

# Coding Environmental Factors for the component Body

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## functions and Body structures: first results from a field trial in Italy.

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**Abstract** This study provides a first exploratory analysis of a new EF coding approach, which allows to report EF also in relation to BF and BS categories in 213 subjects enrolled in the Friuli Venezia Giulia Region (Italy). The aim was to verify if this new coding opportunity is useful to describe “cared/treated” body versus “ill/impaired” body or “uncared/undercared/undertreated” body.

### Introduction

According to the ICF, coding of Environmental Factors (EF) may be done following three coding conventions [1]. In this contribution the results of a novel approach is presented, i.e. coding EF for every item of Body Functions (BF) and Body Structures (BS). Being the first ICF qualifier a measure of the presence and extent (magnitude) of impairments, reporting EF in relation to BF and BS items allows to evaluate the interaction between a person with a health condition and the environment. The aim was to verify if this new coding opportunity is useful to describe “cared/treated” body versus “ill/impaired” body or “uncared/undercared/undertreated” body.

### Methods & Materials

In 2011, a field trial was carried out in Friuli Venezia Giulia Region using a new ICF-based functioning/disability assessment protocol. The protocol included a paper form, a web application, an Informed Consent form and a workflow [2]. The assessment protocol organized the collection of information useful to: analyse the interaction between the person and the environment in order to assess functioning and disability; evaluate the efficacy of the care plans using ICF-based data; make the tailored care planning more efficacious, thus overcoming the idea that the care plan is based on diagnosis. The protocol adopted the ICF and its version for children and youth (ICF-CY) both as a model of functioning/disability and as a descriptive language. The protocol was divided into two parts: the first part collected personal, socio-demographic, and treatment information; the second part organized ICF-based evaluation on all the three components. Environmental factors were coded in every BS, BF and Activity and Participation (AP) item [3]. After a preliminary description of the 213 sampled patients (see Table 1) and of measured impairments, the interest was devoted to the analysis of the most coded EF and their role in the impairment presence/extent.

Table 1 – Sociodemographic characteristics of the sample by group of patients

Groups of patients	Sample	% Female	% Occupied	% Living alone	% Married
GROUP 1 younger than 18 years	53	35,85	0	0	0
GROUP 2 in charge of MHS	51	43,13	11,76	41,18	9,8
GROUP 3 other patients	109	44,03	0	4,59	11
<b>Total</b>	<b>213</b>	<b>78,98</b>	<b>11,76</b>	<b>45,77</b>	<b>20,8</b>

In the analysis also 3 subsamples were considered separately: patients less than 18 years old (Group 1), patients in charge to mental health services (MHS) (Group 2) and the others (Group 3) (Table 1).

### Results

Most of the patients were certified under Italian invalidity Laws, and in the everyday life activities they generally declared to need some help (patients requiring no help to dress up, to move, and to eat were 7%, 5.6%, and 9.8%, respectively).

The coded BF categories were 354 in all the sample, 191 in group 1, and 156 in group 2. The most frequently coded BF category was b122 in the whole sample and in group 3, b140 in group 1, and b130 in group 2. The EF identified in relation to BF, BS, and A&P categories were 102. Some of the most frequently coded EF are reported in Table 2. While selecting the EF with counts over the 3<sup>rd</sup> quartile, 15, 6 and 25 EF were observed in relation to BF, BS and A&P categories, respectively.

Table 2 – Counts of the most coded EF

EF Chapters	BF Categories Counts	BS Categories Counts	A&P Categories Counts	Total
e310 immediate family	1054	27	3431	<b>4512</b>
e355 health care professionals	744	39	1477	<b>2260</b>
e110 products or substances for personal consumption	928	34	1083	<b>2045</b>
e575 general social support services, systems and policies	498	7	1609	<b>2107</b>
e580 health care services, systems and policies	479	66	1035	<b>1580</b>

