	[95% Conf.	Interval]
basic health care insurance coverage	**.3898938**	**-1.93**	**.1905588**	**0.054**	**.1495979**	**1.016172**
gender	1.309328	0.77	.4554636	0.438	.6621384	2.589094
age	.9900505	-0.76	.0130407	0.448	.9648182	1.015943
friends-and-family support	1.277726	0.66	.4778957	0.512	.6138622	2.659528
ressources	1.376725	0.92	.4763418	0.355	.6987701	2.712438
DMFT	.9918435	-0.34	.023786	0.733	.9463025	1.039576
missing ant. teeth	**.3508467**	**-2.50**	**.1467555**	**0.012**	**.1545499**	**.7964639**

Number of observation=232 (others are missing data)

Table 5: Backward selection results

renouncement	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
basic health care insurance coverage	.3197409	.1423173	-2.56	0.010	.133637	.7650146
missing anterior teeth	.2740452	.094181	-3.77	0.000	.1397302	.5374699

Number of observation=265 (others are missing data)

5). Discussion

5.1. Discussion on the descriptive and multivariate analysis

This study shows demonstrates that government-sponsored health insurance coverage plays a clearly significant role in helping patients stay within a care delivery structure and comply with a relatively long-term care process. The results demonstrate that in this study, government-sponsored health insurance is a far stronger promoter of social insertion and inclusion than level of income, which was not significantly linked to drop-out (variable 'no resources', Pr=0.35).

Our dataset shows that patients without any health insurance on admission are the most likely to drop out of dental care. Conversely, patients benefitting from state-sponsored health insurance for immigrants (the 'AME' scheme) are not patients who drop out of care. This same conclusion was drawn from a Chinese study (19) showing that, given the generally low quality of care delivery and healthcare insurance in the home country, migrants settling into a system like the AME scheme that provides them with emergency medical care and basic health insurance demonstrate fully satisfactory treatment compliance (9).

In this study, the patients benefitting from universal healthcare coverage ('CMU' scheme) showed the lowest oral-dental care drop-out rates at the clinic. This confirms the results of a study led in 2009 by Pegon-Machat *et al*. (18), which cited patients arriving at admission with government-sponsored health insurance coverage as a sure sign of continued social inclusion and a strong capacity to adhere to a regular treatment program. Here, the comparison run between prior tooth loss and basic health insurance coverage revealed a significant relationship, where better social protection (social security, CMU) associated to fewer prior tooth loss at admission (Pr = 0.006).

This correlation can be interpreted in several ways, as patients in total social exclusion, whether with regular status for residence in France and thus eligible for statutory national health insurance or immigrants with irregular status but in France for over 3 months and therefore eligible for the AME scheme, but not registered with either of these basic social protection schemes appear to be the most 'volatile'. This underlines the missions of the

PASS scheme as a vector for social support in gaining statutory rights and, as shown earlier, in signing up to mutual health insurance schemes (2).

Focusing on prior tooth loss, the multivariate analysis fully confirm the results of the descriptive analysis (Pr = 0.002) where prior tooth loss was identified as a factor or "non-drop-out" from oral-dental care programs. The social-aesthetic prejudice triggered by this physical deterioration in oral health incites the patients to stick with their treatment program (27,13). However, in the regression models, prior tooth loss was significantly associated to drop-out. This result warrants caution, as 'number of missing teeth' variable in the descriptive analysis was a strong indicator of dental care drop-out, and it is reasonable to consider prior tooth loss either as a specific factor, i.e. 'included' in the number of missing teeth (8).

This study also underlines the influence of educational attainment on the aesthetic requirements of the patients, which overlaps with our results, since the Pearson's chi² test on tooth loss and educational attainment (Pr = 0.0001) shows that higher educational attainment is associated to lower prior tooth loss. The results of the survey research indicated that the individuals canvassed were mostly university or high-school graduates with a permanent source of income (20). However, they did claim that their financial capacity influenced the frequency of their visits to the dentist. Most patients described the state of their teeth as satisfactory or even bad. All patients recognized the need to improve their dental health. They expected the treatment to improve the appearance of their teeth and smile, as well as their self-esteem.

Focusing on marital status as a variable, when 'married' is used as the benchmark, neither 'single' patients nor 'separated'/'divorced'/'widowed' patients present a higher risk of treatment drop-out (P = 0.59), in agreement with the study led in 2002 by Manski *et al*. (14).

