

1 **Social influences on adolescents' dietary behavior in Catalonia, Spain: A qualitative multiple-**
2 **cases study from the perspective of social capital**

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7 **Abstract**

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Adolescence has been referred to as the last best chance to prevent adult non-communicable diseases. Gaining further evidence on the psychosocial determinants of health behaviors, particularly the impact of peers, social networks and media on diet, is necessary to develop appropriate preventive strategies. Based on a multiple-cases study, our aim was to discuss the social influences on adolescents' dietary behavior from a social capital perspective. Participants were reached through four high-schools in different Catalan rural-urban and socioeconomic contexts. Our results confirm the different layout of social capital in the community, school, peers and family. In our sample, family and peers are the most influent sources of social capital in relation to dietary behaviors, inducing both protective and damaging effects.

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16 The WHO and World Obesity/Policy & Prevention Taskforce have declared obesity as *the* 21th
17 century epidemic because of its high prevalence, its impact on morbidity and quality of life, and its
18 associated economic burden (WHO, 2000). Adolescence is a very unique and critical period of a
19 person's development, in which important physical, social and psychological changes that affect
20 health take place (Pressley & McCormick, 2007). Some of these changes are heavily related to the
21 pursuit of an independent identity and acceptancy by the peers, and may also have a relevant
22 influence on eating behaviors. This paper discusses what social capital can provide to the study of
23 social influences on adolescents' dietary behavior.

24 Adolescence has been referred to as the "last best chance" to prevent adult non-communicable
25 diseases (NCDs) (Patton et al., 2012a). The reasons are, the fact that the earlier some risk factors
26 appear the greater the impact that they are going to have on future health and, also, the
27 perpetuation that the habits acquired during adolescence will have on the future adult behavior
28 and the difficulty to change strongly established habits and revert NCDs (Blane, Netuveli, & Stone,
29 2007; G. C. Patton et al., 2012; Sawyer et al., 2012). For example, it is well known that 60% of the
30 children who are overweight before puberty will be overweight in early adulthood (WHO, 2015a),
31 or that the harmful use alcohol during adolescence is the risk factor with the largest impact on
32 disability-adjusted life-years (DALYs), accounting for 7% of DALYs worldwide (Popkin, Adair, & Ng,
33 2012).

34 Overall, excess weight and its associated comorbidity is one of the most important threads to
35 adolescent and future adults' health. WHO estimates are that in 2013, 42 million children were
36 affected by overweight or obesity in 2013 and that, if current trends continue, 70 million children
37 will be overweight or obese by 2025 (WHO, 2015b). Along with the target of 0 increase in
38 obesity/diabetes prevalence by 2025 set by the 2013 World Health, the 2015 interim report of the
39 Commission on Ending Childhood Obesity establishes a number of strategic recommendations for
40 governments, the private sector, and civil society and NGOs to work towards achieving this goal
41 (WHO, 2015c).

42 The same WHO interim report also identifies research gaps that need to be unraveled to develop
43 stronger evidence-based answers, one of them being the need for "further evidence on the
44 psychosocial determinants of overweight and obesity, in particular the gendered differences,

45 health knowledge among caregivers and children, impact of peers, social networks and media on
46 diet, physical activity behaviors (WHO, 2015c, p. 24).

47 Social capital provides a proper framework to study the influence of the social environment in
48 health behaviors, because it offers an integrated conception of different aspects of social life
49 which, analyzed complementarily, provide a multifaceted understanding of social phenomena
50 (Kawachi, Subramanian, & Kim, 2010). Shortly, social capital can be understood as the resources
51 that can be accessed thanks to the membership in groups or networks (Porta, 2014). A
52 considerable body of research has contributed to this field, establishing a significant relationship
53 between social capital in different contexts and levels (country, state, neighbourhood, workplace,
54 family, etc.) and various health outcomes (Binbay et al., 2012; Choi et al., 2014; Gilbert, Quinn,
55 Goodman, Butler, & Wallace, 2013; Hu et al., 2014; Song & Lin, 2009), some of which seem to be
56 health-promoting, while others have a damaging effect on health (Carpiano & Kimbro, 2012;
57 Portes, 1998; Portes & Landolt, 2002).

58 Most evidence on social capital and health refers to adult population, while youth have not
59 received as much attention. Authors like Morrow (1999) or White (2008) have emphasized the
60 need to give children and teenagers an active voice in the study of social capital, who very often
61 are assumed to have a passive role as a mere receptors of social capital, despite the well-known
62 importance of social relationships at these ages (Antheunis, Schouten, & Kraemer, 2016; Jenkins &
63 Horner, 2005; Patrick & Nicklas, 2005). Furthermore, if social environment is to be considered
64 relevant for adolescent health, a multi-site approach needs to be considered (Whitley, 2010). In
65 this context, qualitative studies have been proposed as a way to acquire a more “full and complete
66 empirical exploration of inchoate concepts and incipient ideas” (Whitley, 2010, p. 95) and its
67 pertinence in the study of social capital has also been purported by different scholars and
68 institutions (Dudwick, Kuehnast, Jones, Nyhan Jones, & Woolcock, 2006; Li, 2015; Moore &
69 Kawachi, 2017; Morrow, 1999). The goal of this study is to better understand the influence of
70 social capital on adolescents’ dietary behaviors as a social phenomenon

71 ***Social capital: a conceptual framework for qualitative research***

72 A single definition of social capital upon which all scholars agree is not available to date. Instead,
73 multiple definitions, distinct dimensions and subtypes of social have been used to investigate and
74 theorize about its relationship to health (Kawachi & Berkman, 2014; Moore & Kawachi, 2017).

