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Bruxism and health related quality of life in Southern Italy's prison inmates

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Objective: The aim of this study was to determine the prevalence of self-assessed bruxism, the level of Health related Quality of Life (HRQoL) and their relationship in a group of male inmates. ***Basic research design, setting and participants:*** The present study was cross-sectional, its setting were penal institutions in Italy and the participants were a sample of 280 male prisoners (mean age 39.7 years). Due to the very small number of female prisoners, it was not possible to study both genders. ***Interventions and main outcome measures:*** Subjects were administered a questionnaire with items investigating demographic data, self-assessed bruxism and HRQoL using EuroQoL EQ-5D instrument. ***Results:*** Bruxism was present in 29.7% of inmates. Results for EQ-5D (in brackets data for general population age and gender matched) were: EQ-index 1.3 (0.8), EQ-VAS 62 (80). Percentage reporting a problem for each dimension: Mobility (MO): 7.5 (9.6), Self Care (SC): 6.1 (4.3), Usual Activities (UA): 17.9 (10.1), Pain/discomfort (PD): 43.9 (40.8), Anxiety/depression (AD): 54.6 (31.9). There was a strong correlation between bruxism and EQ-index, showing concordance and dependence and, as expected, discordance and dependence between bruxism and EQ-VAS. ***Conclusions:*** Bruxism prevalence is higher and HRQoL is worse in the prison population than in the general population; the presence of bruxism is correlated with lower HRQoL levels, and correlation is stronger for subjects at first prison experience and for higher education levels, thus suggesting higher effect of stress on these subjects.

Key words: *bruxism, quality of life, prisons, EQ-5D, Italy*

Introduction

Oral and dental pathologies appear to be common in imprisoned subjects, and "one under-researched area has been the oral health status and dental epidemiological investigations of individuals in the prison environment..." (Nobile *et al.,* 2007). Moreover, oral health status of prisoners has been described as "poor" (Walsh *et al.,* 2008), and achieving oral health in institutional settings remains an unsatisfied need (Glassman *et al.,* 2010).

One of the widespread problems of oral health is bruxism, or gnashing and grinding of the teeth occurring without a functional purpose, frequent in 5 to 8% of adults in the general population (Bader *et al.,* 2000). Bruxism is connected to anxiety (Fischer *et al.,* 1993), but only a small number of research papers about bruxism in prison inmates have been published, (Ciolon 1989; Cotman 1970; Singh *et al.,* 2012), and none of them have investigated the relationship between bruxism and the quality of life.

Moreover, a limited number of studies about Health Related Quality of Life (HRQoL) in prison is available (Blanc *et al.,* 2001; Plugge *et al.,* 2005). According to available bibliography, EuroQoL EQ-5D has never been used before in a prison setting.

The objective of the present study was to determine the prevalence of bruxism, the level of HRQoL with EuroQoL EQ-5D and their relationship in a group of incarcerated men.

Methods

The study population consisted of a sample of male prisoners in two penal institutions located in Campania, Southern Italy. A total number of 748 male inmates were present at the moment of the study, the questionnaire was offered to all of them, and 550 (73%) accepted to participate to the study. Of the participating subjects, 330 returned the questionnaire, but only 280 (85%) of them were complete enough to be acceptable for statistical analysis.

The penal institutions sampled are both correctional facilities in which those awaiting trials or sentencing and serving sentences of under three years are admitted, but, as in nearly all prisons in Italy, they are overcrowded, and so they admit a limited number of prisoners serving longer sentences. The questionnaire administration was performed by a trained researcher, with the assistance of the prison educators. Prior to the study, permission from prison authorities and clearance from ethics committee were obtained. Before questionnaire administration, all the subjects were informed about the purpose of the study, and that the data they provided was anonymous and would be reported only in aggregate form. Each prisoner gave informed consent before the start of the study.

The self-compiled questionnaire administered to each subject included: a demographic section (age, marital status, highest level of education obtained, employment status prior to incarceration) and imprisonment characteristics (overall years spent inprisoned, number of imprisonments, age at first conviction); a section about

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the presence of somatoform disorders, including teeth grinding; and, a section about health related quality of life, including the EuroQoL EQ-5D instrument.

