

Children of a Lesser God or Miracles?

A Psychological Study of Children Born to Mothers on Dialysis in Italy

Valentina Postorino¹, Gabriella Guzzo², Sara Ghiotto², Luigi Mazzone¹, Valentina Loi², Stefania Maxia², Simona Roggero³, Rossella Attini⁴, Antonio Piga³, Maurizio Postorino⁵, Antonello Pani², Gianfranca Cabiddu², Giorgina Barbara Piccoli².

¹ I.R.C.C.S. Children's Hospital Bambino Gesù, Child Neuropsychiatry Unit, Rome, Italy; ²GDS SIN Rene e Gravidanza; ³ Microcytaemia Unit; ⁴Obstetrics and Gynecology, University of Torino, Italy; ⁵IFC-National Research Council and Nephrology Unit, Reggio Calabria Italy

OBJECTIVES

Once considered impossible, pregnancy, albeit rare, is increasingly reported in dialysis patients.

While pregnancy-related outcomes are increasingly studied, little is known on the long-term follow-up of the “children of dialysis”.

To our knowledge, so far, available studies are targeted to physical health issues and none has investigated the psychological outcome of these children.

The present study, based on data from **all patients in dialysis in Italy having a successful pregnancy between 2000 and 2012**, aims at evaluating the emotional and behavioural profile in children and adolescents of mothers on chronic dialysis and the parental stress of their mothers compared to a group of mothers affected by a different chronic disease (i.e., mycrocytemic patients) and a group of healthy control mothers.

METHODS

The total pregnancies with live-born babies in dialysis patients in Italy between 2000-2012 were 23. Two women died (in 1 case the father completed self-reported questionnaires) 2 dissented from participation and 3 were not contacted since the children died. Therefore, during 2013 a total of 16 mothers (and one father) on dialysis were alive and assented to participate.

To have a control group with a similar burden of disease we chose to collect data from a group of women with transfusion dependent mycrocytemia (beta thalassemia and drepanocytosis) who delivered a live-born singleton in the period 2000-2013 were contacted and performed the questionnaires.

Moreover, a control group of 35 consecutive mothers age matched with the other groups, were selected from personal of hospital staff as controls for the two groups of mothers with chronic diseases.

All participants were submitted to the following psychological tools: the “Child Behavior Checklist (CBCL)”, evaluating behavioral and emotional problems of their children, and the Parental Stress Index-Short Form (PSI-SF), assessing the degree of their parental stress (1,2).

RESULTS

There were significant overall differences among the three groups on the following CBCL subscales: total problems, anxious/depressed, attention problems, affective problems, anxiety problems, pervasive developmental problems, social problems and thoughts problems.

Overall, mothers of the dialysis group were similar to the normal control group: the only statistically significant difference was recorded for pervasive developmental problems.

On the contrary, **mothers of the mycrocytemic group reported much more behavioral and emotional problems of their children as compared to mothers of the normal control group.** Furthermore, **mothers of the mycrocytemic group perceived a higher degree of their children's emotional and behavioral problems** on one of the CBCL syndrome scales and three of the DSM-oriented CBCL subscales **as compared to mothers of the dialysis group** (Tab 1).

Moreover, the results of the scales regarding the parental stress show several differences among the three groups: they are significant as for PSI total score and as long as all PSI subscales (parental distress, parent-child dysfunctional interaction and difficult child) (Tab 2).

Specifically, **mothers of the mycrocytemic group seem to experience similar level of parental stress of mothers of the normal control group, and both groups seem to perceive higher degree of parental stress as compared to mothers on dialysis.** Comparing results with published norms mothers of the mycrocytemic group and mothers of the normal control group reported levels of parental stress in the normal range. Surprisingly, mothers on dialysis seemed to perceive a degree of parental stress, again in normal range, but significantly lower as compared to mothers of the others groups. However, is worth to note that **8 out of 17 of mothers of the dialysis group reported a score of 10 or less in the defensive responding PSI sub-scale**, therefore it seems that these mothers were trying to minimize any problems, stress, or negativity in their relationship with their child answering in a defensive manner, consequently reporting lower degree of perceived parental stress as compared to the other two groups.

