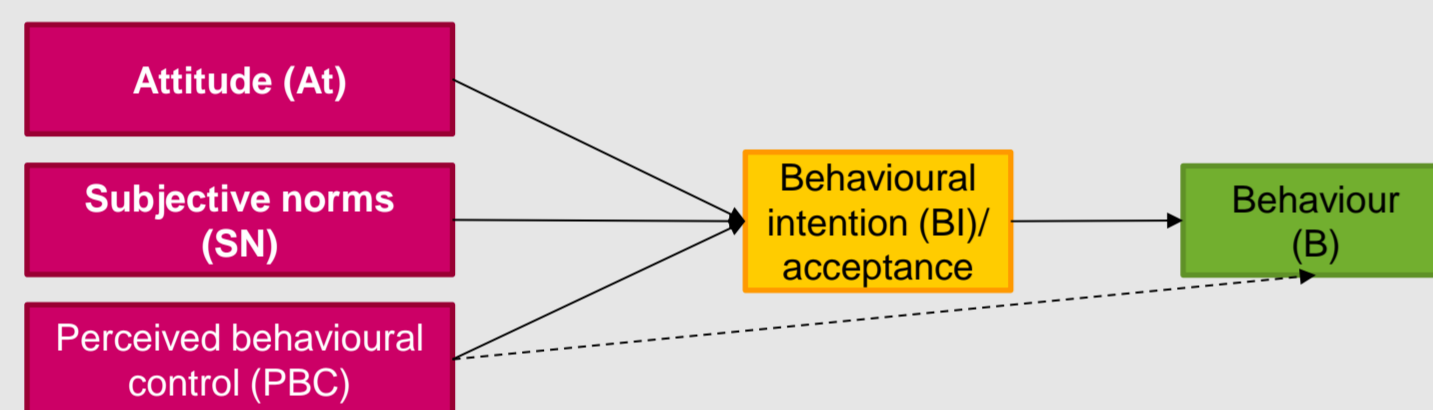


# Factors affecting cancer survivors' acceptance of electronic patient reported outcome measures (e-PROMs)

Saja AL-RAYES (ml08saar@Leeds.ac.uk), Supervisors: Jeremy C WYATT, Maureen TWIDDY and Susan CLAMP

## RESEARCH BACKGROUND

- ❖ **Electronic patient reported outcome measures (e-PROMs)** have been introduced to enhance patients-physicians communication and to help clinicians to understand how well somebody is doing, e.g. if there are any physical or psychosocial difficulties after treatment.
- ❖ Previous research, showed that not all cancer survivors are interested in using e-PROMs and some have limited interest in completing the measures electronically [1].
- ❖ To help clinicians to motivate patients to use e-PROMs, they should understand the barriers which hinder acceptance and usage by applying psychological theories [2].
- ❖ **The Theory of Planned Behaviour (TPB)** has been selected to explain the e-PROMs acceptance in this study context [3].



- ❖ In addition, the e-PROM development studies found that **computer anxiety (CA)** and **patient characteristic factors** might associate with the e-PROM acceptance [4].

