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Mothers and pain: the effect of a mother's pain experience on the child

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Abstract How does the preceding experience of pain by the mother affect the child's response to the painful event? This work intends to be a preliminary answer to this problem. A questionnaire with 10 items was administered to 217 mothers aged 26/45 years, with 1 (44%) or 2 (47%) children, and from different regions of central and southern Italy. The majority of the mothers had a memory of a supporting response by her family to her experience of pain. 50% of the mothers recalled an episode of physical pain and 20% an episode of moral pain. The memory of moral pain was more widespread in the South (71% of all the mothers). The definition of pain was negative (62%): pain was experienced either as a threat to health or a limitation to one's freedom. The children, conversely, dealt with pain in 67% of the cases by looking for their parents and asking for help; 33% dealt with pain alone. 91% of the mothers who become upset when they have pain have children who, when they are ill, behave in the same manner.
It is in the South that the relationships in the family remain mainly unchanged (68%) on the occasion of an illness of a child, while it is in central Italy that these improve more easily. For mothers, pain is a substantially negative experience. The study shows that a family experience of pain is passed, as far as the manner of dealing with it is concerned, from one generation to another.

Key words Pain • Family experience • Mother • Child

Introduction

In recent years, a growing interest has been witnessed for pain and its control. While in the past emphasis was placed mainly on the sensory aspects of pain, presently pain is considered to be a complex phenomenon in which sensory and motivational dimensions exist [1]. There are many psychological variables that determine what the reaction of the subject to pain will be, so that also when pharmacological methods are used for controlling pain, it is the psychological condition of the patient that often determines the chemical effectiveness [2]. As a matter of fact, it is obvious that pain is not simply a function of the extent of the physical damage only: the quantity and quality of pain that we perceive are also determined by preceding experiences and by the way we recall them, by our ability to understand the cause and to accept the consequences thereof. Pain is also a social event, since those events that are painful for certain people, are not for others [3].

Our knowledge of pain in children has remained, in fact, poor until recently, both due to communication and expression difficulties of the little subjects and above all, since it was believed that children were poorly affected by pain [4], something that was denied by several works [5–7]. Very small children have no language as a means of communication and the ability to use it only slowly appears, for describing the nuances of their stressing experiences. Therefore,

those who are interested in pain in children must interpret other forms of expression: children are, in fact, able to react vigorously to painful events and a lot of information may be acquired from non-linguistic expressions, gestures and changes in posture. However, large interpretation problems remain, and crying, the most obvious expression of pain in a child, may describe the difficulties [8].

With the development of the abilities of children to decode and analyse information and to integrate with the environment, socialisation factors start having a greater influence on emotionally expressive behaviour.

When a child begins to speak, language permits him to make new subjective experiences. For parents it is not necessary to be present at the time of the painful event, since there are the child's oral reports [9].

The language clarifies ambiguity, attaches meanings to events and supplies conceptual structures. From the time when the social environment takes a primary role in the acquisition of the language, it is expected that the prevailing conceptual system will influence the concepts of pain and illness in children [10]. Parents, in particular the mother, not only play a very important role in teaching a child how to react to the symptoms of illness, but they also teach him how to respond to these symptoms [11].

Materials and methods

Our interest was to enquire about pain in children. In preparing a questionnaire to be submitted to children, however, we became aware of the impossibility to leave out of consideration the pain experience of the mothers, for being able to understand the pain of their children. It is the mother who spends most part of the day with her child and it is the mother who teaches a child how to behave under different circumstances and how to cope with situations. It is again the mother who teaches a child the rules of the society where they are living. These are teachings all mediated by the personality and cognitive style of the mother herself. It appeared, therefore, necessary to enquire about the pain experience of the mother, in order to arrive at that of her child. We have, therefore, administered a questionnaire (previously validated on a sample of 80 mothers of children hospitalised at S. Charles IDI Hospital), in order to enquire about how a mother's pain experience may affect the child.

