DETERMINANTS OF REFUSALS IN A FOLLOW-UP EVALUATION OF A PORTUGUESE BIRTH COHORT

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BACKGROUND AND OBJECTIVE

Epidemiologic studies with low levels of participation are more vulnerable to bias and non-randomly missed participants pose special challenges to follow-up studies.

The impact of bias is rarely quantified because differences between participants and non-participants are usually unknown due the character of the non-response problem. Non-participants probably differ in many important aspects, and it is crucial to identify these differences in order to interpret results correctly.

On western societies on-respondents are more likely to be young, single, less educated, and more prone to unhealthy lifestyles. However, participation determinants might differ across societies and cultural backgrounds.

Participation rates in cohort studies are decreasing during the last decades threatening study validity. It is specially important to know who refuse more often in order to reduce bias.

The objective of this study was to describe some socio-demographic characteristics associated with refusals in a Portuguese birth cohort, at the fourth year of evaluation.

METHODS

The cohort *Generation XXI* (Geração XXI)
This birth cohort was assembled between 2005 and 2006 and the participants was recruited in 5 public maternities of Porto Metropolitan area.
Inclusion criteria:
• Women delivered a live born child with more than 23 gestational weeks;
Residence in one of six municipalities

Re-assessment of the cohort at 6 (n=1555), 15 (n=1043) and 24(n=855) months for sub-samples and 4 years for the entire cohort evaluated.
Refusals were compared with evaluated participants considering baseline maternal characteristics (age, marital status, education, working condition, income, gravidity, tobacco consumption, type of delivery, local of residence and attending previous follow-up).
Odds ratios (OR), and 95% confidence intervals (95%CI) were estimated by logistic regression to evaluate the magnitude of the associations.

RESULTS

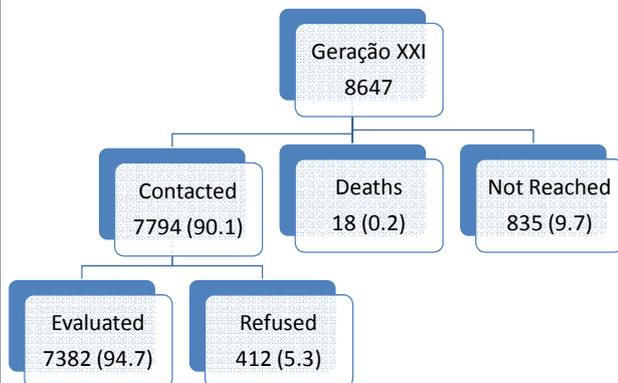**Figure 1: Participation Geração XXI at 4 years follow-up**

Table 1: Association between socio-demographic characteristics and refusals

	n Contacted (%)	n Refusals(%)	Crude OR	Adjusted OR*
Maternal Age				
≤20 Years	541 (6.9)	57 (10.5)	2.23 (1.66-3.00)	1.94 (1.40-2.70)
21-34 Years	6287 (80.7)	315 (5.0)	1	1
≥35 Years	966 (12.4)	40 (4.1)	0.82 (0.56-1.15)	0.81 (0.57-1.14)
Maternal Education				
≤9 years	3747 (48.1)	231 (6.2)	1.45 (1.12-1.87)	1.35 (1.04-1.76)
10-12 years	2086 (26.8)	96 (4.6)	1.06 (0.79-1.44)	1.05 (0.78-1.43)
≥13 years	1961 (25.2)	85 (4.3)	1	1
Maternal Working condition**				
Employed	5585 (72.5)	265 (3.4)	1	1
Unemployed	1416 (18.4)	96 (6.8)	1.46 (1.15-1.86)	1.38 (1.09-1.77)
Housewife	418 (5.4)	34 (8.1)	1.78 (1.23-2.58)	1.65 (1.13-2.40)
Other condition***	283 (3.7)	13 (4.6)	0.97 (0.55-1.71)	0.88 (0.50-1.57)
Residence				
Porto	920 (11.8)	71 (7.7)	1.36 (1.09-1.70)	1.13 (1.00-1.28)
Other	6874 (88.2)	341 (4.4)	1	1
Attended previous follow-up				
No	4680 (60.1)	309 (6.6)	2.07 (1.65-2.60)	1.97 (1.57-2.48)
Yes	3114 (39.9)	103 (3.3)	1	1

* Adjusted to previous follow-up, residence, working situation, education and age
** Missing information for 92 participants
***Other condition: student, working student, looking for first job, attend training course, disabled permanently to work and retired

CONCLUSIONS

Mothers who have been previously evaluated were more prone to participate. Younger mothers, less educated, housewives, unemployed and those women living in Porto, tend to refuse more often.

A regular contact with participants seems important to reduce refusals and it might overcome effects of social economic condition that increase attrition.