For the dependents variable, the results show similar patterns as patients that live with a partner and patients that have friends-and-family supports tend to demonstrate a lower drop-out rate. At this point, we can draw the same conclusions as a study led in 2003 by Heft MW *et al*. (11) which claimed that patients with family responsibilities showed a desire to take responsibility for their own dental care. This phenomenon may involve two explanatory factors: the importance of social ties as a factor for non-exclusion, together with dependency as a motivator and factor for treatment compliance.

The results from the descriptive analysis cross-correlating drop-out rates against educational attainment show patients with a higher level of education (to "higher education") are less likely to drop out of care whereas unschooled patients are most likely to drop out of care. We found no significant difference between patients with "primary" schooling and patients with "higher education" schooling. This is in agreement with several previous reports, including

the studies (10,16) demonstrating i) the role of health education in how people address and perceive their own body, and ii) the role of the social background that encouraged patients to follow schooling, which is more or less tied to better health education. Is there a positive effect on demand for healthcare, which would validate hypothesis of a behavioural mechanism? In this study, educational attainment was associated to health insurance coverage (Pr=0.05): it is clearly more difficult to get health insurance coverage for someone who has never been to school, is illiterate, and living in a country whose language they have trouble understanding. Beynet & Menahem (6) report that "*vulnerable populations often feel overawed by the healthcare system and regret that they do not know who to turn to for assistance".* An equally important factor is that only half of the free healthcare centres canvassed by the authors knew where to redirect patients with dental issues, while only 5% of people refuse to seek dental care – even if it is provided free. This point is discussed below.

5.2. General discussion on drop-out from medical care at free-access healthcare delivery centres

As shown by Parizot & Chauvin (7), free-access healthcare delivery centres, both hospital-based or associatively-run, occupy a specific position within the French health system, as they are designed to provide healthcare for populations who do not have well-recognized health insurance coverage. The care management service they provide therefore carries a social welfare dimension. However, the first sociology studies on this topic, starting with Simmel in 1908, were quick to highlight how social welfare itself connotates people as "poor". More recent research even qualifies welfare as penalizing or stigmatizing, as welfare support cements the beneficiaries' inability to provide for themselves and materializes their dependency. As Lewis Coser underlined, "*the very fact of being given aid or assistance can itself dictate "poor" people's career path, alter their core identity, and become a 'stigma' marking all of their interactions with other people*".

That said, the individual's position in relation to state institutions is never permanent indelible. In free-access care centers, patients internalize at the same time as they negotiate the prevailing social norms (5). Similarly, their identities are renegotiated through the interactions with staff and other users. As their care initiative runs through the phases, and alongside any shift in their social or health system status, it is ultimately their relationship to healthcare organizations that is progressively forged, negotiated and defined. Pierre Chauvin addressed this issue, showing that in the early stages of care process, many patients learning to attend a humanitarian aid centre or PASS-scheme clinic experience the process as potentially degrading. They feel that having to ask for free healthcare undermines their self-esteem, to

such an extent that many keep their distance with the healthcare staff and tend to keep healthcare visits to a minimum. The observations suggest that in the context studied here, the combination of these factors can easily bias any assessment of the satisfaction dimension. Social vulnerability brings a decline in personal status due not only to the lack of recognition through employment or family responsibilities but also due to the social welfare factor (15). Excluded from the productivity sphere, and in many cases denied support from friends and family, the only course of action left open is to seek social welfare. However, social welfare brands 'welfare-seekers' with a lower social status and cements their dependency, thus exacerbating the feeling of social inferiority and, in turn, their lack of merit. This stigma weighs heavily, affecting their identity and marking their social interactions with others. These patterns are especially applicable in an oral and dental care setting, where welfare patients, most of whom have dropped out the care system for several years, are highly sensitive to every aspect of how their dental care is managed. Consequently, its is essential to study and optimize welfare patient acuity and satisfaction in order to improve care delivery and treatment compliance.

5.3. Limits of the study

This cohort brings different kinds of limits. First of all, the cohort was made from patients who consult in this service mostly dedicated to low income people. This may not be representative of the general population.