In order to process the data collected, we grouped the answers supplied by the mothers in categories. After the answers were divided by category, we performed an analysis of the frequencies using the χ^2 test for ascertaining the possible relationships among the variables considered from time to time.

Results

We administered our questionnaire (Fig. 1) in the waiting room of paediatricians' offices. Concurrently, we administered the mothers the STAI and ASQ in order to evaluate

1. In your memories, what type of response did your family give to pain?
   a) Comforting
   b) Immediate by the whole family
   c) Of little interest
   d) Without participation

2. Do you recall any particular event?

3. Presently, when one of the members of your family is sick, what are the responses that this situation causes?
   a) Everybody tries to collaborate for helping
   b) An attempt is made to identify the causes that gave rise to the pain
   c) Some/everybody are not interested and justify this by saying that it will go away
   d) Personal judgements or blames are expressed

4. Which one of the following definitions would you ascribe to your idea of pain?
   a) A temporary feeling
   b) A negative condition
   c) A possibility that can come up again
   d) A threat to psychophysical health
   e) A limitation to one's freedom
   f) A feeling of discomfort

5. What reaction do you have when you are in pain?
   a) You ask for help (specify from whom you ask for help)
   b) You wait, because you know that it will go away
   c) You complain in order to draw the attention
   d) You try to think of something else/you ignore it
   e) You concentrate on your pain
   f) You are upset
   g) You are afraid

6. What are the strategies that your child uses for not feeling pain?
   a) Watches TV
   b) Asks to be told a tale
   c) Plays
   d) Does nothing
   e) Looks for parents/a person in particular

7. Are the strategies the same both in the presence and absence of the parents?

8. How does your child express pain?
   a) Complains
   b) Cries
   c) Keeps silent
   d) Looks for help

9. Are the modalities the same both in the presence and absence of the parents?

10. When your child is ill, do you believe that the relationships among the members of your family are affected by a change or remain the same (positive/negative)?
    a) Yes, they show a change (specify how)
    b) No, they remain the same

Fig. 1 Questionnaire on pain

their anxiety level. The results disclosed nothing of interest (STAI-X1 average, 38.02 and standard deviation, 9.66; STAI-X2 average, 40.56 and standard deviation, 8.24; ASQ average, 22.82 and standard deviation, 9.86) with average values within the norm. The sample was composed of 217 mothers, 49% of which were from Lazio, 3% from Tuscany, 37% from Sicily, 9% from Campania and 2% from other regions of Italy. For the purpose of our research, we distinguished central Italy (54%) from southern Italy (46%).

94% of these mothers are aged 26–45 years and 96% is of Italian nationality. Most of them have a high school certificate, 28% have a secondary school certificate and 15% have a university degree. All professions are represented, even though most of them are housewives (39%) or employees (36%).

The mothers we interviewed mainly have one (44%) or two (47%) children, mainly boys (58%) aged 6 years or older (54%). The mothers with more than one child were asked to answer in relation to the child brought to be examined by the paediatrician.

The children were aged 1–17 years (average age, 6.2). The age distribution is given in Tables 1 and 2.

Table 1 Distribution of the study population by age

Age, years	Children, n (%)	
1	15	(7)
2	20	(9)
3	11	(5)
4	27	(12)
5	27	(12)
6	34	(16)
7	8	(4)
8	19	(9)
9	20	(9)
10	13	(6)
11	5	(2)
12	12	(6)
13-17	6	(3)
Total	217	(100)

Table 2 Distribution of the study population by age class

Age, class	Children, n (%)	
0–3	46	(21)
4–5	54	(25)
6+	117	(54)
Total	217	(100)

Most of these children are attending primary school (41%), while 28% are attending kindergarten, 18% secondary school, and 2% high school. The remaining 21% (all children aged up to 3 years) remain at home with parents or relatives.