75 Public health applications of the notion derive from the conceptualizations of Pierre Bourdieu,
76 James Coleman and Robert Putnam. While *the presence of more or less structuralized networks*
77 *between people or groups that facilitate certain actions for different actors within the structures* is
78 a core feature of their approaches, noteworthy divergences stem from them.

79 Bourdieu explains social capital in terms of social networks and connections. In his model,
80 individuals' network connections accrue shared norms and values, exchanges and obligations that
81 can potentially provide access to different resources such as emotional, informational or
82 instrumental support (Bourdieu, 1986). To Coleman (1990), social capital is a set of socio-structural
83 resources "that have two characteristics in common: they all consist of some aspect of the social
84 structure. And they facilitate actions of individuals who are within the structure". Social capital is a
85 resource between families and communities, introducing a socio-structural approach. Putnam
86 extends the scope of the collectivistic approach by including in the definition elements such as
87 sense of belonging, community cooperation, civic engagement and norms of trust and reciprocity
88 (Putnam, 1993). The focus here changes from the individual to the community in which it is
89 embedded.

90 A further relevant differentiation between Bourdieu's and Coleman's/Putnam's conceptualization
91 is the social framework within which relationships are conceived. While Coleman and Putnam view
92 on social capital depart from a somewhat static view of societies, Bourdieu's approach to social
93 capital is part of a more elaborated theory of conflict and power distribution in society and, as
94 such, entails that some of the potentially available resources may not be *actually* accessible.
95 We agree with authors like Carpiano (2006) or Haines, Beggs and Hurlbert (2011) in
96 acknowledging that this is a relevant aspect, absent in the study of social capital in Public Health -
97 which has mainly drawn upon Putnam's work, overseeing aspects such as the availability of
98 resources while focusing almost exclusively on trust or reciprocity.

99 In this paper, social capital is referred to as the resources that individuals can access thanks to
100 their membership in a network, which includes both the resources accessible through direct,
101 individual connections as well as the ones that are available to all the members of a given network
102 thanks to the relationships within the network itself (Porta, 2014).

103 With the purpose of better operationalizing the complexity of social capital, several subconstructs
104 have been differentiated (Islam, Merlo, Kawachi, Lindström, & Gerdtham, 2006; Moore & Kawachi,
105 2017). Discriminating between *bonding*, *bridging* and *linking* social capital allows to classify the
106 links between the members of the group in terms of homogeneity (Szreter & Woolcock, 2004).
107 Bonding social capital refers to relations between members of a network that perceive themselves

108 as similar in terms of social identity. Bridging social capital comprises relations between people
109 who know that they are not alike in some socio-demographic (or social identity) sense (age, ethnic
110 group, class, etc.). Linking social capital refers to hierarchical or unequal relations as a result of
111 differences in power, resources or status.

112 An additional classification refers to *structural* versus *cognitive* social capital (Harpham, Grant, &
113 Thomas, 2002). The structural component describes properties of the networks, relationships and
114 institutions that bring people and groups together; while the cognitive dimension is derived from
115 mental processes and reflects people's perceptions of the level of trust, confidence, and shared
116 values, norms and reciprocity.

117 The scale at which social capital is conceptualized constitutes an additional point of differentiation.
118 Public health research has investigated the effect of social capital embedded at the country, state,
119 neighborhood, workplace or family levels. The culture of each of these settings influence social
120 capital display, conditioning the mechanisms through which social capital influences health. More
121 solid research is needed, as well as an extended debate and consensus about how social capital at
122 each scale is measured (Carrillo & Riera, 2017).

123 The construct of social capital, when broken down into its sub-dimensions, allows to capture
124 aspects of social cohesion, shared norms and values, informal control, social influence, collective
125 efficacy, social engagement, social support and social resources, and how all these relate to
126 different aspects of health (Carrillo and Riera, 2017; Villalonga-Olives and Kawachi, 2015).

127 The current paper aims to contribute to several of the issues highlighted above through the report
128 of a qualitative study on how the different constructs of social capital in the family, school,
129 community and peers' environments influence diet-related behaviors. A particular strength of
130 employing qualitative methods is the fact that they allow to integrate both a social cohesion and a
131 networked approach to social capital, overcoming some of the limitations of restricting to only one
132 of these.

133

134 **Methods**

135 This study was developed through a qualitative multiple-cases study design. According to our aim
136 of understanding the influence of social capital on adolescents' dietary behaviors as a social
137 phenomenon, a qualitative description (QD) approach was followed (Sandelowski, 2010). When
138 compared to other qualitative approaches such phenomenology, grounded theory or

139 ethnography, QD has been posited to be “the method of choice only when a description of a
140 phenomenon is desired” (Neergaard, Olesen, Andersen, & Sondergaard, 2009:3). While it could
141 seem that QD entails 'pure description' in positivistic terms, it is more accurate to articulate it as
142 low-inference interpretation, as descriptions will always depend on the perceptions, inclinations,
143 sensitivities and sensibilities of the describer. QD is the more objective-driven qualitative method
144 and its main focus is to comprehend a certain event or reality (Neergaard, Olesen, Andersen, &
145 Sondergaard, 2009; Sandelowski, 2000). These characteristics are present across all the research
146 process. QD uses slightly more structured interview guides than the ones used in other qualitative
147 method –although interview scripts are still modified and transformed as themes emerge during
148 the conversation. In terms of analysis, QD is developed by sorting and coding pieces of information
149 within the whole data, which can later be framed into a broader theoretical context, but will still
150 remain closer to the data than to the theory (Neergaard et al., 2009; Sandelowski, 2000).