## STUDY OBJECTIVE

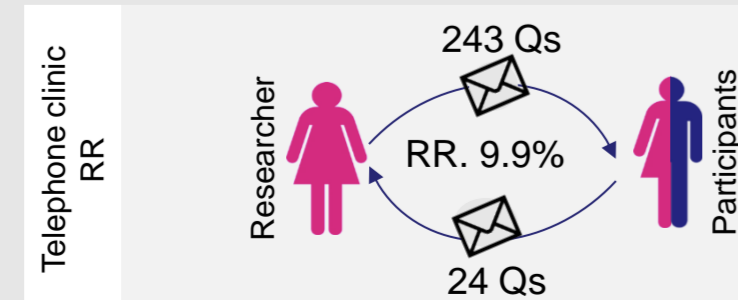
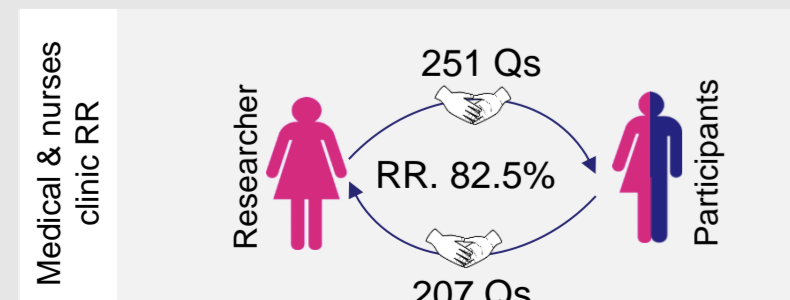
- ❖ To understand the factors influencing patient's acceptance toward using e-PROMs.

## METHODOLOGY

**Study design and setting:** a cross-sectional survey study of patients who attended Long Term Follow-Up (LTFU) Clinic, an Oncology clinic in St. James's University Hospital in Leeds.

**Participants:** the participants of this study were cancer survivors treated in the LTFU clinic. Those groups are the young adult survivors of childhood cancer and survivors of childhood illnesses requiring chemotherapy and bone marrow transplants. They have yearly LTFU appointments, either by telephone, or at the clinic, depending on patient circumstances and needs.

**Recruitment:** participants were accessed and recruited through the clinic during May-November 2014. Questionnaire was given either to patients directly (for medical and nurses clinic) or indirectly through mail (for telephone clinic). In total, **494** questionnaires were distributed and **231** were completed and returned yielding to a response rate (RR) of **46.7%**.



**Ethical approval:** obtained from the NHS Wales REC (reference no. 14/WA/0048, dated February 5, 2014), R&D Office, Leeds teaching Hospital NHS Trust (LTH R&D no. PO14/11075, dated March 6, 2014).

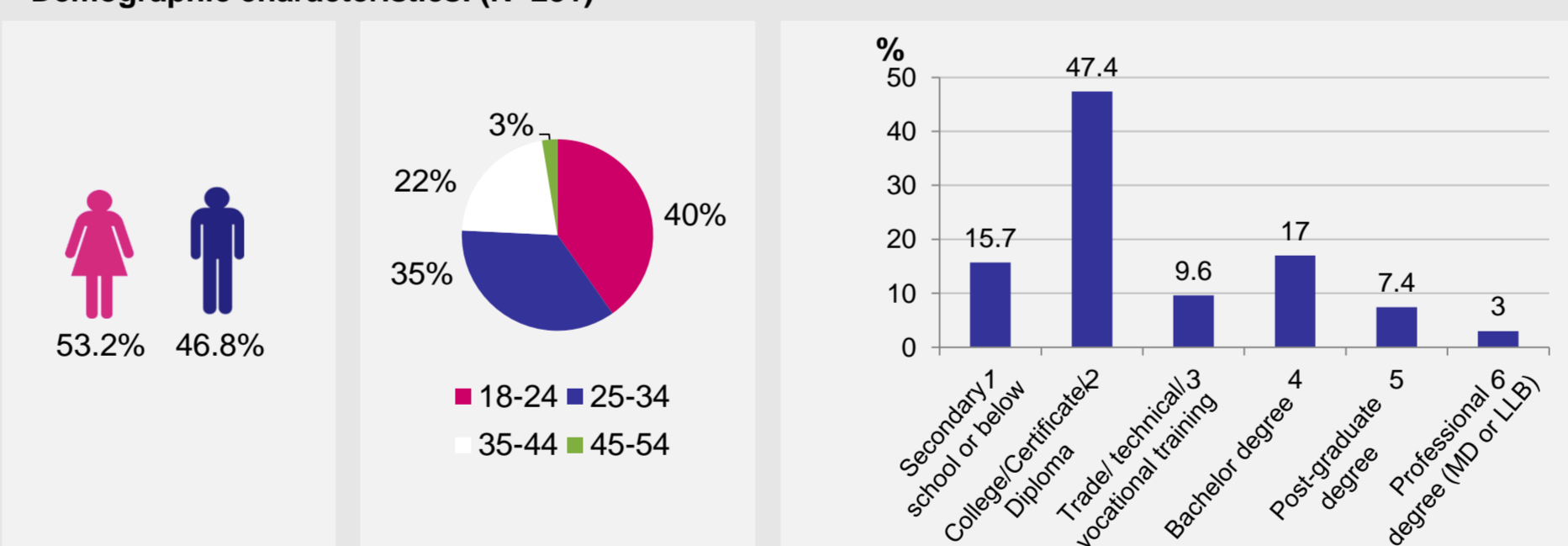
**Study questionnaire:** A self-administered paper-based questionnaire was developed and validated for the study purpose. It includes 19 items representing 5 constructs. In addition to some general questions (i.e. demographic questions, Internet experience questions and importance of resources questions).