The comparison between educational level and number of children gave statistically significant results (χ^2 (4) = 16.146, p = .0028). The graduated mothers of our sample mostly have one child, while three or more children are more frequent among mothers with secondary school education. This can be easily explained. In fact, the mothers with secondary school education have in general more time available for taking care of their children since they often are not working, while it is more frequent that mothers with a university degree are working and, therefore, they cannot afford more than one child due to organisational problems. A confirmation of the above is the fact that among the freelance professional mothers with a university degree, there were none with three or more children. In this regard, the definition of pain that the mothers gave is interesting and seems linked to their educational level (p = .0266) and the number of children (p = .0053). In fact, even if a negative definition of pain was given by most of the mothers, percentage-wise, the mothers with university degrees and one child were more numerous. More than 70% of graduated mothers with one child considered pain as a threat to psychophysical health and as a decrease in their freedom. Very likely this attitude is connected to the social condition of women who perform a certain type of work (mostly they are freelance professionals) which demands regular attendance and full engagement. Generally pain, not feeling well (and also a numerous family) contrast with all that.

The first comparison made was that between the reaction of the family of origin (question 1) and the reaction of the present family of the mother (question 3) in the event of a sick relative. We expected that the present reaction would depend, in some way, on the preceding one. As a matter of fact, 94.5% of the mothers reported a positive answer to pain by the family of origin, while only 5.5% recalled a disinterested attitude. These percentages remained more or less the same as far as the reaction of the present family was concerned: 93.5% and 6.5%. Obviously, there is a relation between the reaction to pain in the two generations, a relation confirmed also by a high statistical significance (p = .0001). It is worthwhile pointing out that, when the mothers indicated an actual attitude of blame inside the family, they pointed out that such blame was coming mainly from the grandparents.

Number 2 was a memory of pain. On the basis of the answers given, we divided the episodes of pain into “physical pain”, when several infectious or traumatic pathologies were being recalled (for example, illnesses such as small pox, chicken pox, flu, mumps; surgical interventions such as tonsils or appendectomy; fractures of any kind) and “moral

pain" making reference to episodes of psychological discomfort and those relating to the loss of important people (e.g. the death of uncles, parents and grandparents). 50% of the mothers recalled an episode of physical pain and 20% an episode of moral pain. But, an element that strikes is the high percentage of "no" encountered: 31% of the mothers interviewed reported that they recalled nothing in particular and, a very interesting thing, 75% of these came from central Italy. What does this mean? Is this a feature of our sample or are the mothers coming from the South more willing to talk about their past? Or maybe, simply, the mothers coming from central Italy had less time available and "cut it short"? Or, conversely, is it a matter of diffidence? For the time being, we may just make hypotheses, since our research tells us nothing in this regard, but these aspects could be probed into.

One of the interests of our research was to ascertain whether there was relation between the type of painful memory (physical or moral) reported by the mother and the place of residence. An analysis of the answers showed a statistically significant relation ($\chi^2(2) = 22{,}857$, $p = .0001$) among the above variables.

While the episodes of physical pain are exactly divided between central Italy and southern Italy in the sense that 50% is reported by mothers of central Italy and 50% by those in the south, other is the distribution of the memories of episodes of moral pain (Fig. 2). In fact, 71% of these are reported by mothers in the South. Obviously, we are not at all surprised by the fact that memories of psychological discomfort or memories linked to the loss of important people are more common among mothers coming from the South. The explanation lies in the different sociocultural environment in which these mothers were raised. The tradition of culture and values in the South is substantially different from that of the centre [12]. Historically, the South always was the area of Italy with stronger family traditions, maybe since there have always been few work opportunities and the state of need gets people closer to one another and increases solidarity: all united together against adverse destiny. Times have changed, but some values remained very strong, first of all the family ones and, therefore, the value of solidarity [13]. When one in southern Italy speaks of family, one refers not only to brothers, sisters and parents, but also uncles, aunts, cousins and several different friends [14]. At the same time, the condition of need, in addition to uniting relatives, influences also the concept as well as the reaction of these people to painful events. When one speaks of pain, for the mothers from the South this almost always means moral pain, because the family and their loved ones are very important. A pain of a physical type acquires little importance with respect to the loss of a loved one and is addressed also with greater ease. The environment in which these mothers grew up taught them to be practical women, who must contribute in an active manner to the management of the house: things must be done in any event, irrespective of whether one is feeling fine or is not feeling well [15]. Therefore, physical pain is handled with a substantial serenity, since sooner or later it will go away.

