Socializing Styles and Intensity of Communication in Parent-Child Relationships

Mª Soledad Lla*, Gonzalo Musitu*, Fernando García Perce* & Anne Marie Fontaine**

The objective of this research is to assess the relation between family education and communication. The family communication questionnaire (C.I. 88, Musitu et al.) and an adaptation of the Family Education Scale were applied to a sample of 424 male and female secondary school students between the ages of 14 and 18 (EMBU). The same procedure was followed with the parent’s child-raising patterns. Once these groups had been obtained, the differences between the Family Education and Communication scale factors in both variables were analyzed by applying the General Linear Model and Turkey’s Test. Firstly, the Family Education is assigned as dependent variable and the Family Communication as independent variable. Then, the same process is repeated with the Communication as the dependent variable and the parental structure groups as the independent variable. With regards to the results, it is important to emphasize the strong bi directional relation found between both variables.

Adolescence is a stage of human life which is characterized by the dramatic increase of the importance and intensity of friendship and the notorious decrease in parent-child relationships (Bickman & Perlmutter, 1981; Hunter, 1985; Keys, 1981; Paj et al., 1984; Moore, 1987; Noller & Bigl, 1985; Steinberg, 1981). However, Bell (1967) emphasized the study of the relationship between parents and adolescents and regarded this period as a “taking-off period” (a period in which the adolescent tries to increase his/her independence and, eventually, abandon the immediate family system). On the other hand, Erikson (1959) pointed out the fact that, along with the need of a greater independence, the adolescent also needs the affection and support from his/her parents. Likewise, Noller and Callan (1991) consider the quality of family relationships to be of the utmost importance in order to determine the adolescent’s competence and confidence when facing this stage of life. According to McGoldrick & Carter (1980), the changes in the family system might lead to a relationship more in accordance to the age of the parents and adolescents.

Family Communication in this period is a very conclusive factor in the family atmosphere. In relation to this, several researches have shown connections between parent-adolescent communication and self-esteem (Matson, 1974; Noller & Callan, 1991), school adjustment (Sportsalkowski & Eubanks, 1976; Fontaine, 1996) and academic achievement (Christopher, 1967). Other researches have pointed at the negative effects of a family communication breakdown (Chidler & Gochten, 1976; Noller & Callan, 1991) and the advantageous effects on self-esteem and well-being arising from a positive communication increase (Baehman, 1976; Noller & Callan, 1991).

Some authors have connected the characteristics of the communicator to the acceptance level of discipline strategy (Cody et al., 1981) or else to individual characteristics or the dispositional characteristics of the “discipline demanding” person (Bowier et al., 1984).

The influence of the Family Discipline techniques are conclusive for the adolescent
socialization (Parker et al., 1979; Macoby, 1980; De Mau, 1982; Rollins & Thomas, 1970; Overy & Murray, 1982; Rose et al., 1983; Fontaine et al., 1986, 1992; Noller & Callan, 1991). The concept “Family Discipline” refers to the set of strategies used by the parents and aimed to influence the children by urging a series of values and cultural patterns which guide the children’s social behaviour (Molpeceres, 1991). Two main sources of variability in the parenting discipline have been identified: support and control (Rollins & Thomas, 1979; Roher & Festinger, 1985; Musitu et al., 1988; Garcia et al., in press). Parenting Support has been defined as “the behaviour displayed by a parent towards his/ her child which makes the child feel confident with his/her parent and assures the parent’s full acceptance and approval as a person” (Thomas et al., 1974). Parenting Control refers to the type or degree of the parent’s influential power (Musitu et al., 1989; Generally speaking, the two types of parental discipline have been made according to the type of control exerted on the child (Pardeck & Pardeck, 1990). Although different terms have been used three main family discipline styles have been pointed out. Musitu and Gutierrez (1984) have distinguished between “inductive” or support discipline, “coercive” discipline and “indifferent” or “negligent” discipline in a dimensional study which is consistent with the theoretical conclusions from other authors.