151 QD has often been judged as lacking rigor and credibility. Milne and Oberlee (2005) propose
152 several strategies and techniques to enhance rigor, which are aligned with Guba and Lincoln’s
153 argument that qualitative research credibility should be assessed through different criteria than
154 the ones used in more positivistic approaches and they propose to enhance trustworthiness
155 through ensuring *authenticity*, *credibility*, *criticality* and *integrity* (Green & Thorogood, 2009;
156 Lincoln & Guba, 1985; Neergaard et al., 2009; Sandelowski, 2010). Strategies addressed to
157 guarantee trustworthiness in this research include: purposeful and flexible sampling methods;
158 participant-driven data collection; interview conduction, verbatim transcription and coding carried
159 out by the same researcher; use long themes as a unit of analyses and theme presence (not
160 magnitude) as a criteria of exploration; and debriefing sessions with external auditors members of
161 the research group with expertise either in the methods used or the content of this research.

162

163 **Sample**

164 Consistent with qualitative description, a purposeful and maximum variation sampling strategy
165 was employed. Accordingly, *generic* [research interest was not to investigate the particular
166 characteristics of cases], *typical cases stratified by criteria* [cases were chosen based on certain
167 characteristics shared among the members of the group of interest], were selected with the
168 intention of gaining insight into the role of social capital and significant lifestyle and diet-related

169 variables in adolescents from different socioeconomic contexts from the perspective of each case
170 (Coller, 2000; Patton, 2002; Pope & Mays, 2006; Sandelowski, 2000). Data inference of the
171 studied cases does not pursue generalization, rather, an analytic inquiry that can serve as a basis
172 for future quantitative research is pursued.

173 The sample was selected through four different high schools located in the Spanish region of
174 Catalonia. These education institutions responded to different profiles depending on the rural-urban
175 character and the socioeconomic level of the area, as indicated by the gross disposable household
176 income indicator. The sample frame for selecting cases consisted of 195 adolescent participants in
177 a previous research in these same institutions during which the participants, 4th grade secondary
178 school students, and their parents were asked to indicate whether they would like to be contacted
179 in future phases of the research, if their profile matched the inclusion criteria.

180 For the multiple-cases study, the following criteria were established. : (1) rural; (2) urban-highSES;
181 (3) urban-mediumSES; (4) urban-lowSES profile. Then, 40 cases were selected according to the
182 following conditions:

- 183 - Rural vs urban area of residency.
- 184 - SES family level, measured by parental education, according to the classifications from the
185 Spanish Society of Epidemiology (Sociedad Española de Epidemiología, 1995). In
186 agreement, it was set to select half of the cases whose highest parental education was up
187 to post-compulsory secondary education, and the other half with an educational level
188 higher than that.
- 189 - Family structure, in order to capture particularities in the effect that different family types
190 can have on eating habits or lifestyle, cases with the following family structures were
191 selected: (1) single-parent family, (2) two adults and only child, (3) two adults and two
192 children, (4) large family, (5) extended family at the household.
- 193 - Equity of gender will be kept as much as possible.
- 194 - Adolescents with any condition that can influence the objective of this study, such as the
195 practice of an elite sport or the existence of diet-related diseases, were deliberately
196 excluded. These conditions were mentioned to the contact person in each school so that
197 they could provide us with this information.

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200 Data Collection

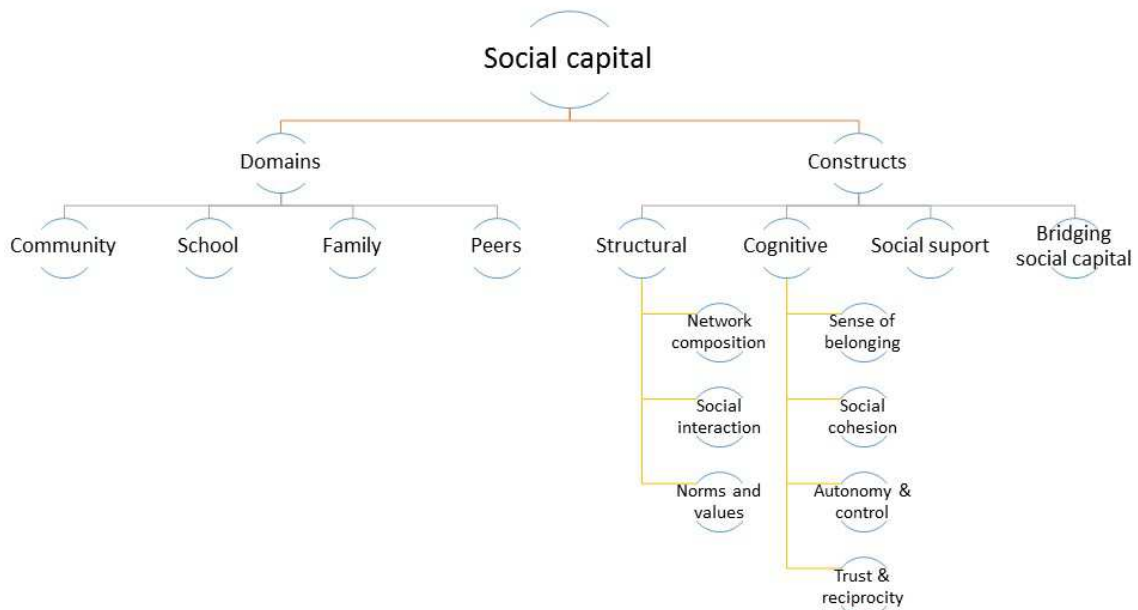
201 This phase was conducted through in-depth interviews that were held at the schools of the
202 participants during spring 2015. All interviews were conducted by the main author of this paper.
203 Participants were anticipated that interviews would last 45-60 minutes, which included an
204 introduction to the research, the administration of the consent form – students brought signed
205 parental consent with them, weight and height measurement and a semi-structured interview
206 exploring the adolescent's social environment as well as their views on lifestyle and diet-related
207 issues. *Height* was measured in millimetric position using a portable stadiometer (Seca 217®,
208 Hamburg, Germany), with the subjects head in Frankfurt position and millimetric precision.
209 *Weight* was determined to the nearest 0.1 kg using a digital scale (Seca 874®, Hamburg, Germany).
210 Participants were barefoot, and wearing light clothes. Weight and Height measures were used to
211 calculate BMI (kg/m^2). With the aim to facilitate comparability, subjects were classified according
212 to the WHO reference charts and z-scores cut-points (WHO, 2007).

