Factors associated with early retention of cats in a UK longitudinal study

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Bristol Cats

Summary

The Bristol Cats Study (BCS) is a longitudinal study of UK pet cats. None of the cat characteristics tested were associated with drop out up from the BCS up to age 18 months. However, drop out was more likely for cats with owners:

- With an annual household income of <£30,000
- With children in the household <16 years old
- Aged <45 years
- Without a degree

This can help longitudinal studies to target their retention strategies

Introduction

The Bristol Cats Study is a longitudinal study of UK pet cats which investigates their health, behaviour and environment through data including owner-reported questionnaires at specific cat ages.

Longitudinal studies are prone to drop out which can introduce bias[1]

The aim of this study was to investigate whether specific owner and/or cat factors were associated with drop out from the BCS up to age 18 months.

Materials and Methods

Cats who died or went missing prior to questionnaire four (Q4; age 18 months) and those with unknown participation status at Q4 were excluded from analysis (Fig. 1).

Cats with questionnaire one (Q1; age 12-16 weeks) and Q4 (or any subsequent questionnaire) completed were classified as retained.

Reasons for drop out were identified (Fig. 2.)

Multivariable logistic regression models were used to test for associations between the following variables and drop out:

Definition of drop out: cats lost to follow up, excluding deceased & missing cats

Household:
- Income
- Qualifications
- Tenure
- Age of owner
- Presence of children
- Presence of other cats