The study of the relationship between family communication and socializing has been neglected in previous literature. Some approaches have analysed the relationship between communication/self-esteem (Chattier & Gourrier, 1976; Noller & Callan, 1991), and social adjustment (Fontaine, 1990). Moreover, there is a vast tradition in the field of pathologic communication and psycho-social adjustment (Watzlawich et al., 1967; Sellin, 1980; Bertello et al., 1992; Bhagat & Agarwal, 1992). The present study intends to analyse the relationships between the different family-socializing styles (Musitu & Gutierrez, 1984) and family communication. The hypothesis of the study is as follows: families with a higher understanding and support of the education of their children yield a higher communication level. Families with lower communication levels develop a higher frequency of coercion and physical punishment.

Methodology

Description of the universe and sample

The sampling technique of this study is the proportional distribution according sex, age and academic level.

The universe of this work consists of 424 Valencian secondary-school students who were in their first, second and third year courses during 1988-89. With regards to the sex, there is a similar proportion of male and female subjects: 48.11% male and 51.89% female subjects.

Table 1. Distribution of frequency within the sex variable.

<table>
<thead>
<tr>
<th>Sex</th>
<th>Fr.</th>
<th>Fr. A</th>
<th>Pe.</th>
<th>Pe. A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>204</td>
<td>204</td>
<td>48.1</td>
<td>48.1</td>
</tr>
<tr>
<td>Female</td>
<td>220</td>
<td>424</td>
<td>51.9</td>
<td>100.0</td>
</tr>
</tbody>
</table>

The ages of the subjects range between 14 and 18 years old. 65% are between 15 and 16 years old; 11.3% are 14 years old, 17.2% are 17 years old and 5.8% are 18 years old.

Table 2. Distribution of frequency within the age variable.

<table>
<thead>
<tr>
<th>Age</th>
<th>Fr.</th>
<th>Fr. A</th>
<th>Pe.</th>
<th>Pe. A</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>48</td>
<td>48</td>
<td>11.3</td>
<td>11.3</td>
</tr>
<tr>
<td>15</td>
<td>126</td>
<td>174</td>
<td>29.7</td>
<td>41.0</td>
</tr>
<tr>
<td>16</td>
<td>153</td>
<td>327</td>
<td>36.1</td>
<td>77.1</td>
</tr>
<tr>
<td>17</td>
<td>73</td>
<td>400</td>
<td>17.2</td>
<td>94.3</td>
</tr>
<tr>
<td>18</td>
<td>24</td>
<td>424</td>
<td>5.7</td>
<td>100.0</td>
</tr>
</tbody>
</table>

As for the percentage of pupils in each of the three Secondary Education levels (Bachillerato, Untificada, Profissional) 26.6% attend the first level, 41% attend the second level and 32.1% attend the third level.

Table 3. Distribution of frequency within the education level.

<table>
<thead>
<tr>
<th>Level</th>
<th>Fr.</th>
<th>Fr. A</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>114</td>
<td>114</td>
</tr>
<tr>
<td>2nd</td>
<td>274</td>
<td>288</td>
</tr>
<tr>
<td>3rd</td>
<td>136</td>
<td>424</td>
</tr>
</tbody>
</table>

The instruments used in this research are an adaption of the Family Education Questionnaire EMSBU (Periss et al., 1980) and a Family Communication Questionnaire specially designed for this study.

The Family Communication Questionnaire assesses the filled perception of the communication level within the family environment. In accordance with the available literature and after interviewing some teenagers, twelve topics were obtained: T.V., entertainment, studies, friends, drugs, sexuality, politics, religion, present-day issues, personal projects, family life and culture. We could empirically assess their comprehensiveness by including an open item at the end of the questionnaire. In this last item, the subject was asked to add any other communication topic which was not included previously.

Communication was defined by the following directional pairs: parent communication with children (father/son/daughter, mother/son/daughter) and the children’s communication with their parents (son/daughter/mother, daughter/son/mother). The son/daughter is always the one who explains the perceptions he/she experiences when his/her parents talk to him/her, or else, when he/she talks to his/her parents. In order to assess the reliability of this instrument, six inter-consistency coefficients were applied. These coefficients conveyed the following correlations: Spearman-Brown coefficient (0.85), correlation between the two halves (0.85), Guttman-Rubin coefficient (0.86), alpha coefficient for all the items (0.91), for the odd items (0.80), for the even items (0.85). The parents’ educational background not directly correlates to their children’s self-concept (Periss et al., 1980; Estelles, 1987, Herrero et al., 1990), but also to their children’s prosocial behaviour, school adjustment and academic achievement (Gutierrez, 1989), which, at the same time, accounts for the validity of the instrument.
with the communication being the dependent variable and the parental structure groups the independent variable.