The section about somatoform disorders contained the PHQ-15 questionnaire (Kroenke *et al.,* 2002), to which a specific section for bruxism was added, asking for the frequency of teeth grinding, with a 5-point scale including the following levels: 1, never through seldom, sometimes and often; to, 5, always. Bruxism was defined as present when scored as 3 and above.

The EuroQol EQ-5D descriptive system for health status (Brooks *et al.,* 2003) was developed following a review of existing health status measures, with a multidimensional structure but with simplicity: the system assesses five dimensions, mobility, self-care, usual activity, pain/discomfort and anxiety/depression, with three levels, each reflecting 'no problem', 'some problem' and 'extreme problem', with the focus of that dimension: the results for EQ-5D were scored from 1 (no problem) to 3 (extreme problem) for each dimension, and the average of the five dimensions gave the EQ-index. The online version of this paper has attached the Italian and English versions of the questionnaire used. Any missing answer is treated as "zero" value, so the average EQ-index can be lower than 1, as it happened in Italian general population results (Savoia *et al.,* 2006).

In addition to the multidimensional descriptive system, the EQ-5D also includes a 20 cm visual analogue scale (VAS) as a means of valuing the respondent's health state within the descriptive system. The end-points of the EQ-5D VAS are labeled "best imaginable health state" and "worst imaginable health state" anchored at 100 and 0, respectively. The respondents are asked to indicate how they rate their own health state by drawing a line from an anchor box to that point on the VAS which best represents their own health on that day; the result of the VAS scale (from 0 to 100) was scored as selected by the respondent.

In our research, we defined bruxism score as a direct scale, i.e. higher values indicating greater pathology. Thus, the EQ-index scores are higher when the presence of problems for each dimension is greater.

On the contrary, EQ-VAS is a reversed scale with a low value indicating poor quality of life. Thus, we expected to find a direct correlation between bruxism and EQ-index, as well as a reverse correlation between bruxism and EQ-VAS.

Results

The internal consistency of the EQ-5D scale was calculated by Cronbach's Alpha and compared to a study on the Italian general population (Savoia *et al.,* 2006); the resulting value was 0.71, comparable to the 0.73 found in the reference study.

To determine if the data distribution was normal, the results for bruxism, EQ-index and EQ-VAS were analysed with the Shapiro-Wilk W test for non-normality: the result showed non-normality for all ($p<0.0001$ for EQ-index and bruxism; $p=0.0005$ for EQ-VAS).

On this basis, data analyses were performed with non-parametric methods, using the Kruskal-Wallis test to compare the samples, a non-parametric alternative to the one way ANOVA, and Kendall's rank for correlation, that provides a distribution-free test of independence and a measure of the strength of dependence between two variables.

All the statistical analyses were performed with StatsDirect software (version 2,7,2).

A total of 280 individuals were examined: the mean age was 39.7 years (SD 11.3, range 19-69), 147 were married (52.7%), only 19.1% had attained a high school or college degree education level, and about one third (33.2%) was in prison for the first time.

The prevalence of bruxism (score 3 to 5) was 29.2%.

The prevalence of problems (score 2 or 3) in the five EQ-5D dimensions was the following: for Mobility (MO): 7.5%, for Self Care (SC): 6.1%, for Usual Activities (UA): 17.9%, for Pain/discomfort (PD): 43.9%, for Anxiety/depression (AD): 54.6%.

The mean EQ-index was 1.30 (SD: 0.31; CL95%: 1.26-1.33), and the mean EQ-VAS was 62.0 (SD: 19.5; CL95%: 59.7-64.4).

We have compared subjects with and without quality of life problems, splitting the sample into two groups: one including subjects who reported to have problems in one or more of the five EQ-index dimensions, and the other including subjects without problems. The mean scores for EQ-VAS and bruxism in these two groups were compared, and the results are presented in Table 1.