In order to complete the analysis on the type of painful memory, we compared it with the educational background of the mother. We found, also in this case, very meaningful data ($p = .0052$) (Fig. 3).

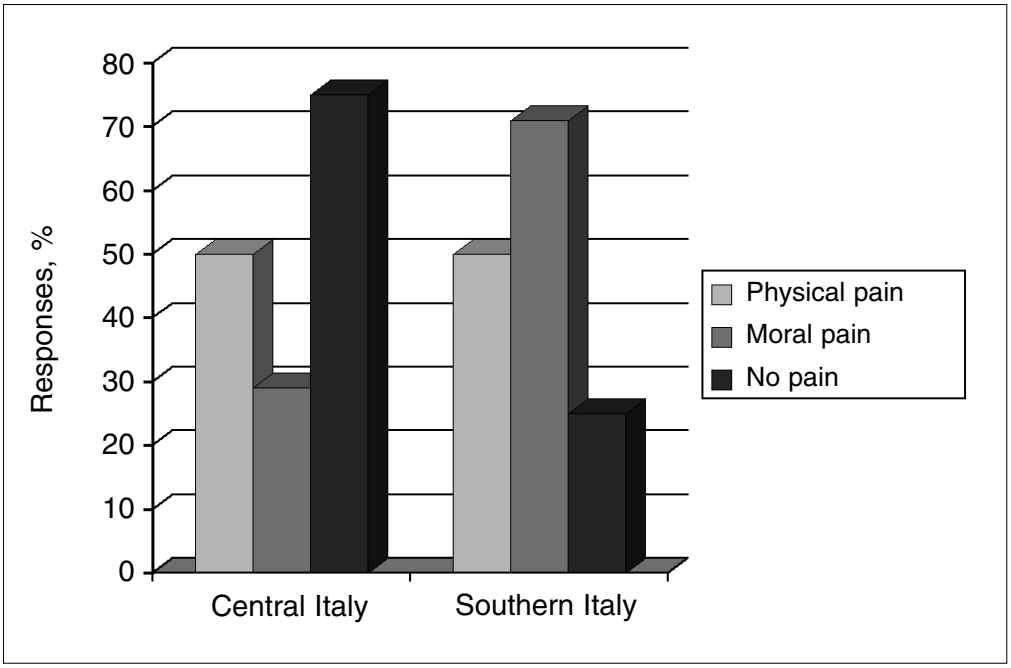

Fig. 2 Relationship between mother's residence and memory of event

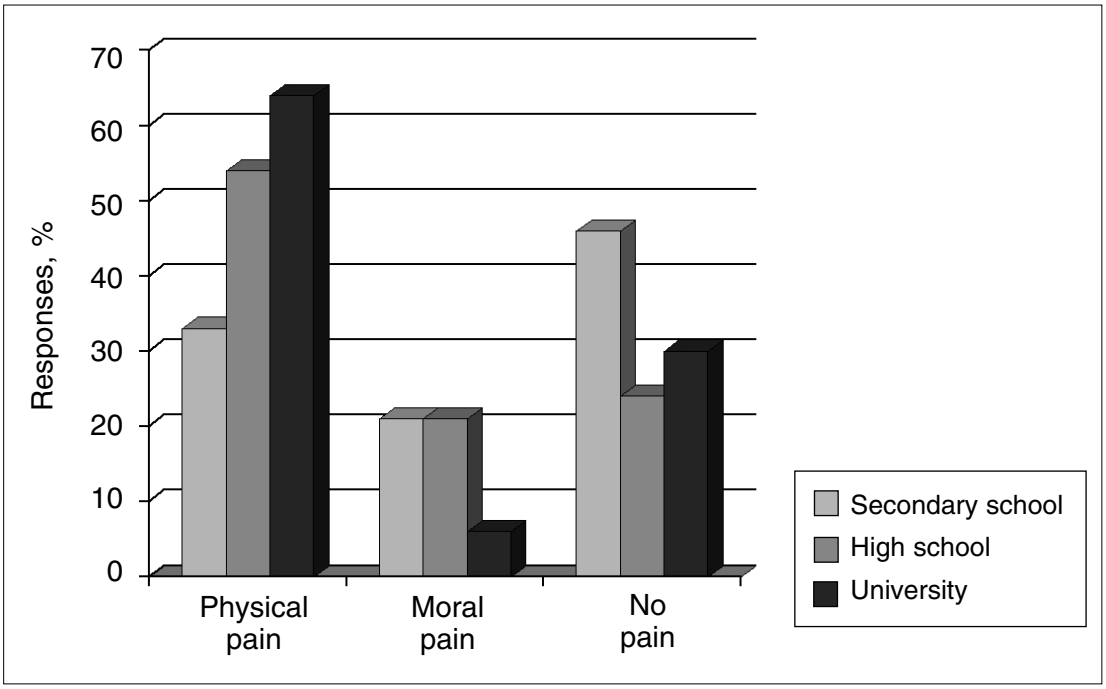

Fig. 3 Relationship between memory of event and mother's educational level

A painful memory of a physical type is characteristic of graduated mothers who, only in 6% of the events, reported pain of a moral type. The mothers with secondary school and high school certificates, conversely, reported painful episodes of both types, it being understood that those of physical pain were more frequent. As a matter of fact (see answers to question no. 4), those mothers in possession of a university degree considered pain a threat to their psychophysical health and a limitation to their freedom. These mothers are, most of all, freelance professionals, whose work requires a total commitment as well as a constant presence [16]. Not feeling well in the physical sense of this term generally contrasts with all this much more than a pain of a moral or psychological type. This does not mean that a moral pain does not entail some type of discomfort, but it is undoubtedly a discomfort that may be managed easily and is less disabling than a physical pain. Therefore, when one asks them to recall a certain painful event, the interpretation of the term "painful" is in the physical sense. Pain is a social event that culture, in certain cases, removes or hides.