**Family Education.** A factor analysis was carried out and six factors were found: Overprotection/Restriction, Understanding and Support, Executive Punishment, Achievement Pressure, Rejection/Prediction and Guiltiness/Disapproval. Moreover, a cluster analysis according to the family education factors was made so as to identify the different structures of the adolescent population. Four family structures were obtained (p = 0.01). Tukey Test applied in order to ascertain the significance of the differences between the averages of each cluster in the different discipline factors (See Table 4).

It was found that there existed important differences among the clusters (alpha=0.001) excepting the average between cluster 2 and 3 in Guiltiness/Disapproval (28.120-28.770) and Rejection/Prediction (22.685-22.104) factors, as well as for the clusters 1 and 3 in the Achievement Pressure factor (22.508-22.532) (See Diagram 1).

The four different types of family discipline obtained were defined as follows: The first group, which we call *repressive* consists of 240 subjects and its typical feature is the predominance of understanding and support practices and a minor presence of Overprotection/Restriction, Punishment, Achievement Pressure, Rejection/Prediction and Guiltiness/Disapproval. This predominant group represents one extreme of the sample and is the one which presents higher scores in understanding and support and lower scores in the rest of the factors. The opposite extreme of the sample is represented by cluster 4, which consists of fifteen subjects. It presents a predominance of Overprotection/Restriction, Punishment, Achievement Pressure, Guiltiness/Disapproval and Rejection/Prediction and a lack of Understanding and Support. Bearing these characteristics in mind, this discipline has been named * covert discipline. * The intermediate clusters, clusters 2 and 3, include a population of 92 and 77 subjects, respectively, in which the different discipline factors interrelate. Cluster 2 presents a higher level of Overprotection/Restriction, Punishment, Achievement Pressure and Understanding and Support, while the Rejection/Prediction and Guiltiness/Disapproval factors present the same levels. Since this cluster is characterized by the presence of Overprotection/Restriction, Punishment, Achievement Pressure, Guiltiness/Disapproval and Rejection, along with higher understanding and support, this type of discipline has been named * directive discipline. * However, cluster 3 presents a lower degree of all the factors and it can be regarded as *indifferent discipline.

**Family Communication.** In the same way as with the family education variable, a cluster analysis was carried out in terms of the family communication degree. Three groups were identified (p = 0.01): High communication (Cluster 1), Medium Communication (Cluster 2) and Low Communication (Cluster 3). All the differences between the averages of the three groups are significative (See Table 5).

**Family Education in relation to the Communication.** A variance analysis was undertaken with the Family Discipline being the dependent variable and the Communication the independent variable (See Table 6). This analysis conveyed the fact that communication influences the following education factors: Understanding and Support (p = 0.001). Excessive Punishment (p = 0.029), Rejection/Prediction (p = 0.001) and Guiltiness/Disapproval (p = 0.001). In the other family discipline factors no significative differences were found: Overprotection/Restriction (p = 0.351) and Achievement Pressure (p = 0.250).

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**Table 4. Differences between the averages of the family education clusters**

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>Cluster 1</th>
<th>Cluster 2</th>
<th>Cluster 3</th>
<th>Cluster 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overprotection/Restriction</td>
<td>21.900</td>
<td>18.022</td>
<td>20.286</td>
<td>14.267</td>
</tr>
<tr>
<td>Understanding and Support</td>
<td>55.058</td>
<td>49.043</td>
<td>40.623</td>
<td>35.600</td>
</tr>
<tr>
<td>Executive Punishment</td>
<td>45.607</td>
<td>41.370</td>
<td>43.286</td>
<td>31.800</td>
</tr>
<tr>
<td>Achievement Pressure</td>
<td>22.058</td>
<td>19.739</td>
<td>22.532</td>
<td>17.900</td>
</tr>
<tr>
<td>Rejection/Prediction</td>
<td>24.313</td>
<td>22.665</td>
<td>22.104</td>
<td>18.267</td>
</tr>
<tr>
<td>Guiltiness/Disapproval</td>
<td>22.317</td>
<td>26.120</td>
<td>28.779</td>
<td>23.267</td>
</tr>
</tbody>
</table>

(*) High indices in the understanding and support factor mean high understanding and support. On the other hand high indices in the other factors mean that these characteristics exist in a lower degree.