Subjects with quality of life problems scored, as expected, a lower level of overall quality of life, expressed by EQ-VAS, and they also showed a higher presence of bruxism, both with a statistically significant difference at the Kruskal-Wallis test.

Table 2 depicts the distribution of demographic and custodial features of the population in the study, together with the mean values of bruxism, EQ-index and EQ-VAS for each subgroup.

The bruxism score did not show any significant difference between the subgroups in Table 2. The EQ-index showed a significant higher value, thus indicating worse condition, for subjects aged over 50 ($p<0.0001$) as well as for married subjects ($p=0.0402$). EQ-VAS showed a significant lower value, thus indicating a worse condition, for subjects aged over 50 ($p=0.0019$).

Table 1. Difference for EQ-5D scores between subject with and without problems

Item	*No problems in EQ dimensions (all dimensions = 1)*	*Reporting problems (at least one dimension >1)*	*p (Kruskal-Wallis)*
Bruxism (N=280)	1.34 sd 0.94 CI95% 1.14-1.55	1.82 sd 1.23 CI95% 1.65-1.99	**0.002**
EQ-VAS (N=266)	68.7 sd 18.1 CI95% 64.6-72.7	59.1 sd 19.4 CI95% 56.3-62.0	**<0.001**

Table 2. Characteristics and mean values for bruxism, EQ-index and EQ-VAS

Characteristic	*n*	*%*	*Bruxism*	*EQ-VAS*	*EQ-index*
Age group, years (n=280)					
18-25	28	10.0	1.28	67.6	1.09
26-30	40	14.3	1.97	63.7	1.25
31-35	45	16.1	1.66	62.6	1.23
36-40	41	14.6	1.85	66.1	1.31
41-45	48	17.1	1.35	65.6	1.32
46-50	28	10.0	1.82	56.6	1.35
>50	50	17.9	1.76	53.5	1.45
Marital status (n=280)					
Single	96	34.4	1.61	64.3	1.23
Married	147	52.7	1.70	61.4	1.34
Other	37	12.9	1.77	58.8	1.29
Smoke (n=280)					
Smoker	210	75.0	1.67	61.6	1.31
Ex-smoker	39	11.1	1.77	59.1	1.27
Non smoker	31	13.9	1.61	66.5	1.26
Educational level (n=280)					
Primary school or less	64	22.9	1.68	58.7	1.35
Secondary school	160	57.2	1.68	62.4	1.28
High school/University	56	19.1	1.64	64.5	1.27
Employment status (n=280)					
Unemployed	130	46.4	1.70	62.7	1.27
Worker	141	50.3	1.64	62.5	1.29
Retired	9	3.3	1.88	43.1	1.82
Number of imprisonments (n=280)					
1	93	33.2	1.63	64.8	1.25
2-3	117	41.7	1.58	58.9	1.29
4 or more	90	32.1	1.90	63.5	1.37
Age at first imprisonment (n=280)					
Under 18	51	18.2	1.90	61.7	1.35
19-25	93	33.2	1.55	63.1	1.26
26-30	28	10.0	1.92	61.6	1.27
31-40	42	15.0	1.73	63.4	1.31
41-50	17	6.0	1.52	59.4	1.32
51 or more	49	17.5	1.69	54.7	1.38
Reason for current imprisonment (n=271)					
Crime against the person	128	45.8	1.68	62.1	1.26
Crime against property	74	26.5	1.58	65.1	1.34
Crime against both	69	24.7	1.78	57.6	1.30

The correlation between bruxism and EQ-5D was measured for the whole group of 280 subjects and for each subgroup; for the whole group of subjects, Kendall's tau b for bruxism vs. EQ-index was 0.2251, showing concordance and dependence between the two variables ($p<0.001$ for either); for bruxism vs. EQ-VAS its value was -0.1943, showing discordance and dependence ($P<0.001$ for either).