Construct	No. o items	Cronbach's α	Measurement scale
BI	4 items	0.97	7-Point Likert scale (Disagree strongly= 1/Agree strongly =7)
At	5 items	0.87	7-Point Likert scale (Disagree strongly= 1/Agree strongly =7)
SN	4 items	0.96	7-Point Likert scale (not at all influential= 1/extremely influential =7)
PBC	3 items	0.82	7-Point Likert scale (Disagree strongly= 1/Agree strongly =7)
CA	3 items	0.80	7-Point Likert scale (Disagree strongly= 1/Agree strongly =7)

**Data analysis technique:** (1) Descriptive statistics accomplished through SPSS were used to analyse the demographic characteristics. (2) Confirmatory factor analysis, conducted through MPlus, examined the reliability and validity of measurement model. (**Reliability** assessed through Cronbach's α [5], **convergent validity** assessed through factor loading [6] and **discriminant validity** assessed through pairing two latent constructs and subjecting them to two models of CFA [7].) (3) Structural equation modelling, conducted through MPlus examined the conceptual model.

## STUDY RESULTS

**Demographic characteristics: (N=231)**



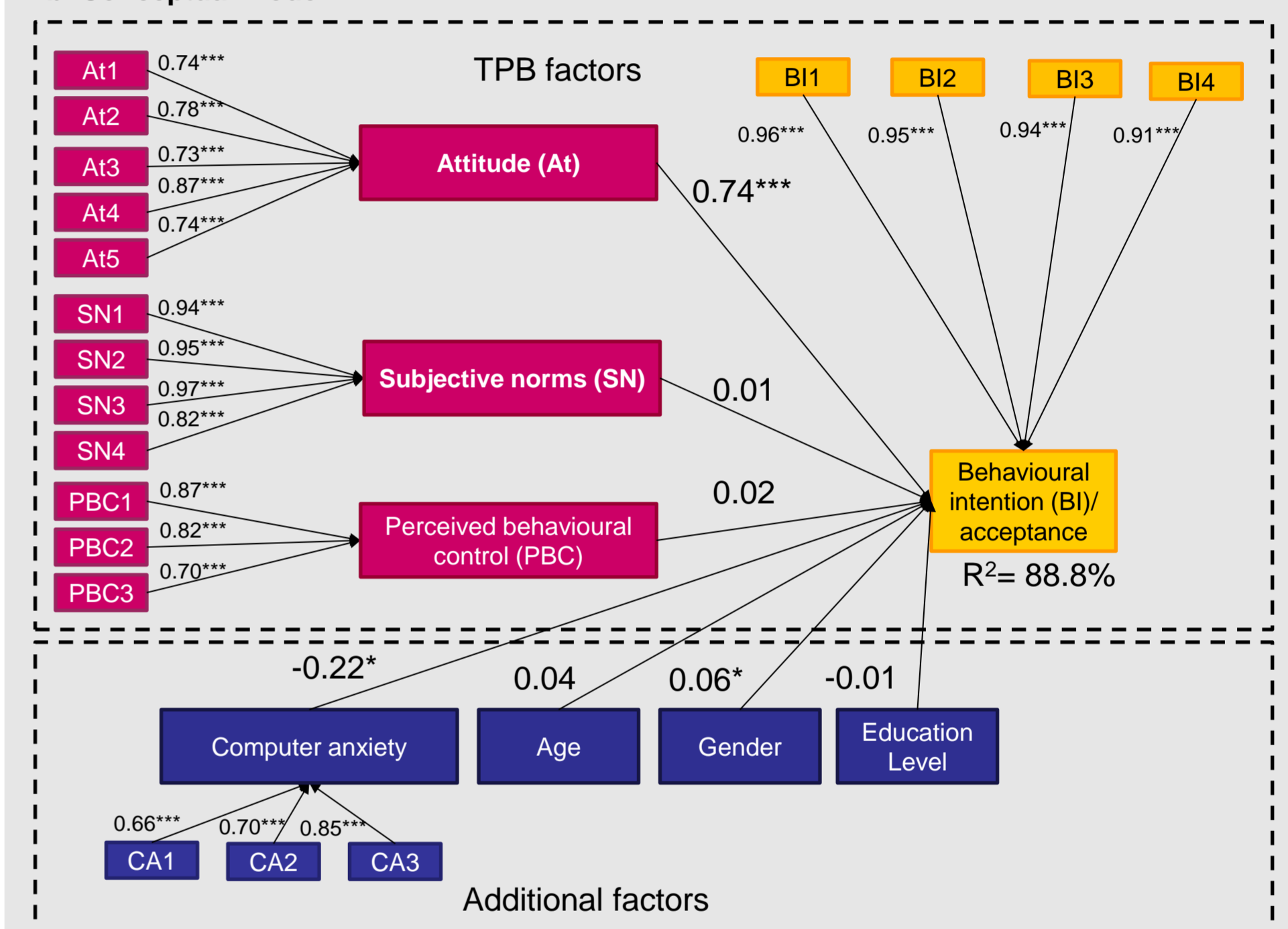
**CFA/SEM results:**

Fit indices	Recommended value <sup>[8]</sup>	CFA	SEM
$\chi^2/d.f.$	$\leq 3$	(268.7/142)=1.89	(365.8/196)=
CFI	$\geq 0.90$ is acceptable and $\geq 0.95$ is excellent	0.96	0.95