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**Table 5. Averages of the three clusters in both ways and directions, frequencies, percentages and results of the variance analysis of the three groups from the cluster analysis.**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CLUSTER 1</td>
<td>25.329</td>
<td>22.205</td>
<td>23.555</td>
<td>22.895</td>
<td>227</td>
<td>40.2</td>
</tr>
<tr>
<td>CLUSTER 2</td>
<td>35.618</td>
<td>32.249</td>
<td>34.644</td>
<td>32.965</td>
<td>233</td>
<td>41.3</td>
</tr>
<tr>
<td>CLUSTER 3</td>
<td>44.223</td>
<td>44.481</td>
<td>46.712</td>
<td>46.931</td>
<td>104</td>
<td>18.4</td>
</tr>
</tbody>
</table>

**Variance Analysis**

<table>
<thead>
<tr>
<th>F</th>
<th>383.710</th>
<th>416.724</th>
<th>557.997</th>
<th>479.359</th>
</tr>
</thead>
<tbody>
<tr>
<td>p</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>
Table 6. ANOVA. Family Education in relation to Family Communication.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>SC</th>
<th>GL</th>
<th>MC</th>
<th>F</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overprotection/Restriction</td>
<td>25.066</td>
<td>2</td>
<td>12.533</td>
<td>1.050</td>
<td>0.381</td>
</tr>
<tr>
<td>Understanding and Support</td>
<td>701.637</td>
<td>2</td>
<td>1850.818</td>
<td>43.689</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Excessive Punishment</td>
<td>107.287</td>
<td>2</td>
<td>53.644</td>
<td>3.560</td>
<td>0.029</td>
</tr>
<tr>
<td>Achievement Pressure</td>
<td>26.718</td>
<td>2</td>
<td>13.359</td>
<td>1.267</td>
<td>0.293</td>
</tr>
<tr>
<td>Rejection/Rejection</td>
<td>173.231</td>
<td>2</td>
<td>86.615</td>
<td>13.152</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Guiltiness/Disapproval</td>
<td>359.518</td>
<td>2</td>
<td>179.759</td>
<td>14.947</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Table 7. Differences between the averages of the Family Education clusters.

<table>
<thead>
<tr>
<th>VARIABLE</th>
<th>CI/C. High</th>
<th>CI/C. Medium 2</th>
<th>CI/C. Low 3</th>
<th>0.5(*)</th>
<th>0.01(*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Understanding and Support</td>
<td>53.764</td>
<td>49.826</td>
<td>45.820</td>
<td>1.815</td>
<td>2.775</td>
</tr>
<tr>
<td>Excessive Punishment</td>
<td>44.268</td>
<td>43.865</td>
<td>42.899</td>
<td>1.082</td>
<td>1.655</td>
</tr>
<tr>
<td>Rejection/Rejection</td>
<td>23.860</td>
<td>23.489</td>
<td>22.146</td>
<td>0.715</td>
<td>1.094</td>
</tr>
<tr>
<td>Guiltiness/Disapproval</td>
<td>31.433</td>
<td>30.714</td>
<td>28.966</td>
<td>0.967</td>
<td>1.478</td>
</tr>
</tbody>
</table>

(*) High indices in the understanding and support factor mean high understanding and support. On the other hand, high indices in the other factors mean that these characteristics exist in a lower degree.

Tukey Test was applied in order to ascertain the importance of the differences between the averages of each cluster in each family education factor with significant differences (see Table 7). The family communication differences in Understanding and Support are statistically significant in all the groups (alpha = 0.001). With regards to the Punishment factor, there only exist significant differences for cluster 1 and 3. As far as the Rejection/Rejection and Guiltiness/Disapproval factors are concerned, all the differences between the group averages are significant.