A strong concordance and dependence between bruxism and EQ-5D, e.g. P values lower than 0.01, was found in a number of subgroups. The correlation was also measured for all the subgroups of Table 2, with the results being depicted in Table 3, where two opposite patterns of correlation are present, that is concordance for bruxism vs. EQ-index, and discordance for bruxism vs. EQ-VAS.

Discussion

The reliability of our research instrument was adequate: Cronbach's alpha for EQ-5D was higher than 0.70 for all the scales, and this is comparable to results reported in Italian population, as we obtained 0.71 against 0.73 (Savoia *et al.,* 2006), even if the population of our study was smaller (280 vs. 1,622 subjects).

These values are also consistent with data on reliability obtained when using other HRQoL instruments in prison settings, with the value of 0.72 obtained for the Nottingham Health Profile that was administered in French prisons (Blanc *et al.,* 2001).

Bruxism is present in about one third of our population, showing a prevalence of 29.2%, significantly higher than the general population; even if this is a very com-

Table 3. Correlation between Bruxism and Quality of Life indexes

Characteristic	*Bruxism vs. EQ-index*			*Bruxism vs. EQ-VAS*		
	Tau b	*p for conc*	*p for dep*	*Tau b*	*p for disc*	*p for dep*
Age group, years (n=280)						
18-25	0.216	ns	ns	-0.064	ns	ns
26-30	0.512	**<0.001**	**<0.001**	-0.223	**0.049**	ns
31-35	0.111	ns	ns	-0.285	**0.013**	**0.028**
36-40	0.248	**0.031**	ns	-0.232	**0.038**	ns
41-45	0.243	**0.030**	ns	-0.216	**0.041**	ns
46-50	-0.070	ns	ns	-0.194	ns	ns
>50	0.152	ns	ns	-0.163	ns	ns
Marital status (n=280)						
Single	0.270	**<0.001**	**0.002**	-0.206	**0.008**	**0.016**
Married	0.223	**0.001**	**0.001**	-0.209	**0.001**	**0.002**
Other	0.167	ns	ns	-0.017	ns	ns
Smoke (n=280)						
Smoker	0.234	**<0.001**	**<0.001**	-0.156	**0.003**	**0.006**
Ex-smoker	0.053	ns	ns	-0.196	ns	ns
Non smoker	0.338	**0.008**	**0.016**	-0.414	**0.001**	**0.002**
Educational level (n=280)						
Primary school or less	0.108	ns	ns	-0.055	ns	ns
Secondary school	0.220	**<0.001**	**0.001**	-0.211	**<0.001**	**0.001**
High school/University	0.386	**<0.001**	**0.001**	-0.315	**<0.001**	**0.005**
Employment status (n=280)						
Unemployed	0.169	**0.013**	**0.025**	-0.129	**0.039**	ns
Worker	0.301	**<0.001**	**<0.001**	-0.256	**<0.001**	**<0.001**
Retired	0.023	ns	ns	-0.145	ns	ns
Number of imprisonments (n=280)						
1	0.258	**0.002**	**0.004**	-0.265	**0.001**	**0.002**
2-3	0.318	**<0.001**	**<0.001**	-0.214	**0.003**	**0.006**
4 or more	0.032	ns	ns	-0142	ns	ns
Age at first imprisonment (n=280)						
Under 18	0.211	**0.038**	ns	-0.241	**0.017**	**0.034**
19-25	0.210	**0.004**	**0.008**	-0.162	**0.017**	**0.034**
26-30	0.192	ns	ns	-0.150	ns	ns
31-40	0.366	**0.003**	**0.007**	-0.284	**0.019**	**0.039**
41-50	0.229	ns	ns	-0.380	**0.033**	ns
51 or more	0.098	ns	ns	-0.172	ns	ns
Reason for current imprisonment (n=271)						
Crime against the person	0.270	**<0.001**	**<0.001**	-0.278	**<0.001**	**<0.001**
Crime against property	0.208	**0.020**	**0.039**	-0.105	ns	ns
Crime against both	0.155	ns	ns	-0.130	ns	ns

Legend: Tau b = Kendall's tau b value; conc = concordance; disc = discordance; dep = dependence. For p>0.05 values are recorded as "ns" (non-significant).

mon condition, as the majority of the population grind or clench the teeth to some degree, literature shows that in general population there is a reported prevalence of about 8-10% (Lavigne *et al.,* 2008; Lobbezoo *et al.,* 2006), thus the health-related quality of life of inmates appears to be worse than general population.