The definition (question 4) that the interviewed mothers gave to pain was essentially a negative one (62%). Pain is experienced as a threat to their psychophysical health and as a limitation to their freedom. Only 13% considered pain a temporary feeling, while the remaining 25% lived with it with unease.

But how does our sample react to pain (question 5)? How does it behave? Basically, there are two ways of behaving: either one controls oneself, tries to think of something else and pretends that nothing happened, waiting that it goes away (personal reaction) or, conversely one complains and asks for help (reaction addressed to the outside). As far as our mothers were concerned, there was practically a division by half between those who expressed their pain openly (55%) and those who did not express it at all (45%). A clue for further probing into the subject may come from the observation of the fact that, when mothers indicated to react to pain by asking for help, the first request was never addressed to figures of the medical compartment, but rather to brothers, sisters, parents or friends.

The data analysed so far concerned the mother, but our questionnaire also provided questions relating to the child. Number 6 asked what strategies a child used for coping with pain: the answers pointed out that 67% of the children look for their parents or ask to be told a tale. These children, in other words, look for a contact with others. The remaining 33% conversely, watch TV, play by themselves and do nothing in particular: this type of strategy may be defined a "solitary" one. Basically (83%), according to the mothers, these strategies remain the same also when the parents are absent (question 7). A conception of pain and the particular reaction to this by the mother are statistically not important for predicting the strategies adopted by a sick child.