213 A general script for the interview was designed based on the operationalization of the different
214 constructs of social capital to be explored in every setting as well as the necessary aspects to be
215 known about the participants' lifestyle. This script was adapted, when necessary, to the situation
216 and discursive development of the conversation with the participants. Generally, interviews began
217 by asking the participants to describe the place they lived in, their families, schools and groups of
218 friends, and continued by talking about health, lifestyle and diet in a second part.

219

220 Data Analysis

221 Interviews were recorded and transcribed into NVivo10 qualitative data analysis software (QSR
222 International Pty Ltd. Version 10, 2012). Transcriptions were first read thoroughly to acquire a
223 general sense of the information contained. Next, data was coded according two criteria: social
224 capital domains and constructs. The whole *tree node* of categories can be seen in Figure 1. Social
225 capital categories were derived from the theoretical framework presented above. Interview
226 fragments were classified into more than one category or subcategory, if applicable.



227

228 *Figure 1. Categories of content analysis for the multiple cases' study.*

229 Source: own elaboration

230

231

232 **Findings**

233 In the following pages, the results of the study are reported and discussed in relation to relevant
 234 bibliography. This section is organized according to the different domains from which social capital
 235 influencing dietary behaviors is drawn: community, school, family and peers. Within each domain,
 236 all applicable constructs of social capital are identified. The quotes presented here are a
 237 translation of the original interviews, which were held in Spanish or Catalan.

238 **Study Sample**

239 Table 1 shows cases distribution according to the selection criteria. After reviewing the
 240 sociodemographic characteristics of our sample frame, two profiles were not found, and for seven
 241 others, the selected participants rejected the invitation to participate. For two of the latter, a
 242 substitute was identified, while there were no additional participants that responded to the
 243 desired profiles for the other five. The final sample was then of 33 participants.

Participant	Gender	Territory	Family	Age	Weight	Family structure at the household
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	School		SES			status		
1	1	M	Rural	High	16	N	Only child	
2	1	M	Rural	High	16	N	Two adults + two children	
3	1	F	Rural	High	16	N	Large family	
4	1	F	Rural	High	16	N	Single parent/Two households	
5	1	F	Rural	High	16	O+	Single parent/Two households	
6	1	F	Rural	High	16	O	Large family	
7	1	M	Rural	High	16	O	Extended family	
8	1	F	Rural	High	16	O	Two adults + two children	
9	1	F	Rural	Low	16	N	Only child	
10	1	F	Rural	Low	16	N	Extended family	
11	1	M	Rural	Low	18	N	Large family	
12	1	M	Rural	Low	17	N	Large family	
13	1	M	Rural	Low	16	N	Two adults + two children	
14	1	F	Rural	Low	16	N	Single parent/Two households	
15	1	F	Rural	High	16	O	Two adults + two children	
16	1	M	Rural	Low	16	O+	Only child	
17	1	F	Rural	Low	16	O+	Single parent/Two households	
18	1	M	Rural	Low	16	O	Two adults + two children	
19	1	F	Rural	Low	17	O	Extended family	
20	3	M	Urban	High	16	N	Two adults + two children	
21	3	F	Urban	High	16	N	Extended family	
22	2	M	Urban	High	16	N	Large family	
23	2	F	Urban	High	16	N	Only child	
24	2	M	Urban	High	16	N	Single parent/Two households	
25	2	F	Urban	High	16	N	Large family	
26	3	M	Urban	High	16	O	Single parent/Two households	
27	2	M	Urban	High	16	O	Only child	
28	3	F	Urban	Low	16	N	Single parent/Two households	
29	4	F	Urban	Low	16	N	Extended family	
30	4	F	Urban	Low	17	N	Two adults + two children	
31	3	F	Urban	Low	16	O	Only child	
32	3	M	Urban	Low	16	O	Single parent/Two households	
33	4	F	Urban	Low	16	O	Only child	

244

245 Table 1: Sample characteristics

246 Note: M: Male; F: Female Low: Highest educational parental level up to post-compulsory secondary school; High: Highest
247 educational parental level beyond post-compulsory secondary school; N: Normoweight; O: Overweight; O+: Obesity

248

249 **Community context**

250 After welcoming the participants and introducing them to the study, the interviews were initiated
251 by asking the participants to describe the place they lived in. This question allowed a smooth
252 beginning of the interview, without focusing too much on personal issues, while served as the
253 entrance to explore community social capital.

254 As expected, and in agreement with previous research (Bargiota, Pelekanou, Tsitouras, &
255 Koukoulis, 2013; Midouhas & Platt, 2014; Nummela, Sulander, Rahkonen, Karisto, & Uutela, 2008),
256 there were differences on how rural and urban adolescents perceived their social environment.
257 Rural context adolescents generally demonstrated knowledge of everyone in their town, while
258 that was not the case in the urban areas. In fact, this difference was particularly evident when
259 looking at the meaning that the word 'neighbors' had for each of. While most rural adolescents
260 thought of neighbors in terms of inhabitants of the same village or neighborhood, urban
261 participants talked about neighbors in terms of people living in the same building.