With respect to the subgroups matched by age and gender, the EQ-index shows a mean of 1.3 for our subjects against 0.8 for the reference group, and the EQ-VAS scale shows a score of 62 against 80. The percentage of imprisoned subjects reporting a moderate or severe problem at EQ-5D dimensions in respect of the general population (reference values in brackets) was: for Mobility (MO): 7.5 (9.6), for Self Care (SC): 6.1 (4.3), for Usual Activities (UA): 17.9 (10.1), for Pain/discomfort (PD): 43.9 (40.8), for Anxiety/depression (AD): 54.6 (31.9). Our study shows a worse HRQoL for inmates, with a higher presence of anxiety/depression.

Bruxism and HRQoL are closely correlated, as shown by the strong ($p<0.001$) concordance and dependence between bruxism and EQ-index, and strong ($p<0.001$) discordance and dependence of bruxism with EQ-VAS.

Bruxism and HRQoL are correlated in specific subgroups, too. Considering only the strongest concordance/dependence or discordance/dependence scores (both present with $p<0.01$), we can draw the following observations. For age, only the 26-30 subgroup shows strong correlation, and only for EQ-index: this subgroup also showed the highest value for bruxism (1.97) of all subgroups, probably because in this age group the

stress from imprisonment shows the highest effect._For marital status, both single and married subgroups show significant correlation, either for the EQ-index as well as for EQ-VAS, while for smoking, only ex-smokers do not show a significant correlation. For education, higher levels (secondary or more) show correlation, both for EQ-index and EQ-VAS, while for employment status a clear correlation is shown by workers only. In both cases, a stable marital and/or work situation makes higher the effect of imprisonment stress.

For the prison related subgroups, a strong correlation is shown by people with lower number of imprisonments, both for the EQ-index and EQ-VAS, while for age at first imprisonment two subgroups, 19-25 and 31-40 showed a strong correlation for EQ-index but not for EQ-VAS, and this could be related to the "prison stress" habit of people with a certain number of imprisonments in the past. Finally, prisoners with a history of crime against the person (e.g. assault or homicide) correlated strongly with both EQ-index and VAS, while those for crimes against property (e.g. theft or fraud) did not, and this could be consistent with the higher stress experienced by the former criminals, who usually have the worst reputation amongst their peers.

Results for prevalence of bruxism in literature show wide variations, with clinical studies showing values between 6.5 and 88% (Bader *et al.,* 2000). In fact, this widely variable prevalence appears in a number of papers: in a large series of 13,057 subjects in Germany, Italy and UK, the overall prevalence was 8.2% (Ohayon *et al.,* 2001), in a group of 483 subjects from Segrate area (Milan, Italy) it was 31.4% (Ciancaglini *et al.,* 2001), in 1,014 subjects in the island of Sardinia (Italy) it was 27.2% (Melis *et al.,* 2003), in 50 subjects in Tel Aviv (Israel) was 20% (Winocur *et al.,* 2007), in 2,505 subjects in the Manchester area (UK) was 18.6% (Aggarwal *et al.,* 2008). Our prevalence of 29.2% for bruxism in prison inmates appears definitely higher than general population. It is consistent with the qualitative finding that "these individuals bruxed to a greater degree than patients one normally sees" (Cotman, 1970), and with the quantitative result of a recent study comparable to ours (Singh *et al.,* 2012) with a large sample of 1,011 inmates (826 males), that showed a prevalence of 22.6%.

The prevalence of bruxism in inmates appears to be related to presence of stress.