TLI	$\geq 0.90$ is acceptable and $\geq 0.95$ is excellent	0.95	0.94
RMSEA (CI=90%)	$< 0.08$ is acceptable and $\leq 0.05$ is excellent	0.06 (90%) CI=0.05/0.07	0.6 (90% CI=0.05/0.07)
SRMR	$< 0.08$ is acceptable and $\leq 0.05$ is good	0.04	0.07

**a. Measurement model:**

- **Reliability:** Cronbach's α of all the construct above 0.70 the questionnaire reliability is confirmed.
- **Convergent validity:** standardised factor loading of all the items above 0.60 and the convergent validity is confirmed.
- **Discriminant validity:** All  $\chi^2$  difference values of paired construct were statistically significant at  $p < 0.01$ , and the discriminant validity is confirmed.

**b. Conceptual Model:**



Note. \* $p > 0.05$ , \*\* $p > 0.01$  and \*\*\* $p > 0.001$

## CONCLUSION

- ❖ The development of e-PROMs is still in early stage and this study explored the factors influencing patients acceptance of e-PROMs based on TPB and additional factors.
- ❖ In the study context, the model shows 89% of the behavioural intention variance.
- ❖ The results indicated that the most critical factor influencing patients acceptance/behavioural of e-PROMs is attitude followed by computer anxiety and gender.
- ❖ The results provide the clinicians with insights into how to motivate patients to use e-PROMs.

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