262 Some exceptions happened in the case of urban adolescents whose parents and grandparents had
263 always resided in the neighborhood, which manifested to stop and talk to the neighbors when
264 they run into each other at the street, as well as the opposite was true for rural adolescents that
265 just moved to a different village.

266 *'Yes, more or less [we know each other]. We have a very good relationship with our next door*
267 *neighbors' (B002, male).*

268 *'Yes, I think people generally do (know each other). People like my grandmother, who has*
269 *been living here for a long time, know each other and they will help each other no matter*
270 *what. They always say hi, they stop to talk to each other in the street... some of the people*
271 *that have just arrived say hi, but there are others that don't even look at me when I walk by*
272 *their side' (L'H008, female).*

273 *'The relationship among neighbors is very good, because it is a long-time relationship. We all*
274 *know each other. It is a very close relationship' (P209, male).*

275 *'I live in the Eixample, close to Plaça Catalunya. It is not a neighborhood with their own*
276 *festivity or where they do a social paella. It is a neighborhood crowded with offices and hostels,*
277 *there are a lot of foreigners and tourists' (C010, male).*

278 Apart from the time of residency in the town or neighborhood, experiences with other neighbors
279 have an important influence on how adolescents see the places they live in and whether they feel
280 happy living there. While authors like Morrow (1999) might consider this as a part of social capital,
281 we agree with Harpham (2002), that views of the environment act as an intermediate variable
282 between social capital and health. In this sense, in all the groups there were adolescents that felt
283 good living in their towns/neighborhoods and adolescents that did not, although their reasons
284 were not the same. For example, perceived insecurity is only mentioned by urban participants,
285 whereas boredom, mistrust or too much gossip were exclusively referred to by rural adolescents.

286 It is interesting to note that none of the adolescents in the most privileged groups had negative
287 perceptions about their location.

288 Another point of interest of our study with regard to adolescents' social capital was **social**
289 **participation and social networking** in their communities. This participation could take different
290 forms: local associations, preparation of events, informal relationship of adolescents with other
291 adults in their communities, etc. Generally speaking, it can be said that adolescents did not have a
292 very active role in their communities due, on the one hand, to lack of structures and opportunities
293 to do so, and, on the other, to a certain disinterest of the adolescents themselves in being involved
294 in their communities. As highlighted by Fergusson (2006), Morrow (Morrow, 2004, 2001, 1999)
295 and Harpham (2002), youth' experiences of the communities they live in are highly conditioned by
296 their opportunities to participate and engage in them. This is, the way in which they experience
297 their communities depend on their degree of involvement, which, in general terms, seems to be
298 more customary in rural contexts, except in the urban cases in which families have resided for
299 generations in the same neighborhood and/or when the presence of community associations is
300 very vivid.

301 Participants that manifested a strong bond with their communities mostly drew it from
302 participating in civic associations or activities promoted by the city council of rural areas or small
303 urban neighborhoods, mainly in the context of festivities. In general, it was more common about
304 medium-low groups. Lack of economic resources, as well the users' profile of some public services,
305 were perceived as a limitation to participate in social activities.

306 *'I do some community things outside the school, but that have been promoted by my school.*
307 *We are at the service of the community and do a lot of things to help others and our*
308 *neighborhood. We try to give things another point of view, because this neighborhood is*
309 *supposed to be on the bad side of l'Hospitalet and we try to clean its image' (L'H008, female).*

310 *'I belong to a leisure association and we go on excursions, meet with other groups... we vote*
311 *and then depending on the budget that we have, we decide' (B002, male).*

312 *'I like dancing, and I would do more things, but because there isn't much money I can't do a lot*
313 *of things. But I would like to do more. Every time that I have the chance, I go places where*
314 *there are activities' (L'H008, female).*

315 *'There [at the youth center], you normally find a kind of people that I don't think is the right*
316 *one, and if you go there you will end up going their way and that's what I don't like. There you*
317 *find 'dodgy' people, and I get along with them, I mean, I greet them, but I don't want to be*
318 *with them so much' (P006, male).*

319 No reference was made on how social capital at the community level could influence lifestyle or
320 dietary habits in our sample.

321 **School context**

322 Almost all the participants stated that they were fond of their schools. Only three of them asserted
323 not liking their centers at all. While reasons to not like the school centers were varied, in most
324 cases they did not necessarily have to do with any social capital related aspect. Reasons to like
325 one's school were especially related to good relationships and/or experiences with people.

326 *'I like it a lot. I love the way they teach you not only with regard to school content, but also to*
327 *be better persons' (C030, female).*

328 *'I like my school. We are not very cohesive, everyone has their own group, but that's okay'*
329 *(B014, female).*

330 *'Our high-school is a little old, things are a little bit broken, but in spite of it all I like it. There*
331 *are all kinds of people, we don't need to be all the same; so I like it' (P007, female).*

332 With regard to participation, it is fair to say that, in general, adolescents in our sample were not
333 very actively involved in their high-schools, either because they lacked the mechanisms or the
334 interest to participate. Students in the urban-low group were the exception, most likely because
335 the strong commitment of their high-school with the neighborhood and the students, most of
336 whom are immigrant and need specific support to be involved in the community.