A child who is not well, in 87% of the cases, expresses his discomfort (question 9) by looking for help, complaining and crying. Only in 13% of the cases the child remains silent and keeps quiet. These expressive behaviours of a child, whether external or internal, statistically depend on the strategy adopted by the child for coping with pain (χ^2 (1) = 16,357, $p < .0001$). 72% of children who expressed pain,

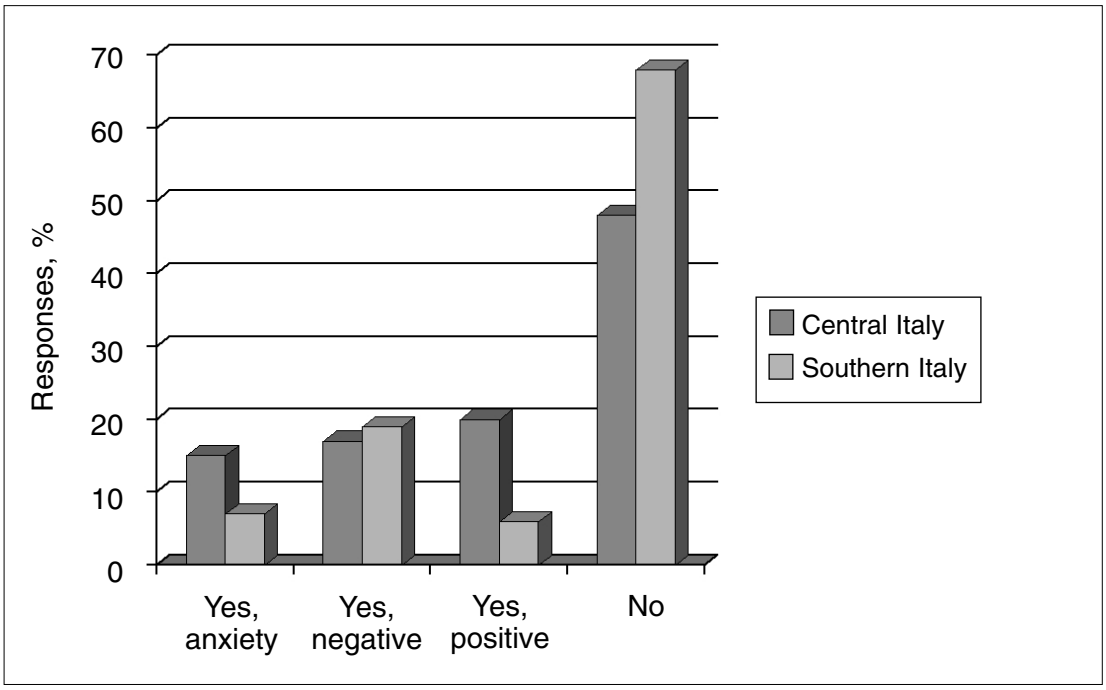

Fig. 4 Relation between mother's residence and changed family relationships

looked for help or complained (external reaction) adopted an external modality also as far as the strategy used is concerned (looked for their parents or asked to be told a tale), while 66% of the children who used an "internal" modality of expression (remaining, for example, by themselves), adopted a lonely strategy (watched TV, played or did nothing in particular).

It is important to underline also the relationship ($p < .05$) ascertained between the way a child expressed his being ill and the reaction of his mother to pain. 91% of the mothers who asked for help and were upset when in pain (modalities of external reaction), have children who when they are ill, look for help and cry (external modality of expression).

The strategies used by the children are the same (82%) also in absence of the parents (question 9). Mothers know this since, in their absence, they entrust their children to close relatives (typically grandparents, 89%), who tell them in detail the daily life of the child who, *inter alia*, due to the close degree of relation, know very well since they often spend time with him/her. By the last question we wished to evaluate the influence of the painful event on family relationships. It seems that the relationships do not change in 57% of the cases, while, conversely, change in 43% of the families of our sample. When it occurs, the modification seems to be either an improvement (13%) or a worsening and, in this case either due to an increase in the mother's anxiety (12%) or an increase in tension in general (18%).