Cat:
- Source
- Sex
- Breed

Results

Figure 1: Number of cats excluded from and included in this study

Enrolment n=2196

Unknown participation n=227

Deceased n=97

Missing n=12

Excluded from study

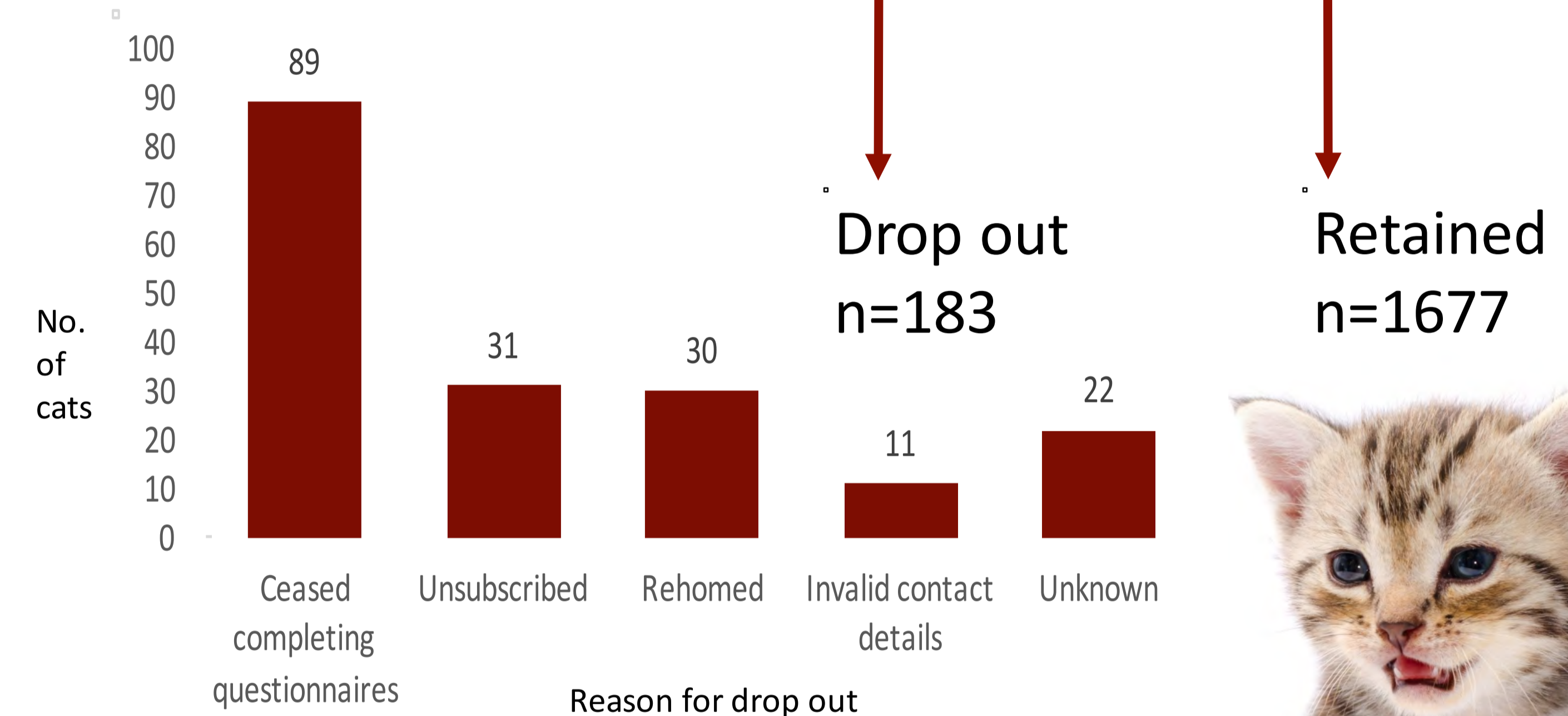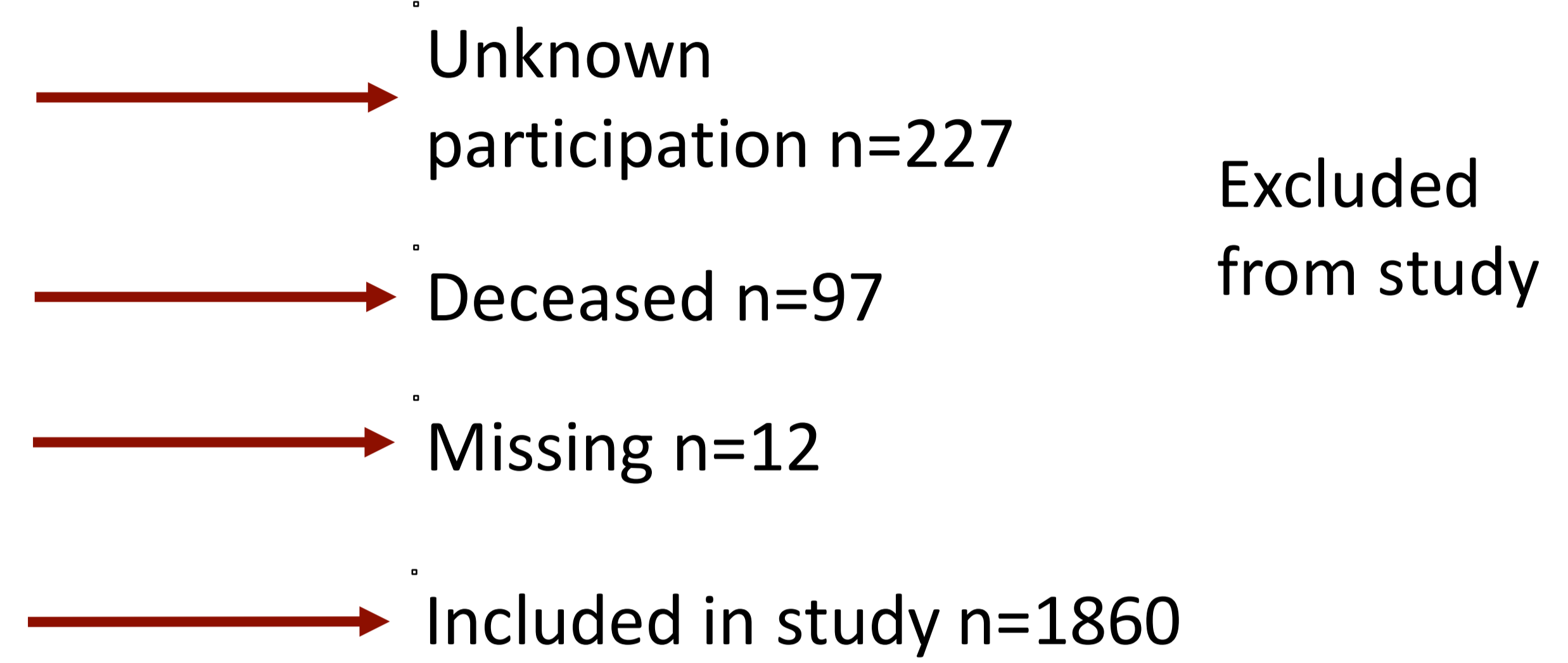Included in study n=1860

Drop out n=183

Retained n=1677

Figure 2: Reasons for drop out from the BCS up to 18 months

Multivariable analysis

Table 1: Multivariable logistic regression model: Risk factors for drop out from the BCS up to 18 months

Variable	Drop out n (%)	Retained n (%)	p-Value	OR (95% Confidence Interval)
Annual household income				
£30,000 or more	60 (7)	835 (93)	<0.001	1.00
Less than £30,000	96 (14)	609 (86)		1.97 (1.38-2.82)
Age of owner				
45 years or more	35 (6)	555 (94)	<0.001	1.00
Less than 45 years	121 (12)	889 (88)		1.98 (1.33-2.96)
Children <16 years old in household				
No	95 (8)	1072 (92)	0.004	1.00
Yes	61 (14)	372 (86)		1.67 (1.18-2.38)
Highest household level of education				
Degree or postgraduate	92 (8)	1058 (92)	0.023	1.00
None, GSCE or A level	64 (14)	386 (86)		1.52 (1.06-2.18)

Discussion

The associations identified (table 1) can help researchers setting up and running longitudinal studies to target their retention strategies.

Retention bias relating to the cat characteristics tested is unlikely to have influenced results based on BCS data up to age 18 months

References:
1. Wolke, D., Waylen, A., Samara, M., Steer, C., Goodman, R., Ford, T. and Lamberts, K. (2009) Selective drop-out in longitudinal studies and non-biased prediction of behaviour disorders. *The British Journal of Psychiatry.* **195**, 249-256.

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