337 *'We don't have a very active role in organizing activities or such. In fact, it doesn't really*
338 *matter, I rather let them do it...' (B059, male).*

339 Last, very little can be said about the influence of the school context and the social capital drawn
340 from it on health-related behaviors. Although all schools have developed any kind of health-
341 promotion activity, it seems to be something rather more sporadic than a continuous *value* or
342 *resource* that impact adolescents' lifestyle. This result would be somewhat different than the
343 obtained other studies (Dufur, Parcel, & Mckune, 2008; Eriksson, Hochwalder, Carlsund, &
344 Sellstrom, 2012; Novak & Kawachi, 2015; Novak, Suzuki, & Kawachi, 2015). We hypothesize that it
345 might be due to the chosen indicator of social capital and health outcome: authors like Kawachi
346 (Kawachi & Berkman, 2014) have well pointed out how the association of trust plus another
347 subjective wellbeing-related measure could entail a significant bias.

348 **Family context**

349 Apart from a mere description of the family structure, our interest lied in the relationships
350 between the different family members and these aspects that can be considered as a part of social
351 capital, such as **social interaction, sense of belonging, social cohesion, shared norms and values,**
352 **informal control and autonomy, social support and bridging social capital** and how these affected
353 lifestyle or dietary habits.

354 When looking at **social interaction** two points captured our attention: whether family structure
355 had a significant impact on social interaction, and how social interaction influenced other
356 dimensions of social capital. The way in which adolescents interacted with the members of their
357 family did not necessarily vary based on household family structure nor SES, nor family structure
358 did not seem to influence health outcomes, as also noted by (Gray et al., 2007; Moreno et al.,
359 2004). Almost all the participants referred to talking to their parents, siblings, step-parents doing
360 errands, taking a walk, watching TV or having meals together. As it may be expected, though,
361 dissimilarities appeared when looking at feelings of **confidence and closeness** among family
362 members and the extent of things that adolescents shared with their families, which, in turn,
363 seemed to be related to the quantity and quality of **social interaction** between family members,
364 and perceptions of **family cohesion** and **sense of belonging**.

365 There were also important gender differences in how participants reported their relationships
366 with their family and the meaning and relevance that it has for them. In general, girls appear to be
367 more reflective and concerned about their family relationships. On the one hand, it could be due
368 to the different cultural roles of males and females. A second explanation would be the fact that
369 the degree of maturation (girls tend to mature earlier than boys) also influences reflection about
370 all these questions (Morrow, 1999; White, 2008).

371 *'My family is not conventional at all. We trust each other a lot, and the relationship between us*
372 *is not like the one most people have with their parents. With my parents, I have talked about*
373 *things that are not very normal....' (C030, female).*

374 *'I get along better with my mom than with my dad. Because with my mom I can talk about*
375 *many things that with my dad I can't. With him I only speak about school and English' (L'H023,*
376 *female).*

377 *'I trust my dad more than my mom. I can explain more secret things to my dad, because I*
378 *know that he won't tell anyone. However, my mom will probably tell my grandmother or*

379 *something like that. With her I talk more about girl things, like periods and so on' (B014,*
380 *female).*

381 *'In my family, we have a certain degree of confidence, but I don't tell them the same things*
382 *that I tell to my friends' (P006, male).*

383 *'I feel very confident with my mother's partner. I would say that sometimes I trust him more*
384 *than my mom, but that's because I spend more time with him. I also trust my dad, though!'*
385 *(P215, female).*

386 Turning to **social support**, the family was identified by most of the participants as the most
387 important source of support, providing all the different forms of social support. Moreover,
388 adolescents highlighted the unconditional dimension of this relationship. In fact, they all
389 considered members of their families to be among the most important people in their lives, and
390 some of them even included extended family that did not live in the same location.
391 Notwithstanding that, it is true that the kind of support that they reported to seek in their parents
392 or other family members would normally be different from the one they expect of their peers,
393 who they turned to for advice and support with regard to sentimental relationships, leisure time
394 and also understanding of other questions related to their vital moment.

395 The pathways through which family (especially parents) seemed to have a greater effect on eating
396 habits was **social influence and social control**, especially through the existence of shared norms
397 and values, and the exercise of control from the parents.

398 In the family domain, most of the non-health related **norms and values** adolescents referred to
399 were related to going out, curfew hours, school-related topics or time-management at home. With
400 few exceptions, adolescents in our sample felt that they had a fair degree of autonomy with
401 regard to their parents. Family rules around food and nutrition condition the kind of food available
402 at home, the way in which family meals develop, the decisions that adolescents are able to make
403 around their diets, and also the reasons why adolescent make these decisions. Conceptualized this
404 way, **norms and values** is a highly interrelated category with **autonomy and control**, and can be
405 considered one of the main influencers on youth diets (Berge, Arikian, Doherty, & Neumark-
406 sztainer, 2012; Patrick & Nicklas, 2005; Stevenson, Doherty, Barnett, Muldoon, & Trew, 2007).

407 *'I have learnt how to eat well at my grandmother's, from what I have seen. It doesn't mean*
408 *that we necessarily like the same things, though, because for example, they love stews and I*
409 *don't like them' (L'H008, female).*

410 *'I don't eat fruit every day because I don't like it much. Besides, my parents don't buy it. And*
 411 *with fish it's similar: we eat fish once a week maximum, because we don't have the habit of*
 412 *eating fish more often' (P006, male).*

413 *'Most of my meals are decided by my parents. But, for example, on Sundays we always make*
 414 *like a plan of the next week in order to see what we will eat, and we participate in this' (P010,*
 415 *female).*

416 *'I don't have much choice about what I eat at home because everything is set out for us. For*
 417 *example, we eat fish three times per week, vegetables... not always the same kind, the specific*
 418 *product changes, but the general framework is decided by our parents, because they want the*
 419 *best for us. If yesterday we ate this, then they don't want us to eat it again. They care about*
 420 *our health' (P025, female).*

421 *'At home, my mom always prepares everything for the whole family, except for my sister who*
 422 *cooks for herself. Vegetables and so on...' (P216, female).*