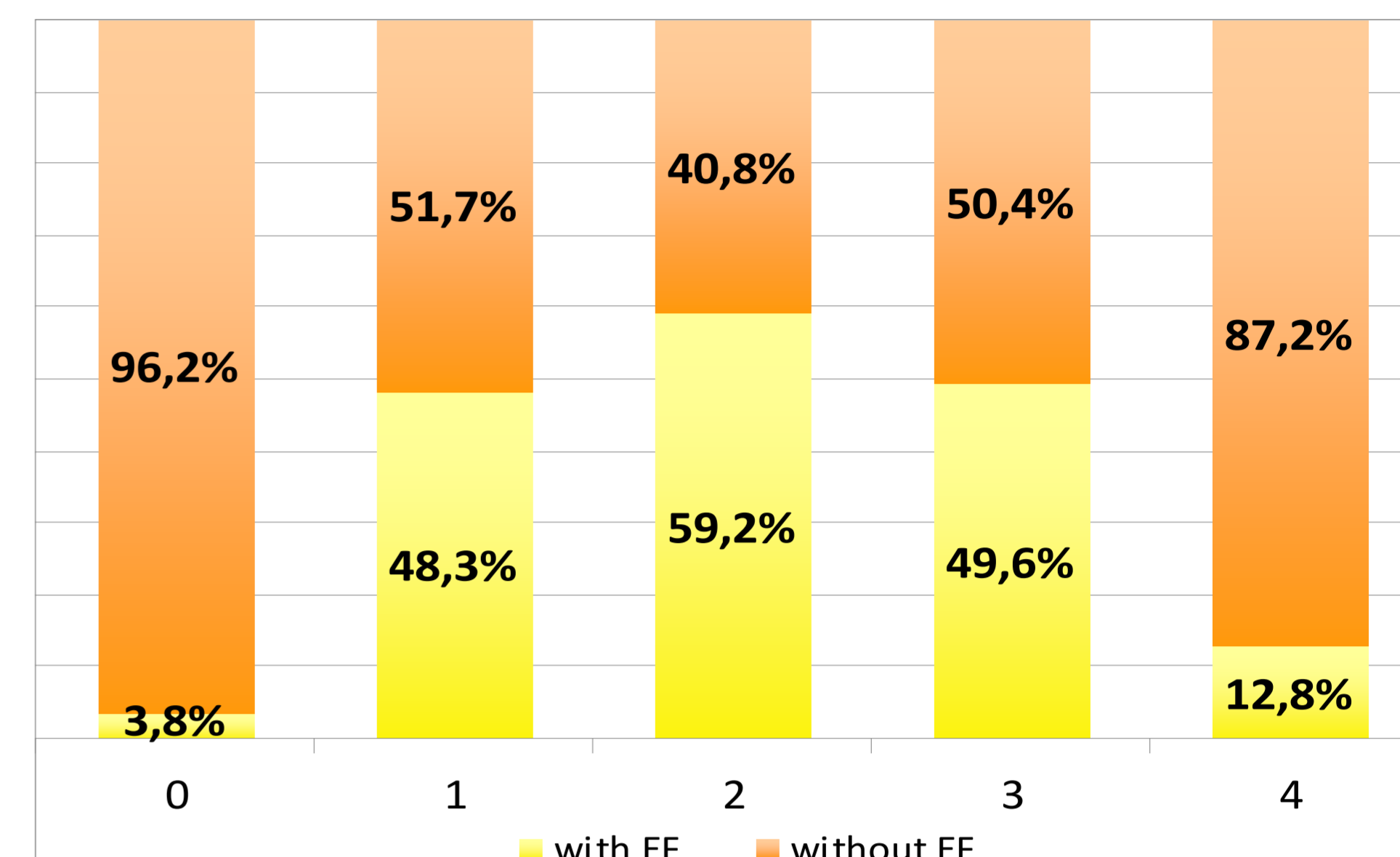
In Table 3 the EF counts as facilitators or barriers are shown.

Table 3 – EF Counts as facilitators or barriers, by EF chapter

EF chapters	Counts as facilitators	Counts as barriers	Total
e1	1327	105	<b>1432</b>
e2	5	7	<b>12</b>
e3	2694	152	<b>2846</b>
e4	56	53	<b>109</b>
e5	1172	9	<b>1181</b>
<b>Total</b>	<b>5254</b>	<b>326</b>	<b>5580</b>

The analysis of the role of the EF in the extent of the BF impairments was also deepened by comparing the distribution of the qualifier values (0, 1, 2, 3, 4) and the presence/absence of coded EF (Figure 1).

Figure 1 – Distribution of BF categories by qualifier value and EF presence



The same trend in the EF coding across qualifiers values was reproduced in all BF coded categories. The EF categories of e1 and e3 chapters were cited as barriers only in 7% and 5% of cases in the BF coded items, and in 2% and 3% of cases in the BS coded items. The e2 categories were coded as barriers in 58% of cases, while the e4 categories were coded as barriers in 49% and 100% of cases in BF and BS coded items, respectively. In Table 4, the percentage of times the EF chapters are coded as barriers in the BF categories is shown by group.

Table 4 - % of EF counts as barriers, by group of patients

EF chapters related to BF categories	% counts as barriers in group 1	% counts as barriers in group 2	% counts as barriers in group 3
e1	2	11	6
e2	50	100	0
e3	52	10	3
e4	45	55	33
e5	0	2	2

### Conclusions

This study provides a first exploratory analysis of a new EF coding approach, which allows to report EF also in relation to BF and BS categories. This novelty allows a deep analysis of the role of environmental factors in the BF and BS items describing the individual’s health condition. The presence of some EF codes was heterogeneous across the qualifiers values describing the severity of impairment, with less EF registered where no BF/BS impairment (qualifier 0) was registered. The e1, e3, and e5 categories were generally facilitators in relation to BF and BS coded items, while e4 category more frequently represented a barrier.

The BF and BF first qualifier construct (impairment) might be clarified, taking into account the role of EF, in order to describe “cared/treated” body or “uncared/undercared/untreated” body.

### References

1. WHO, ICF International Classification of Functioning, Disability and Health. Geneva, 2001
2. Frattura et al, Health information systems learn to speak ICF: Toward electronic ICF-based individual records, Who-FIC Network Annual Meeting, Cape Town 2011
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