THE "QUESTIONNAIRE OF THE DIFFERENCE IMAGINARY BABY VS. REAL BABY": A NEW INSTRUMENT FOR THE EVALUATION OF DIFFERENCES BETWEEN PRENATAL AND POSTNATAL MATERNAL PERCEPTIONS AFTER DELIVERY.

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INTRODUCTION

Fantasmatic baby, imaginary baby and the real baby are important concepts for the understanding of the psychological life of pregnant women as of newly mothers.

GOAL

To present a new psychometric instrument for the assessment of the difference between imaginary baby and real baby by the first days after delivery.

METHOD

Generation of 30 items about the difference between imaginary baby and real baby related to five main areas of newborns' life: feeding, sleeping, interaction, baby characteristics and temperament.

PARTICIPANTS

The "Questionnaire of the Difference Imaginary Baby vs. Real Baby" (QDIBRB) was applied to a sample (N = 190) of newly mothers at Maternidade Dr. Alfredo da Costa in Lisbon.

RESULTS

After a series of factorial analysis, Equamax rotation with extraction forced to 4 factors (explaining 52.7% of total variance) provided 3 factors about differences between maternal prenatal and postnatal perceptions on the following areas: F1 - babies' positive emotional expressions (α = .881),

F2 - maternal fears related with babies' behavioral meaning (α = .850) and F3 - babies' appealing behavior (α = .783). For the complete scale internal consistency is excellent (α = .921).

CONCLUSION

The QDIBRB seems to be able to assess differences between the imaginary baby and the real baby in a psychometric way. Future research is needed to show if data collected with QDIBRB are useful in the world of perinatal psychology.

INTRODUCTION

In a historical paper, Serge Lebovici (1988) clearly differentiated the different "babies" that can dwell inside a mother's psychological life. In Lebovici words <<The "fantasmatic" infant is the one who is born early in a mother's life, when she still identifies herself with her own mother.>> Quite different is the "imaginary" one, <<(…) the baby of the desire for pregnancy, that of the interaction between fetus and mother.>> This way, Lebovici (1988) stands that during gestation the human baby allows the development of two functions in the psychological life of the mother. The first of these functions is the possibility to experience the "fantasmatic child" overall characterized by the conflicts of the inner world of the mother. The second one is the "imaginary child" resulting from the mother's thoughts mostly of the preconscious kind.

After childbirth the reality principle introduces a completely different baby to the new mother. According to Lebovici (1988), the woman that has just arrived from delivery <<(…) must confront the baby (…)>> she is taking care and this confrontation is to be performed at several levels of consciousness, namely the unconscious and the preconscious ones.

According to the author, these aspects are basic for the development of the mother's capacity to fantasize about her baby as well as for the development of the baby's representation of the relational object. In Lebovici's (1988) words, it is the <<(…) reactivation of traces of pleasure, linked to the experience of satisfaction of needs (…)>> that turns possible the representation of the object.

Since Harlow's (1958) works on "wire mothers" and "clothed mothers", the satisfaction of needs seen as critical for the baby's psychological organization couldn't be exclusively watched as the satisfaction of the need for food or other basic biological conditions. The need for a warm contact with the caregiver opened a new window about a much more complex human newborn as it was presented by Bowlby (1958) when the knowledge about ethology was integrated in human attachment research. Nevertheless the understanding about the interaction between the mother and the baby was still dedicated to interactions that would start by the first moments of extra-uterine life.

Nowadays, it is no longer possible to restrain the importance of the mother-baby relationship to the period beginning at childbirth. Scientific research of the last decades evidenced several aspects of fetal life that probably are related with prenatal psychological organization: a) prenatal behavior (De Vries & Fong, 2006), b) fetus' behavioral intentionality (Zoia et al., 2007), c) fetal brain processing of maternal speech (Jardri et al., 2012) and d) prenatal emotional life (Campbell, 2002; Walusinzski et al., 2005; Singh, 2010). In this domain, particularly important are evidences pointing to the occurrence of mother-fetus dialogues (Marx & Nagy, 2015).