Then, there are some variables that have not been studied: those about any possible issues in the medical care, for example, treatment hardness and difficulty, treatment duration. These are variables that are neither directly linked to the patients' social parameters nor their economic ones, but can fully explain that patients may interrupt their treatment even though they are not done. This issue could eventually be studied in another work, to assess the influence of the medical care on patients' satisfaction. Nevertheless, we can say that for the studied population, hospital and almost this kind of service may appear as their last access to care, and even though treatment are long and sometimes realized by students, they do not have any other choice.

An other issue of this study stands on the third group considered as "treatment-in-progress". At this step of the study we do not know if these patients are going to interrupt or complete their care the year after. This group which represents 41% of the global cohort is important and may bring a bias to our statistical analysis. Nevertheless, we can see in the multivariate analysis that this group's behaviour is nearly each time "between" the two other groups,

which leads us to think that this group contains patients who will carry on and patients who will interrupt their treatement.

6). Conclusion

The results reported here were obtained on a study population that, with a few exceptions, was resident to the Greater Paris region and who, on paper, were facing more financial difficulties that the general population of the region. Records files for the PASS scheme are compiled and validated for patients for patients dropping out of dental care for financial reasons. This study confirms that one of the keys to understanding the behaviour of patients on care programs is to identify and analyze the cumulative processes compounding social difficulties and their impact on health – in this case dental health, where number of missing teeth was an explicit indicator.

The results demonstrate the important role of health insurance coverage as a factor for integration or, conversely, exclusion. They also underline how the recently-introduced French universal healthcare coverage scheme ('CMU') has had a dual impact, not only i) providing financially vulnerable patients with access the healthcare, but also – and this is a critical point – ii) of getting them to invest in a care provision process and thus in the process of social integration and inclusion. The study revealed that this parameter determines treatment compliance, at least when treatment is free.

Furthermore, this study showed how important could be the "aesthetic" parameter (the missing anterior teeth variable), and how the huge prejudice caused by visible mouth alteration, even though for population who have many other important issues that can sometimes be considered by doctors, is important.

The study does however remain limited by the fact that it does not address broader and more in-depth individual characteristics than medical-social-economic indicators. Valuable characteristics for study would be subjective variables such as the patient's perception of their situation, their lifestyle, or psychosocial characteristics reflecting self-esteem and/or feelings of discrimination.

Our findings and the perspectives studied demonstrate how healthcare and social protection research can find utility in accounting for social dimensions that have so far largely been ignored in epidemiological research and French public health studies

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8). Résumés (français puis anglais)

De nombreuses études ont été conduites sur le renoncement aux soins, notamment sur le renoncement aux soins bucco-dentaires. Cependant aucune étude n'avait encore été menée sur le renoncement aux soins dans le cadre spécifique où ce renoncement n'apparaît pas pour des motifs financiers car les soins sont entièrement pris en charge. L' enjeu de cette étude réalisée dans un service hospitalo-universitaire et plus précisément dans une unite fonctionnelle dédiée à la rehabilitation sociale et dentaire de patients en situation de précarité financière, était donc d'identifer d'une part, les paramètres sociaux et médicaux des patients pouvant être des facteurs explicatifs du renoncement, et d'autre part, améliorer la prise en charge en augmentant l'acuité quant aux facteurs de risques de ces patients.

Le but de l'étude a été de comprendre quels pouvaient être les facteurs de renoncement aux soins bucco-dentaires dans un contexte sans paramètre financier à prendre en compte.

L'étude a été réalisée sur la base de données de l'année 2004, grâce aux données sociales recueillies par l'assistante sociale lors des entretiens de début de traitement qui suivent la première consultation. Puis, une analyse descriptive a été réalisée suivie d'une regression multivariée afin de modéliser les facteurs de risqué de ce renoncement.

Les résultats de l'étude montre que le patient de la PASS bucco-dentaire ayant interrompu ses soins est une personne célibataire mais entourée, sans personne à charge, d'origine étrangère hors Union Européenne. Il loge dans un habitat individuel dans la moitié des cas sur Paris. Dans près de la moitié des cas, il n'est pas couvert par une couverture maladie de base et très peu de ce groupe de patients fait état d'une assurance complémentaire.

Sur toutes les variables médico-économiques étudiées, l'analyse multivariée montre que l'on peut retenir que les plus significatives sont la présence ou non d'un édentement antérieur suivie par le mode de protection sociale de base dans le sens où plus le nombre de dents absentes est élevé, plus il a présence d'un édentement antérieur et plus le mode de couverture sociale est important, moins les patients interrompront leurs soins.