Tab 1. Child Behavior Checklist (CBCL)

		Dialysis Mothers	Mycrocytemic Mothers	Normal Control Mothers	P
1	Internalizing Problems	48.0(39.50-60.50)	56.0(48.00-63.00)	50.0(37.00-58.00)**	NS
1	Externalizing Problems	47.0(41.50-51.00)	49.0(44.00-56.00)	49.0(37.00-56.00)	NS
1	Total Problems	48.5(39.25-57.25)	53.0(46.00-58.00)	40.0(36.00-54.00)**	.031
1	Anxious/Depressed	50.0(50.00-59.75)	54.0(51.00-63.00)*	51.0(50.00-57.00)**	.010
1	Somatic Complaints	53.0(50.00-60.75)	57.0(53.00-62.00)	53.0(50.00-59.00)	NS
1	Withdrawn/Depressed	51.0(50.00-61.25)	51.0(50.00-58.00)	50.0(50.00-54.00)	NS
1	Attention Problems	51.0(50.00-59.75)	52.0(50.00-57.50)	51.0(50.00-57.00)**	.023
1	Aggressive Behavior	50.0(50.0-53.75)	51.0(50.00-57.00)	51.0(50.00-55.00)	NS
1	Affective Problems	50.0(50.00-52.00)	52.0(51.00-63.00)*	50.0(50.00-54.00)**	.001
1	Anxiety Problems	50.0(50.00-60.00)	59.0(51.68.00)*	51.0(50.00-58.00)**	.009
1	ADHD Problems	50.5(50.00-55.75)	51.0(50.00-60.00)	50.0(50.00-52.00)	NS
1	Oppositional Defiant Problems	51.5(50.00-54.25)	51.0(50.00-55.00)	51.0(50.00-52.00)	NS
2	Emotionally Reactive	50.5(50.00-56.00)	50.0(50.00-55.00)	50.0(50.00-50.75)	NS
2	Sleep Problems	54.5(50.00-60.25)	53.0(50.50-59.00)	52.5(50.00-63.50)	NS
2	Pervasive Developmental Problems	56.0(50.75-60.75)***	50.0(50.00-54.00)*	50.0(44.25-50.00)**	.005
3	Social Problems	51.0(50.00-61.50)	53.5(51.00-61.25)	51.0(50.00-54.00)**	.035
3	Thoughts Problems	50.5(50.00-53.50)	52.0(50.00-64.00)	50.0(50.00-51.00)**	.031
3	Rule Breaking Behavior	51.0(50.0-55.50)	50.5(50.00-52.25)	50.0(50.00-51.00)	NS
3	Somatic Problems	50.0(50.00-51.50)	56.0(50.00-56.00)	50.0(50.00-56.00)	NS
3	Conduct Problems	50.5(50.00-55.25)	50.0(50.00-53.25)	50.0(50.00-51.00)	NS

1. CBCL subscales shared by both checklist forms (1½-5 and 6-18)
2. CBCL subscales specific of CBCL 1½-5
3. CBCL subscales specific of CBCL 6-18

*MW: Mycrocytemic group vs Dialysis group significant P<.05;
**MW: Mycrocytemic group vs Normal control group significant P<.05;
*** MW: Dialysis group vs Normal control group significant P<.05;

Tab. 2 Parent Stress Index-Short Form(PSI-SF)

	Dialysis Mothers	Mycrocytemic Mothers	Normal Control Mothers	P
Parental Distress	10.0 (3.00-30.00)	50.0 (35.00-70.00)*	50.0 (35.00-60.00)**	<.001
Parent Child Dysfunctional Interaction	10.0 (5.00-35.00)	50.0 (31.25-70.00)*	50.0 (35.00-55.00)**	.002
Difficult Child	20.0 (5.50-35.00)	50.0 (35.00-65.00)*	45.0 (30.00-55.00)**	<.001
Total Score	10.0 (1.00-27.50)	47.5 (21.25-70.00)*	45.0 (30.00-50.00)**	.007

CONCLUSIONS

Although having a baby on dialysis is a continuous challenge, our results highlight that the psychological outcome of the children and adolescents of mothers on chronic dialysis is usually normal. Furthermore, these data are reinforced by the average level of parental stress reported by on-dialysis mothers. In such a context, psychological support for mothers on dialysis, may help corroborate this “medical miracle”.

REFERENCES:

- Achenbach TM, Rescorla LA: Manual for the ASEBA School-Age Forms & Profiles. Burlington, VT: University of Vermont, Research Center for Children, Youth, & Families, 2001.
- Guarino A, Di Blasio P, D'Alessio M, Camisasca E, Serantoni G: Parenting Stress Index - Forma breve. Giu Organizzazioni Speciali, Firenze, 2008.