423 *'My father lifestyle and diet are very good. My mother's not that much. But we all eat healthier*
 424 *because of my dad' (P006, male).*

425 *'I don't have breakfast. When I was in primary school I did, because my mom looked after me.*
 426 *In fact, there was a time when I got sick very often, because I did not eat absolutely nothing*
 427 *until 4pm. And now my mom makes me have breakfast everyday' (P254, female).*

428 *'I eat what I eat because it is what I am given. I don't choose, I eat what my parents give me.*
 429 *My parents decide my breakfast, lunch and dinner' (P013, male).*

430 As demonstrated in other studies –although not through the lenses of social capital (Davison &
 431 Birch, 2001; Hendrie, Sohonpal, Lange, & Golley, 2013; Savage, Fisher, & Birch, 2008)- our sample'
 432 diet was highly dependent on their parents' decisions which, as all adults, were in turn influenced
 433 by elements such as knowledge, cooking skills, economic resources and motivations around food,
 434 which in most cases seem to be guided by health concerns. Food availability at home came up as
 435 something that limited the intake of foods such as vegetables or fish.

436 **Peer context**

437 In almost all the cases, the most relevant group of friends was drawn from the school
 438 environment. Exceptions to this were more common among rural adolescents who lived in a
 439 different village from the one they studied in. In other cases, too, sports clubs appeared to be the
 440 most important source of friendship. Relationships among peers seemed to vary not only among
 441 contexts, but also among genders. Girls, particularly from the rural context, reported a lot more of
 442 conflicts between the different members of the groups than boys, which seemed to be related to

443 disputes on specific bonds among the different members of the groups. SES differences were not
444 apparent.

445 A further difference with regard to gender was related to the kind of activities that adolescents
446 undertook with their friends. While boys are more prone to practice sport (soccer, skating,
447 basketball...), girls just hang out, talk to each other, watch movies, etc.

448 In terms of social capital, friends were accounted to constitute a highly important source of social
449 support, especially **emotional support**. One of the most repeated sentences regarding friends is
450 that of 'they understand me and will be there for me no matter what. I know I can trust them'. On
451 the other hand, the perception of not fitting into the group is an important source of suffering.

452 Not surprisingly, the fact of being alike or different with regard to the group appeared in quite a
453 few conversations. While most adolescents in our sample wanted to fit in, keeping their own
454 identity and individual traits were important for them too. Here, lifestyle emerged as a
455 differentiating feature among friends and different groups, especially among girls in the rural
456 context, in which two of the participants directly defined their friends' groups in terms of
457 smoking/not smoking, or drinking/not drinking.

458 In order to comprehend how social capital in the peer domain could influence our sample's eating
459 behavior they were asked whether they talked about food with their friends, what kind of food
460 they ate being with them and if they changed what they normally eat because of being with their
461 friends. It became evident that they barely talk about nutrition with friends. Apart from **social**
462 **influence** when eating together, which does affect what they eat, explicit **shared norms and**
463 **values** among peers are not especially relevant for the eating habits of the adolescents in our
464 sample. Food or healthy nutrition was not a topic of conversation for the adolescents in our study,
465 beyond the habit of commenting on what they have eaten with their families. However, and
466 coincident with Salvy et al (2010) it was possible to identify some tacit norms among peers, related
467 to the kind of food they eat together (normally not very healthy food), and to the social influence
468 of thin and toned bodies' ideal to which all of them (all of us, actually) are subject to.

469 *'Being with friends does influence what you eat. Because I will end up eating the same as them'*
470 (C022, male).

471 *'At home, I maybe eat an apple as an afternoon snack, but if I am with friends I will eat a*
472 *croissant or fries. It would not be normal that everyone eats fries and I eat an apple'* (P007,
473 female).

474 *'If I wanted do go on a diet my friends would not tell me anything. Or well, they would maybe*
475 *say 'you're a pussy' (P017, male).*

476 With regard to the effect of friends on eating behaviors when they have meals together, shared
477 norms and values seemed to be more important theme among most boys, who affirm that eating
478 a piece of fruit as a snack in the afternoon would lead their friends to probably laugh at them. In
479 fact, it was particularly the case for boys who said they would feel shy about sharing with their
480 friends concerns about healthy food. Girls, in contrast, tended to talk a little bit more about food,
481 particularly those concerned the most about their body image. These results support the urgency
482 of adopting a specific gender orientation (Luis a Moreno et al., 2010; A. Morgan & Haglund, 2009;
483 Phillips, 2011; WHO Regional Office Europe, 2013)

484 In any case, almost all the participants said that they would not change what they wanted to eat
485 only because they were with their friends, transmitting autonomy on their decisions from the rest
486 of the group. However, most of them would probably not eat a piece of fruit and some of them
487 gave us examples of how they change their choices because of their friends. On the other hand,
488 however, they acknowledged eating more junk food when they were with friends, because it is
489 more fun, tasty and convenient, and that when they see a friend eating something they would feel
490 like they wanted it too (which bring us to social influence).

491 ***Other relevant social actors***

492 Last, some participants highlighted other figures as important social actors in their lives. These
493 were romantic partners or parental friends. From a social capital approach, these
494 intergenerational relationships may constitute a source of bridging social capital, from which
495 adolescents acquire other perspectives and experiences on different issues.