Due to the possibility that behavioral dialogues are happening between mother and baby during prenatal times it also becomes possible that fantasmatic interactions (Lebovici, 1995) taking place at gestation are at least influenced by fetal behavior. That is probably the best answer to the old questions about the psychological development of pregnant women. According to Bibring's proposal (Bibring, 1959; Bibring et al., 1961-a; Bibring et al., 1961-b) the psychological elaboration of the pregnant woman undergoes several qualitative changes along gestation. This evolution acts as a preparing for the confrontation of the future mother with tasks related to obstetrical demands, par-

turition, childbirth and the relationship with the baby. These developmental stages tend to be roughly articulated with the three trimesters of pregnancy. At the first trimester, the core of the psychic concern seems to be related with the re-evaluation of the feminine identity; implying a revival of childhood's aspects of mother-daughter relationships. By the second trimester the core of the psychic concern changes from the past to the present and mother's psychological elaboration changes from the relationship with her mother to the relationship with the father of the future baby. Finally, according to Colman and Colman (1971), at the third trimester, the core of the psychic concern changes from the present to the future which is to say the relationship of the future mother with the future baby fulfills most of the mother's psychological space dedicated to pregnancy.

The classical doubt about this evolution is to know which stimuli are so powerful that can push expectant mothers from the elaboration of the first trimester into the elaboration of the second trimester and, after that, from the elaboration of the second trimester into the elaboration of the third trimester? For the first transition, we should quote the powerful description of Colman and Colman (1971) relatively to the beginning of maternal perception about fetal movements. For the second transition, we should underline the observation that by the last trimester of gestation expectant mothers become aware that fetal behavior is no longer unpredictable (Einspieler, Prayer & Prechtl, 2012); on the contrary, pregnant women become able to predict outbreaks of fetal behavior integrated in well-defined timetables or as reactions to specific conditions.

So, at the beginning of pregnancy, probably, the fantasmatic infant plays a dominant role while by the end of pregnancy the imaginary baby takes the stage of the future mother's inner world.

Of course, this evolution is not mechanical and many variations are supposed to happen according to different circumstances namely the obstetrical ones. For example, when medical risks are identified relatively to fetal life or to mother's health, the so called "stand-by reaction" (Justo, 2014) may settle down and the psychological development of the pregnant woman may be suspended. In these circumstances it is possible that the imaginary baby is compelled to vanish from his mother's thoughts while the fantasmatic infant becomes stronger attracting his mother's fears, doubts and negative expectations. This is particularly probable in cases where uterine preterm contractions signal the eminence of a preterm delivery. The sooner these clinical conditions lead to hospital admission the earlier the imaginary baby will suffer the consequences of maternal reluctance to go on with the processing of fetal communication; a processing that would enable the expectant mother to build an imaginary healthy baby capable of struggling to be born and to confront himself with the many adverse conditions of postnatal life.

As a healthy gestation develops until the childbirth of a healthy baby we generally expect that the imaginary baby resulting from that pregnancy is resilient enough to adapt to communication displayed by the real baby after birth. In this sense, the difference between maternal prenatal and postnatal perceptions about the baby shouldn't be so high as to pose a problem to most of the newly mothers. On the contrary, when clinical conditions prevented pregnant women to slowly elaborate about fetal communication and to build a positive and realistic perception of the baby as childbirth becomes near, we fear that the difference between maternal prenatal and postnatal perceptions will pose difficulties of all kinds; necessarily, mother-infant interaction will undergo vicissitudes that won't be helpful at the first moments of postnatal life.

THE NEED FOR AN INSTRUMENT TO ASSESS THE DIFFERENCE BETWEEN IMAGINARY BABY AND REAL BABY

Human newborns start their lives in clinical conditions which may be very different. Some of these clinical conditions are highly problematic in what respects to health prognosis. Because maternal perceptions probably reflect the severity of these conditions and especially because moth-

ers are the most complete support that these babies can find in the context of interactions with health professionals and institutions, we think it would be extremely important to assess mothers' perceptions about the difference between the imaginary baby and the real baby. In this domain, it would be particularly important to assess newly mothers' perceptions, this is, as soon as possible after the birth of the newborn. For the perception about the imaginary baby, it would be interesting to ask mothers about what they used to expect (prenatally) relatively to their babies (postnatally). About the perception of the real baby, it would be interesting to ask mothers about the way they see their babies now that they are starting their extra-uterine lives.

METHODOLOGY

In the context of their Master Thesis in Psychology, the first three authors (Chagas, 2014; Maltez, 2015; Miranda, 2014) produced items related with differences between, on one hand, mothers' memories about their prenatal fantasies relatively to their future babies and, on the other hand, postnatal mothers' perceptions about their babies. After the debate around those items, it was decided to keep 30 items related to five main areas of newborns' life: feeding (3 items), sleeping (3 items), interaction (10 items), baby characteristics (6 items) and temperament (8 items). Items were generated as statements related to maternal perceptions common in this particular moment of life, like: "Before delivering my baby, I thought that he would be easier to fall asleep". Mothers' answers to these statements were recorded in Likert scales with six degrees ranging from 0 (I completely disagree) to 5 (I completely agree). Higher scores always corresponded to a higher discrepancy between the imaginary baby and the real baby.