In a study on the association between psychosocial job stress and sleep bruxism, performed on 1,944 male subjects, 30.9% of them reported bruxism (a value very near to our 29.7%), and, in another study, the risk of bruxism was associated with low social support and high depressive symptoms (Nakata *et al.,* 2008). Furthermore, in a study on 854 children, a child with a psychological disorder had a 3.6 times greater likelihood of bruxism (Cheifetz *et al.,* 2005).

In military aircraft pilots (Lurie *et al.,* 2007), bruxism etiology appears to be connected to stress together with morphological, pathophysiological and psychosocial factors, but the research focused on the "non-stress" factors is about 20% of all published papers (Lobbezoo *et al.,* 2006), thus suggesting that role of stress is more important. Interaction between stress and depression plays a significant role among psychosocial factors, as stated by a significantly higher depression score of bruxers against non-bruxers, found in a series of 105 subjects studied to assess the association between mood disorders and bruxism (Manfredini *et al.,* 2005). The psychosomatic disorders reflect conflicts and difficulties in organising the very different personalities. They can be (Interian *et al.,* 2006) rather trivial: asthenia without particular location, episodic headaches, abdominal pain, or may assume a more important effort that warrants neurosis, psychosis, depression.

In prison environment, these disturbances may become an acute paroxysmal (Skogstad *et al.,* 2006). Most of the time, the concerns are related to heart, or major physiological functions. Hypochondriac concerns of inmates often have a spectacular aspect, and sometimes present themselves as a delirium regarding not only the mind but also the body, more and more prone to disease and accidents, as a state of high anxiety, stress, depression reduces the state of self-conservation.

Bruxism belongs to those psychosomatic disorders (Aggarwal *et al.,* 2008; Bader *et al.,* 2000; Brennan *et al.,* 2008; Ohayon *et al.,* 2001), together with anxiety and negative emotions such as guilt or shame. Maybe the inmate is punishing himself unconsciously, doing this by hitting the teeth and mouth, devoted to nutrition and communication.

Destroying the teeth no longer nourishes the body that was wrong, that has violated justice, and the mouth is no longer considered usable, because the isolation that prison give to a person devalues any communicative attempts (Andersen *et al.,* 2001; Doyle 1998; Harris *et al.,* 2007).

The teeth, moreover, that symbolically represent a part of the body that expresses aggression, may be eliminated to get rid of something toxic, evil, which has exalted the so-called death instinct, the Freudian "Thanatos". It seems a rather pragmatic approach, and it is, but it is also an ejection of a psychic part of emotion when there is a mournful event, a real or ghostly loss, and, in the case of the inmate, mourning concerns the loss of one own freedom.

To our knowledge this is the first investigation to address the prevalence of bruxism and its relationship with HRQoL in an inmate group, and it may contribute toward studying epidemiological patterns where the gathering of information is lacking.

Despite the clear associations that were found between the variables that we studied, caution should be exercised when drawing conclusions about causal mechanisms, because our study has a number of limitations.

Our research is only a cross-sectional study, and there is a danger that bias was introduced by our sample, which was small (fewer than 300 subjects), and included only a male population; moreover, we have evaluated bruxism with a single item scale, and have experienced some difficulty in administrating a questionnaire in such a complex setting such a prison. However, we can conclude that:

1. the prevalence of bruxism is higher and Health-related Quality of Life is worse in the prison population than in the general population;
2. presence of bruxism is correlated with lower HRQoL levels;
3. the correlation is stronger for subjects serving a first prison experience and for higher education levels.

We believe that the following topics would constitute a useful research agenda for the future: to study larger groups, possibly in a nationwide context, to make a gender and social/cultural comparison, to use a more complete instrument to study bruxism and/or a clinical approach to evaluate it, to consider the relationship between bruxism and stress experience, to consider the relationship between bruxism and length of stay in prison, as well as investigate more widely the psychosomatic aspects of the way in which the quality of life of inmates is impaired.