496

497 **Conclusions**

498 This study aimed at providing further understanding about how social capital in the family, school,
499 community and peers' environments influence diet-related behaviors using qualitative methods.
500 This responds to a recognized need in the study of social capital because of its potential to explore
501 in a profound way incipient concepts and ideas with an important personal psychosocial
502 component (Dudwick et al., 2006; Li, 2015; Morrow, 1999; Whitley, 2010). It is our conviction, that

503 looking at social influences on dietary behaviors from a social capital perspective allows to
504 identify, not only the most suitable context to implement health-promotion actions, but also
505 which resources and relationships need to be established in each of them in order to make
506 interventions successful. In the study, a multi-site perspective -including a comparison between
507 urban-rural and different socioeconomic environments- was adopted, which constitutes a unique
508 strength of this research, as it allows for the elucidation of differential social exposures, access to
509 resources, experiences and health outcomes (Carpiano, 2008; Whitley, 2010). Moreover, the
510 exploratory character of this study allowed to integrate both, the social cohesion or network
511 approaches to social capital.

512 Our results confirm the different layout of social capital in the different domains. In our
513 investigation, the domains in which the experience of participating in social networks is done in
514 first person, as it is the case of the family (including extended family in some cases) and peer
515 spheres appear to be much more influential on the adolescents' lives and dietary behaviors in
516 both rural and urban settings. These findings support the ones by Morrow (2004), Dufur and
517 colleagues (2008; 2013), Pedersen and colleagues (2015) and Morgan (2012), and are especially
518 evident in the width and depth of the discourse that the participants have on the different
519 domains, which is much more extensive when they speak about their families and friends than
520 when they do so about their neighborhoods and towns. As highlighted by Fergusson (2006),
521 Morrow (Morrow, 1999, 2001, 2004) and Harpham (2002), youth' experiences of the communities
522 they live in are highly conditioned by their opportunities to participate and engage in them, which,
523 in general terms, seems to be more customary in rural contexts, except in the urban cases in which
524 families have resided for generations in the same neighborhood and/or when the presence of
525 community associations is very vivid. School involvement tend to be low in all settings and where
526 it happens it is led by the school, rather than motivated by the adolescents' own interest. Along
527 the same lines, our results also show that differences in the resources that adolescents can access
528 through their membership in different social groups are more related to the kind of bond that the
529 different actors maintain, than to the composition of the groups itself.

530 A further observation concerns the influence of informal control, through the existence of shared
531 norms and values in the two most preponderant environments, family and the peers. At this
532 point, an emblematic phenomena of adolescence emerged: the tension between the pursuit of an
533 independent identity, assuming the responsibilities that come with it and being accepted by the

534 relevant social groups, which during puberty is mostly represented by the peers (Casas, 2006;
535 Pressley & McCormick, 2007; Ros et al., 2001). When inquired about their autonomy in making
536 decisions almost all participants assert to make independent choices regarding food. However, a
537 deeper look into their relate might indicate the opposite, as main meals are mostly decided by
538 their parents and snacks are so conditioned by what it is acceptable in the group of peers.
539 Autonomy seem to be easy to be exerted by saying “no” to a specific choice than by developing an
540 alternative behavior. Adolescents seek to form their personal identity, but they do not pursue it
541 through food. The peers’ impact seems to be associated with the consumption of unhealthy food
542 products -most of them in the form of mid-morning or mid-afternoon snacks, while family
543 influence is most related to healthy choices, as shown by Pedersen et al. (2015) regarding fruit and
544 vegetable intake.

545 In this regard, gender differences are notable. As observed by Salvy et al (2010) social norms
546 operate differently in male and female adolescents, most likely because of the qualities socially
547 associated to each behavior and characteristic. In this way, for boys it is more acceptable to eat
548 savory, highly palatable snacks (while eating an apple would be strange), something that is just the
549 opposite way among girls, reinforcing findings that cultural norms around health, food and body
550 differ between genders(Berge, Arikian, Doherty, & Neumark-sztainer, 2012; Patrick & Nicklas,
551 2005; Sato, Gittelsohn, Unsain, Roble, & Scagliusi, 2016; Stevenson, Doherty, Barnett, Muldoon, &
552 Trew, 2007) (Berge et al., 2012; Patrick & Nicklas, 2005; Stevenson et al., 2007). Further research
553 exploring these differences and its relationship with other social determinants of health as well as
554 with psychosocial aspects such as self-esteem and self-concept may offer possible clues on how to
555 improve health promotion in adolescents. The application of network analysis approaches along
556 with in-depth interviews could be very useful in this direction.

557 This research is not exempt of limitations. A more extended sample – with a wider range of
558 profiles and duplicates of the different profiles, as theoretically planned- would have allowed a
559 more in-depth understanding of questions such as the potential influence of the different family
560 structures, peer groups composition and orientations. Additionally, multiple-cases studies entail a
561 great degree of complexity in the analysis, which is, at the same time, necessary to understand the
562 reality of social phenomena.

563 Our findings point out to several implications to promote adolescent health. First, the family and
564 peers domains appear as the most suitable contexts to implement health-promotion actions

565 through social strategies. In a society where parents and future-parents are losing nutritional,
566 cooking and culinary skills and competences - a well-known determinant of healthy eating (Engler-
567 Stringer, 2010; Sainz García et al., 2016), families need to be empowered to establish positive,
568 continued and active relationships with the youth and to provide them with sound knowledge and
569 competences about what is eating well. In family social capital terms, it means to work on
570 fostering *sense of belonging* between family members, *social interaction* around the actions and
571 processes implicated in healthy eating (planning, shopping, preparing, cooking, eating) and *group*
572 *resources* towards healthy eating, such as nutritional knowledge or cooking skills (Carrillo,
573 Kawachi, & Riera, 2017).

574 With regard to the peer context, our results suggest that healthy eating interventions targeting
575 groups of friends should aim to create a group feeling about healthy eating, rather than focusing
576 on intragroup influences. Group influences already exist, but they currently affect unhealthy
577 foods. Last, if schools and community settings are to be used as a health-promotion environment,
578 actions directed to increase youth participation and sense of belonging are mandatory.

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