These results define that if there exists a higher degree of communication in the family system, understanding and support are also higher and there is a lower frequency of punishment and disapproval on the subject. On the other hand, in the families with a low degree of communication there exists lower understanding and punishment, while rejection and disapproval appear more frequently.

Family Communication in relation to Education. The differences in family communication according to the type of discipline are statistically significant (p < 0.001) for all the possible pairs among parents and children (see Table 8).

In order to find the direction of the differences between the averages, a Tukey Test was applied. The communication pairs being intermingled with the family structures present in the cluster analysis (see Table 9).

With regards to the Child-Mother communication, the differences in the communication average are statistically significant for all the groups (alpha = 0.001), apart from groups 3 and 4 which have significant differences between their averages for an alpha = 0.05. The same tendency was observed in the pair Child-Father, apart from the fact that there exists no significant differences between clusters 3 and 4. At the same time, in groups 2-3 the differences are significant for an alpha = 0.05. In relation to the Mother-Child communication, all the differences are significant (alpha = 0.001) apart from the fact that the differences are only significant for an alpha = 0.05 and between the clusters 1-2 and 2-3. Finally, in the Father-Child pair no significant differences were found between clusters 2-3 and 3-4, but they were significant in the rest for an alpha = 0.05.

Discussion

The results of this study determine that families with prevailing educational practices based on understanding and support present the highest level of communication and parent-child exchange. Therefore, in these families the parents and children hold frequent conversations by means of a constant and very dynamic feedback process. Furthermore, this intensive communication allows for more flexibility when trying to solve family conflicts. The existence of understanding and support in these families prevents the need of other socializing styles such as rejection, punishment or guilt attribution. The more channels and possibilities of communication between the family members, the more resources the parents possess to exert influence over their children.

By reasoning with their children, the parents favour a more relaxed family atmosphere and they supposedly foster communication.

In the case of a deficient communication, there is a decrease in the expression of personal feelings, values and attitudes between parents and children, which causes a vicious circle; the lack of resources to express disagreement increases as years pass by. It can be observed that both family communication in families with an inductive discipline style are consistent with their respective defining characteristics. Thus, in family structures which foster understanding and support, the level of communication is considerably high, while in the family structures with a low-frequency of socializing factors and a high frequency of rejection, punishment and other negative socializing factors, the level of communication is much lower.

Other studies (Notler & Cullin, 1991) have assessed the existence of a paradox, that is, when understanding and support prevail and parents and children communicate and children communicate and negotiate, the child's independence is enhanced and, at the same time, the sentimentality between parent and child strengthens. Adolescents are able to make their own decisions, which conversely, are satisfactory for the parents. As a result, this process prevents the existence of continuous conflicts, which could lead to the use of negative discipline techniques.

A very interesting fact is that the less directive discipline group presents a lower communication level than the directive-disciplined group. This is explained by the fact that the first group presents lower levels of understanding and support than the second group. We can conclude that even though it applies control devices, it also uses support devices which are viewed as negative by the subject.
The level of communication measures the good or bad state of the relationships established within the family system. In accordance to the existing family structures in the sample, it has been shown how violence increases when there is insufficient communication, and that the fact that the adolescent is seeing socializing more as an imposing process than as a reasoning process. In this respect Nolter and Callahan (1991) state that by using coercive techniques, parents press upon their children a sense of being incompetent and unreliable.

To sum up, socializing is not a one-way parent-child process, but a bidirectional process because it affects and is affected by the level of communication. Thus, socialization in relation to family discipline styles and communication features, and favour or limit each other in accordance with the levels acquired.

Bibliographia


Garcia, F., Musitu, G., Fontaine, A. M. & Campus, B. As prácticas educativas dos pais na adolescencia.