The questionnaire with the final 30 items, now named "Questionário da Diferença Bebé Imaginário vs. Bebé Real" (Questionnaire of the Difference Imaginary Baby vs. Real Baby, QDIBRB), was applied to a sample of newly mothers at the mother's wards of Maternidade Dr. Alfredo da Costa in Lisbon. Because these applications were made before discharge from hospital, babies were always between the first and the third day of life. As the number of adolescent mothers in these wards was limited, the questionnaire was also applied to adolescent mothers living in intuitions dedicated to adolescent motherhood. Because the babies of these adolescents were always much older than babies of mothers interviewed at the hospital, it was decided to exclude data gathered at institutions. So, from now on, all analyses will be related to data from the 190 interviews conducted at the maternity wards.

PARTICIPANTS

Most part of participants were Portuguese (85.8%), as were their partners (80%). About marital status, 94.2% were living with the baby's father, while for occupational status 73.2% were active and relatively to socioeconomic status (Graffar, 1956) 93.7% were between the medium and the superior levels. In 88.9% of the cases pregnancy had been desired, but the planning of pregnancy only happened in 63.2% of the sample while the medical surveillance of gestation took place at 99.5% of pregnancies. Vaginal delivery without anesthetics occurred in 22.1% of the sample, vaginal delivery with epidural anesthetics corresponded to 42.1%, caesarean birth with regional anesthetics was performed in 27.9% and caesarean birth with general anesthesia was performed for 7.9% of participants. Finally, there were 47.4% of male babies and 52.6% of female babies.

In Table 1, data about participants as well as about their babies and about their babies' fathers are displayed.

Table 1: Participants descriptive statistics

Variables	M	SD	min	max	asymmetry	kurtosis
mothers' age	29.45	6.81	16	44	-.17	-.87
mothers' education *	13.08	3.53	4	23	-.08	-.32
fathers' age	32.39	6.60	19	53	-.06	-.13
fathers' education *	12.30	3.47	4	23	.22	-.28
years of marital life	5.79	4.52	0	22	1.04	.67
number of children **	1.49	6.49	1	4	1.08	.56
previous pregnancies	.99	.96	0	4	.72	-.05
voluntary abortions	.02	.14	0	1	7.14	49.60
spontaneous abortions	.26	.54	0	3	2.27	5.44
abortions by medical advice	.06	.24	0	1	3.64	11.36
gestational age at birth (weeks)	38.97	1.59	34	42	-.75	1.02
weight at birth (grams)	3241.45	520.54	1800	4650	.09	-.01
length at birth (cm)	48.66	2.71	38.4	54	-.92	1.68

* number of successful years of education
** including the present baby

RESULTS

A series of principal components analyses were performed using the answers of participants relatively to the 30 items of the QDIBRB. Conditions for factorial analysis seemed to be adequate (KMO = .878; Bartlett's sphericity test, ^{2} = 2753.945, df = 435, p = .000) and anti-image values were between .670 and .951.

In a first analysis, seven factors were able to explain 64.81% of the statistical variance of the data. The first factor captured most part of the items (21 out of 30), while the fourth factor only attracted one item and eight items were not related to any factor. Using Quartimax Rotation, all items were attributable to one of the factors (F1- 16 items; F2- 4; F3- 3; F4- 2; F5- 2; F6- 2 and F7- 1 item). Because factors 4 to 7 didn't attract enough items to perform scales, we decided to perform principal component analyses with extractions forced to four factors. Equamax rotation with extraction forced to 4 factors (explaining 52.7% of total variance) seems to be the best option and its results are displayed at Table 2. Using .45 as the minimum load acceptable, four items are excluded (8, 12, 16 and 24). The fourth factor only attracts two items and so it is not possible to use it. The first three factors attract the remaining items: F1- 3, 4, 5, 10, 15, 22, 28 and 30; F2- 6, 13, 17, 18, 19, 20, 21, 25, 26 and 29; F3- 1, 2, 9, 11, 23, 27. Having in mind the content of the items, Factor 1 seems to be related with mothers' perceptions about their babies' positive emotional expressions, Factor 2 respects to maternal fears related with babies' behavioral meaning and Factor 3 is about babies' appealing behavior.