The relation of this variable changed relationships in the family, with the place of residence of the mothers is significant (p=.002) (Fig. 4).

It is in the South that family relationships remain mainly unchanged (68%) on the occasion of the illness of the child, while in the Centre they improve more easily (20%). They worsen in the sense of greater general nervousness in the same extent, both in central Italy and southern Italy. Furthermore, mothers in central Italy seem to be more anxious (15%) on the occasion of the illness of a child.

Furthermore, it seems (χ^2 (3) = 8.08, $p < .05$) that the children who use a solitary strategy, i.e. who watch TV or do nothing in particular when they are sick, promote a maintenance of the quality of the relationships inside the family (70%) reducing, consequently the possibility of a change, both in positive and negative senses.

Discussion

The mothers of our research considered pain a substantially negative experience to which they reacted in a different manner, either experiencing it in a fully personal and private manner, awaiting for it to go away, or living it socially, asking others for help. An important element is that the demand for help is mainly addressed to relatives and friends and, only in the last instance, to a doctor [17]. On the other hand, several studies show that 70%–90% of all episodes of illness are handled outside medical structures, remaining inside the family throughout the life cycle [18, 19]. Other studies on the behaviour relating to health show that, when people

believe that they are sick, they look for the legitimisation of their symptoms with others. Legitimisation is a social process directed and modelled by habits, roles and rules of the society where the sick person is living [20].

Mothers coming from central Italy were less willing to tell of their painful experiences than the others do. Those same mothers reported that their children generally express and react to pain addressing themselves to the parents and asking them to cuddle them. However, the most important result of this research is the confirmation of a generational influence in the way of expressing and living pain [21]. The way in which the family of origin of the mother reacted to the illness of one of its members is connected to the reaction of the present family of the mother towards the illness of one of its members. There is identity on the type of reaction of the two generations. On the other hand, the hypothesis of the behavioural pattern in the vicarious learning (modelling) received several confirmations [22, 23].

In the same way, the reaction that a mother has before pain influences the manner in which her child behaves and expresses in case of pain: the child, whose mother deals with pain by asking for outside help, will look in his turn for external remedies to his pain, addressing his needs to his parents. Several studies suggest that the definitions of the symptoms and modalities of use of medical resources are acquired inside the family, and the ability of a child to recognise and define the symptoms is acquired by the members of the family who supply the initial definitions of the illness and teach him to answer the various symptoms selectively. The parents, in particular the mother, not only play an important role in teaching a child when to respond to the symptoms of an illness, but also teach him how to respond to those symptoms [24, 25].

A positive element is that the illness of the child hardly modifies the interpersonal relationships within the family. Our data are just a preliminary contribution to understanding a child's response to pain. Not only through his experience but his mother's, in what Engels [26] proposed as biopsychosocial perspective. A biopsychosocial perspective of pain, in the framework of which our work was born, theorises a complex interaction among biological, psychological and social variables [27]. Now, the instruments used for evaluating the variables considered do not always supply data that may be analysed directly in a qualitative manner. This does not mean that starting from a quantitative analysis of the answers obtained, qualitatively valid conclusions cannot be worked out. For example, the fact that it was ascertained that a painful memory of a moral type is percentage-wise characteristic of southern women could seem a purposeless result, but it is not so. In fact, the origin from regions in southern Italy carries with it a quantity of information (for example, the characteristic culture of those regions) in the light of which, those which could appear conclusions based on mere assumptions, take a broader and qualitatively valid meaning [28]. The data collected are meaningful, but must be confirmed by further studies with more patients and more variables.

Once again it appeared that a child's reaction to pain depends not only on the manner in which his mother reacts to pain but above all, the way in which his mother experienced pain within her family [29]. Therefore, to better understand the reaction of a child to pain, a deep relationship with the mother's figure, and an investigation of the personal life experience of pain of the mother are necessary.

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