Drop-out from medical care, including drop-out from oral-dental care programs, has been extensively researched. However, no studies have focused on drop-out from medical care within the specific setting of drop-out prompted by non-financial reasons given that the patients could exploit 100% free coverage of their medical fees. The focus of this study, made in an hospital service specialized for patients who can not afford to pay for dental care, was therefore to identify the social and medical patient parameters that could represent explanatory factors of drop-out, and to improve patient management by increasing patient acuity in terms of risk factors for potential care drop-out.

This study aims to address the following issue: Patients utilizing the PASS service are given full support for the prosthodontic care and treatment programs they are entitled to. So why, despite free provision of care, do they drop out?

The study was conducted on a 2004 database compiled using social background data recorded by a social worker during treatment initiation interviews conducted following the first consultation. A descriptive analysis was conducted followed by multivariate regression to model the risk factors for drop-out from care.

Our results show that patient qualifying for the oral-dental health PASS but discontinuing care is single (but has friends-and-family support), with no dependants, and comes from outside the EU. They live in self-contained housing, which in 50% of cases is in Paris.

In almost 1 in 2 cases they do not have basic healthcare coverage, and very few of this patient population reported having complementary insurance coverage.

Multivariate analysis shows that of all the medico-economic variables studied, the most significant are missing anterior teeth, followed by basic healthcare insurance coverage, where the more patients have missing teeth and missing anterior teeth and the better the basic healthcare insurance was, the less they were to interrupt their treatment.

ANNEXE

Complete backward selection

renouncement	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
basic health care insurance coverage	.3938443	.1918085	-1.91	0.056	.1516267	1.022995
gender	1.302904	.4516912	0.76	0.445	.6604164	2.570439
age	*.9905835*	*.0129046*	*-0.73*	*0.468*	*.9656112*	*1.016202*
friends-and-family support	1.276041	.4773632	0.65	0.515	.6129605	2.656419
ressources	1.393783	.4733049	0.98	0.328	.7163774	2.711744
DMFT	.9912077	.0235961	-0.37	0.711	.9460225	1.038551
missing anterior teeth	.3561082	.1470312	-2.50	0.012	.1585385	.7998877

Number of obs= 232

renouncement	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
basic health care insurance coverage	.385493	.1862447	-1.97	0.048	.1495452	.9937123
gender	1.292923	.4474697	0.74	0.458	.656114	2.547806
age	.9891944	.0123377	-0.87	0.384	.9653062	1.013674
friends-and-family support	*1.294044*	*.4820215*	*0.69*	*0.489*	*.623567*	*2.685438*
ressources	1.408129	.4763548	1.01	0.312	.7255883	2.732718
missing anterior teeth	.3366676	.1294728	-2.83	0.005	.1584358	.7154007

Number of obs =232

renouncement	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
basic health care insurance coverage	.3734917	.1786138	-2.06	0.039	.1462896	.9535612
gender	*1.285482*	*.4441243*	*0.73*	*0.467*	*.6531039*	*2.53017*
age	.9888536	.0122961	-0.90	0.367	.9650449	1.01325
ressources	1.417607	.4789949	1.03	0.302	.7310443	2.748958
missing anterior teet	.3281948	.1259571	-2.90	0.004	.154686	.6963255

Number of obs = 235

renouncement	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
basic health care insurance coverage	.3912477	.1853039	-1.98	0.048	.1546333	.9899206
age	*.9884795*	*.0121793*	*-0.94*	*0.347*	*.9648944*	*1.012641*
ressources	1.42567	.4813584	1.05	0.294	.7355674	2.763222
missing anterior teeth	.3204701	.1217673	-2.99	0.003	.1521812	.6748605

Number of obs = 235

renouncement	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
basic health care insurance coverage	.3855467	.1823517	-2.02	0.044	.1525755	.9742469
ressources	*1.501368*	*.4995105*	*1.22*	*0.222*	*.782149*	*2.88194*
missing anterior teeth	.2886704	.1050897	-3.41	0.001	.1414245	.5892234

Number of obs = 235

renouncement	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf.	Interval]
basic health care insurance coverage	.3197409	.1423173	-2.56	0.010	.133637	29 .7650146
missing anterior teeth	.2740452	.094181	-3.77	0.000	.1397302	.5374699

Number of obs = 265

Lisa Friedlander

89 rue de Sèvres

75006 Paris

dr.lisa.friedlander@gmail.com