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Original Italian text

Questionario di studio sulla qualità della vita correlata alla salute in soggetti sottoposti a regime di reclusione

Il presente questionario fa parte di una ricerca promossa dalla Università di Salerno per indagare alcuni aspetti della qualità della vita correlata alla salute in persone sottoposte a regime di restrizione della libertà in ambiente carcerario.
Si prega di rispondere a tutte le domande. Grazie

1. Età (anni) _____

2. Sesso M F

3. Quante volte è stato/stata in reclusione? _____

4. A che età è stato/stata per la prima volta in reclusione? _____

5. Per quale tipo di reato si trova attualmente in reclusione?
Contro la persona contro il patrimonio entrambe

6. Stato civile
Sposato/a o convivente divorziato/a o separato/a single

7. Studi svolti (indicare il massimo livello di scuola frequentata)
Scuola elementare scuola media liceo o istituto simile università

8. Che lavoro svolgeva prima di entrare in reclusione?
Studente Disoccupato occupato pensionato

9. Rispetto al fumare sigarette o simili, Lei è:
un fumatore un ex-fumatore un non-fumatore

10. Capacità di Movimento
Non ho difficoltà nel camminare
Ho qualche difficoltà nel camminare
Sono costretto/a a letto

11. Cura della Persona
Non ho difficoltà nel prendermi cura di me stesso
Ho qualche difficoltà nel lavarmi o vestirmi
Non sono in grado di lavarmi o vestirmi

12. Attività Abituali (per es. lavoro, studio, lavori domestici, attività familiari o di svago)
Non ho difficoltà nello svolgimento delle attività abituali
Ho qualche difficoltà nello svolgimento delle attività abituali
Non sono in grado di svolgere le mie attività abituali

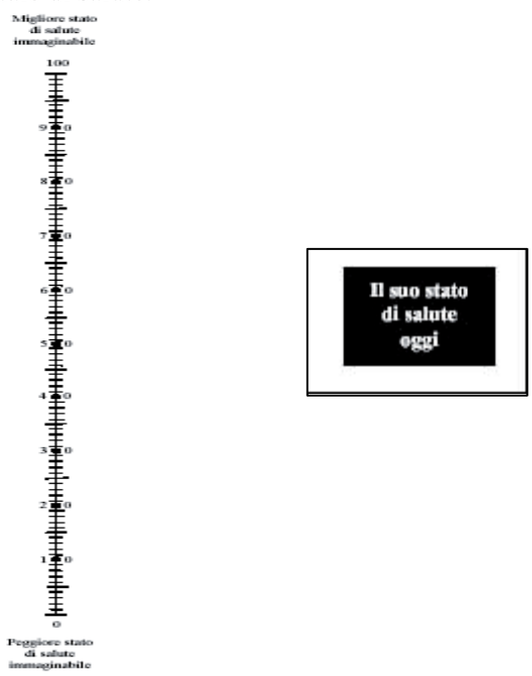
13. Dolore o Fastidio
Non provo alcun dolore o fastidio
Provo dolore o fastidio moderati
Provo estremo dolore o fastidio

14. Ansia o Depressione
Non sono ansioso o depresso
Sono moderatamente ansioso o depresso
Sono estremamente ansioso o depresso

15. Accusa qualcuno dei seguenti disturbi? (metta una crocetta nella casella corrispondente)

disturbo	sempre	spesso	qualche volta	Raraente	mai
a. malessere generale					
b. rabbia					
c. perdita dell'appetito					
d. palpitazioni o "batticuore"					
e. bruciori di stomaco					
f. serrare i denti da sveglio o nel sonno					
g. non sopportare gli spazi chiusi					
h. incapacità di concentrarsi					
i. abbassamento della vista					
j. macchie o strisce davanti agli occhi					
k. insonnia					
l. mal di testa					
m. mal di schiena					
n. diarrea					
o. stitichezza					

16. Scala visuale della salute
Per aiutarla ad esprimere il suo stato di salute attuale, abbiamo disegnato una scala graduata (simile ad un termometro) sulla quale il migliore stato di salute immaginabile è contrassegnato dal numero 100 ed il peggiore dallo 0.
Vorremmo che indicasse su questa scala quale è, secondo lei, il livello del suo stato di salute oggi, tracciando una linea dal riquadro sottostante fino al punto che corrisponde al suo stato attuale di salute.