Résumé

Lills, M. S., Musitu, G., Perez, G. F. & Fontaine, A. M. Styles de socialisation et intimité de communication familiale, Cadernos de Coologia Psicológica, 1903, 6, 78-88. Cette recherche prétend évaluer les relations entre éducation familiale et communication. Un questionnaire de communication familiale (CT) Musitu et al., 1980; et une Encuesta de Educacion Familiar (EMBU), Parris et al., 1988 ont été administrés à un échantillon de 424 écoliers.

Resumo

Lii, M. S., Mutila, G., Perez, F. G. & Fontaine, A. M., Estilos de socialização e intensidade de comunicação nas relações pai-filho. Cadernos de Consulta Psicológica, 1993, 9, 79-88. O objetivo deste estudo foi analisar a relação entre a educação familiar e a comunicação. Uma amostra de 92 adolescentes do ensino secundário com idades compreendidas entre os 14 e os 18 anos foi observada utilizando o Questionário de Comunicação Familiar (CF, Muriel et al., 1985) e uma adaptação da Escala de Educação Familiar (UMB, Perez et al., 1986). Os sujeitos foram agrupados em função das práticas educativas parentais e procedeu-se ao estudo das diferenças entre os fatores de duas escalas através do Modelo Genal Linear e do Teste de Tuckey. Inicialmente, a educação familiar foi considerada como variável dependente e a comunicação familiar como variável independente; depois, este procedimento foi repetido considerando a comunicação familiar como variável dependente e os grupos de estatuto parental como variável independente. Os resultados revelaram uma forte relação bidirecional entre a estatuto familiar e a comunicação familiar.

Desde os anos 50, várias investigações orientaram-se no sentido de uma avaliação dos efeitos da exposição a certos produtos tóxicos nomeadamente sítrios, tolueno e xilenos, na saúde física e psicológica dos trabalhadores. Estes estudos, realizados no domínio da dita “toxicologia psicológica” (Bourdette et al., 1983, p. 997), acabaram por atribuir um papel importante aos testes psicométricos, na medida em que se considera que permitem uma abordagem preventiva das alterações que podem ocorrer no nível do sistema nervoso em consequência da ação desses agentes tóxicos no organismo. Janusz, Indulski e Dudek (1988) referem, assim, inúmeros autores segundo os quais este método permitiria estabelecer relações de previsão entre perturbações presentes e futuras modificações estruturais no sistema nervoso.

No entanto, a tendência desses estudos parece ser de não analisar as qualidades psicométricas das baterias de testes que são utilizadas. Com efeito, limitam-se, na maioria dos casos, a uma apresentação dos dados obtidos avançando, só em alguns casos, hipóteses relacionadas com a influência de variáveis como as competências verbais e a formação escolar na determinação dos resultados obtidos, especificamente em testes de memória. Janusz, Indulski e Dudek (1988) pêrem aliás, no quesito o valor prognóstico dos testes nessa abordagem neurocognitiva uma vez que estes não revelam “os vários níveis de processamento da informação” (pp. 159) na sua realização.

Variações nos Estados de Humor e Condições de Trabalho: Um Estudo sobre a Exposição ao Formaldeído no Meio Profissional

Isabel C. Freitas *

As análises da “toxicologia psicológica” privilegiam a utilização de testes psicométricos e as questões qualitativas de avaliação de perturbações subjectivas, processa-se, desta forma, análises os efeitos psicológicos da exposição a certos produtos tóxicos no meio profissional e estará em estabelecimento de relações entre perturbações presentes e futuras no nível do sistema nervoso. Este tipo de metodologia é posto em questão no decorrer em que não são assim consideradas as dimensões da atividade social de trabalho nos efeitos psicológicos observados. O estudo realizado pretende contribuir para o esclarecimento das relações entre os efeitos, no nível dos estados do humor, da exposição a um produto tóxico — o formaldeído — e certas dimensões da atividade de trabalho, nomeadamente do tipo de horário realizado por cada trabalhador. Embora se impeça a continuação desta investigação, os dados recolhidos e tratados até ao momento parecem demonstrar que as condições de trabalho — nomeadamente condicionalismo relacionado com a organização do tempo de trabalho, espaço de trabalho e equipamentos utilizados — foram responsáveis pelas variações nos estados de humor nos indivíduos dos 6 grupos tipológicos reais no interpretação da análise biológica efetuada.

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