Table 2. Principal components analysis forced to 4 factors with Equamax rotation.

Items	Factor 1	Factor 2	Factor 3	Factor 4
1			.641	
2			.746	
3	.816			
4	.547			
5	.689			
6		.491		
7				.854
9			.707	
10	.651			
11			.498	
13		.534		
14				.872
15	.655			
17		.533		
18		.479		
19		.471		
20		.477		
21		.571		
22	.788			
23			.509	
25		.619		
26		.558		
27			.623	
28	.602			
29		.513		
30	.483			

Based in those three factors, the QDIBRB includes three subscales: a) babies' positive emotional expressions, b) maternal fears about behavioral meaning and c) babies' appealing behavior.

Internal consistency for subscale babies' positive emotional expressions is good (α = .881) as it is for subscale maternal fears about behavioral meaning (α = .850) while for subscale babies'

appealing behavior it is only acceptable (α = .783); using together the items selected for the three subscales, internal consistency for the complete scale is excellent (α = .921).

Descriptive statistics for the three subscales as well as for the complete scale are displayed at Table 3.

Table 3. Descriptive statistics for dimensions of the QDIBRB.

Dimensions	M	SD	min.	max.	asymmetry	kurtosis
babies' positive emotional expressions	12.97	9.51	0	40	.58	-.11
maternal fears about behavioral meaning	14.26	10.05	0	50	.60	.04
babies' appealing behavior	10.88	6.74	0	30	.21	-.58
complete scale	42.20	24.34	0	130	.48	.20

As can be seen in Table 4, dimensions of the QDIBRB correlate with each other and correlation coefficients ae always positive and significant.

Table 4. Correlations between dimensions of the QDIBRB.

Dimensions	maternal fears about behavioral meaning	babies' appealing behavior	complete scale
babies' positive emotional expressions	.675 (p =.000)	.481 (p =.000)	.853 (p =.000)
maternal fears about behavioral meaning		.613 (p =.000)	.908 (p =.000)
babies' appealing behavior			.776 (p =.000)

Some sociodemographic and clinical variables also correlate with some of the QDIBRB dimensions. Namely, mothers' education correlates negatively and significantly with: maternal fears about behavioral meaning (r = -.159, p = .032), babies' appealing behavior (r = -.246, p = .001) and complete scale (r = -.154, p = .04). Marital status correlates positively and significantly with maternal fears about behavioral meaning (r = .186, p = .012) and with complete scale (r = .150, p = .045). The number of spontaneous interruptions of pregnancy correlates with babies' appealing behavior (r = .157, p = .05). Desire for pregnancy correlates with babies' appealing behavior (r = .197, p = .007). Finally, length at birth correlates with maternal fears about behavioral meaning (r = -.244, p = 002) and with complete scale (r = -.208, p = .009). Based in these correlations, some conclusions can be assumed. First, the higher the mother's education the lower are: a) maternal fears about baby's behavioral meaning, b) maternal perceptions of differences about babies' appealing behavior and c) differences between prenatal and postnatal maternal global perceptions about the baby. Marital status seems to have an influence upon maternal perceptions because mothers living with the father of the baby have lower scores in dimensions maternal fears about behavioral meaning and complete

scale. The occurrence of spontaneous interruptions of pregnancy probably takes mothers to perceive their babies' behavior as less appealing. Possibly length at birth is perceived as a rewarding characteristic once that mothers with bigger babies have lower scores in what respects to maternal fears about babies' behavior.

CONCLUSION

According to our data, it is likely that concepts about maternal imaginary babies and real babies are possible to be assessed in psychometric ways so as to use them in empirical psychological research. Using QDIBRB with newly mothers it is possible to evaluate differences between prenatal and postnatal perceptions in four different dimensions: 1-babies' positive emotional expressions, 2-maternal fears about behavioral meaning, 3- babies' appealing behavior and 4- a global view on these three different aspects. The fact that these four dimensions present different relations with several aspects of mothers' life is promising. For example, the influence of mothers' education in the reduction of maternal fears or in the reduction of differences related to baby's appealing behavior is a good starting point for researches about the importance of education in the way mothers relate to reproduction and maternity. Something similar happens about marital status; women engaged in marital relationship have less fears about the meaning of their babies' behavior which can interpreted as a result of social support perceived inside the couple's relationship.

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