17. Se presenta disturbi della salute che non sono stati prima elencati Li descriva qui sotto.

English text

Questionnaire for study of the Health Related Quality of Life in subjects undergoing imprisonment

This questionnaire is part of a research project of the University of Salerno to investigate some aspects of the Health Related Quality of Life in people undergoing a restriction of personal freedom in a prison environment
Please answer all questions. Thank you

1. Age (years) _____

2. Gender M F

3. How many times have you been in prison? _____

4. How old you were when you have you been in prison for the first time? _____

5. Which kind of offense took you to the current imprisonment?
Crime against person Crime against property Both

6. Marital status
Married or cohabitant divorced single

7. School level (please mark the highest level you have attended)
Primary school Middle school High school University

8. Which was your activity before getting in prison?
Student Unemployed Worker Retired

9. With respect to cigarette smoking you are a:
Smoker Former smoker Non smoker

10. Mobility
I have no problems in walking about
I have some problems in walking about
I am confined to bed

11. Self-care
I have no problems with self-care
I have some problems washing or dressing myself
I am unable to wash or dress myself

12. Usual Activities (e.g. work, study, housework, family or leisure activities)
I have no problems with performing my usual activities
I have some problems with performing my usual activities
I am unable to perform my usual activities

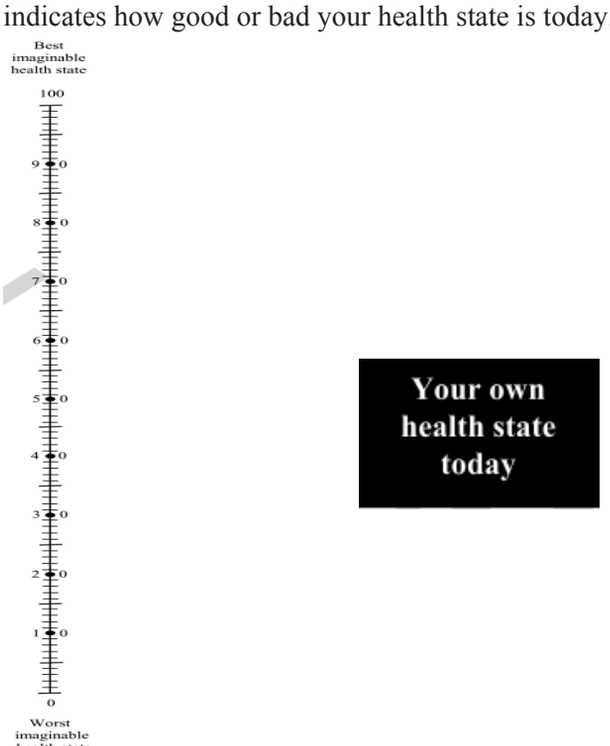
13. Pain/Discomfort
I have no pain or discomfort
I have moderate pain or discomfort
I have extreme pain or discomfort

14. Anxiety/Depression
I am not anxious or depressed
I am moderately anxious or depressed
I am extremely anxious or depressed

15. Do you have one or more of the following health disorders? (please tick the proper box)

Disorder	Always	Often	Sometimes	Rarely	Never
a. general malaise					
b. anger					
c. loss of appetite					
d. feeling your heart pound or race					
e. stomach pain					
f. teeth grinding awake or sleeping					
g. not bear to say indoors					
h. unable to concentrate					
i. lowering of vision					
j. spots or strips in your vision					
k. insomnia					
l. headache					
m. back pain					
n. diarrhea					
o. constipation					

16. Visual assessment scale
To help people say how good or bad a health state is, we have drawn a scale (rather like a thermometer) on which the best state you can imagine is marked 100 and the worst state you can imagine is marked 0.
We would like you to indicate on this scale how good or bad your own health is today, in your opinion. Please do this by drawing a line from the box below to whichever point on the scale indicates how good or bad your health state is today.



17. If you have health disorders not listed before, please describe them here.