

CONTEXT

- ❑ The Discrete Choice Experiment (DCE) is a quantitative method increasingly used in healthcare to elicit patient preferences without directly asking them to state their preferred options. These methods help inform public decision-making, in a context of **healthcare democracy** and **shared-decision making**.
- ❑ Patient preferences are not often explored and documented in the literature, especially in the field of fertility. Patients' preferences often differ from those of their care providers
- ❑ It is important to **know the value that patients attribute to different management options**. The patient-physician relationship is evolving, with a growing complementarity between the expertise of healthcare professionals and the experience of the patient.
- ❑ Patients are now seen as active participants in their health care. Healthcare decision-makers increasingly use patient-centered criteria in the HTA process.

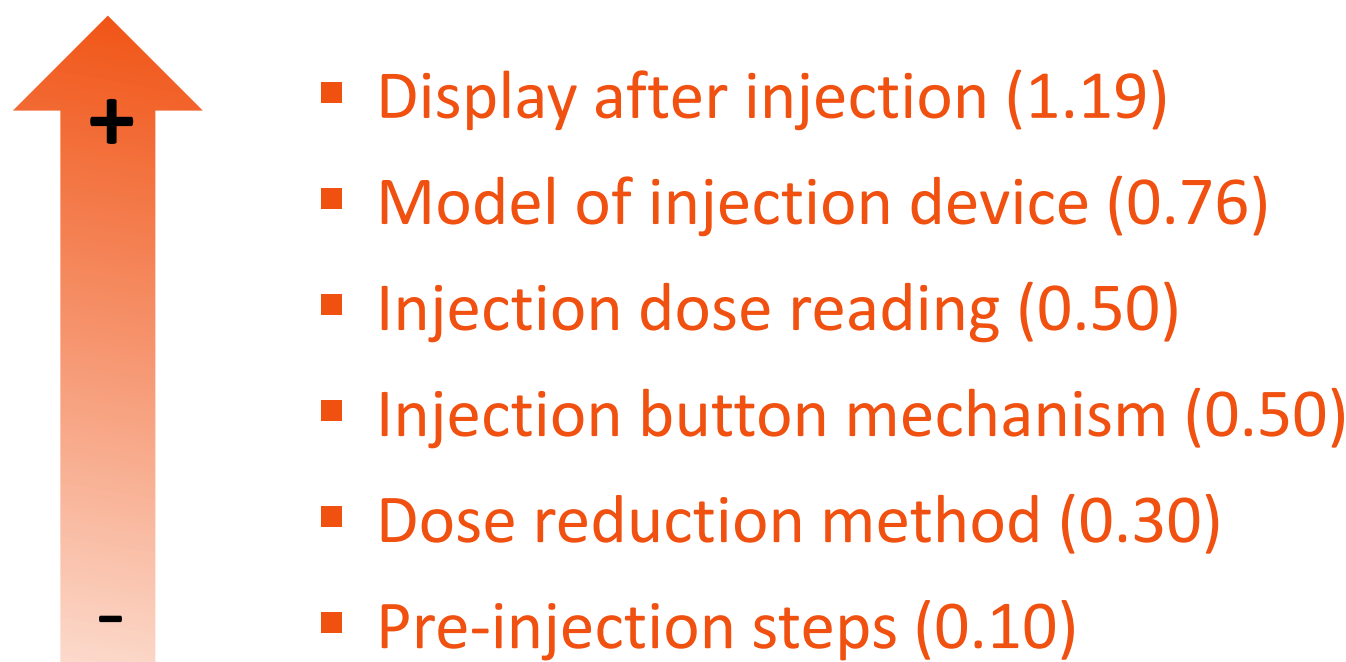
METHODS

- ❑ The DCE¹ is a **stated preferences method** which requires respondents to make **trade-offs** for various pen injector characteristics (called attributes).
- ❑ Participants were presented with a series of 2 hypothetical scenarios described by several characteristics ("**attributes**"), each of which can take on different values ("**levels**"). They had to choose between two pen injectors, each pen defined by a set of hypothetical characteristics.
- ❑ A DCE questionnaire with **12 choice sets** was developed to measure the preferences for six pen characteristics.
- ❑ The online survey was sent to patients from **3 French patient associations**.
- ❑ For data analysis, **several models were tested** in accordance with ISPOR recommendations². The **mixed logistic model with uncorrelated effects** was selected, based on the AIC and BIC statistical metrics and because it was the least constrained model. It was applied to identify preference ranks and compute a utility score for each pen injector

RESULTS

- ❑ The study involved 155 women who had previous experience with the use of injector pens for ovarian stimulation with an average age of 34.1 years at the time of their last ovarian stimulation.
- ❑ Their ART course length was 2.3 years, and respondents had undergone an average of 1.4 IUI cycles and 2 IVF cycles during the course of ART.
- ❑ The influence of different attributes on respondents' preferences is assessed through a relative importance score (Figure 3).

FIGURE 3: Attribute preference ranking



Key points

- ✓ Respondents preferred pens that are ready to use ($p < 0.0001$), can be used multiple times ($p < 0.0001$), have dose injection confirmation ($p < 0.0001$), and display the dose with digits ($p < 0.0001$) (Figure 2)
- ✓ The two most important attributes for respondents were the dose display after injection and the model of the injection device. The injection button mechanism and the dose reduction method were of little importance to women who use pen injectors. (Figure 3)

OBJECTIVES

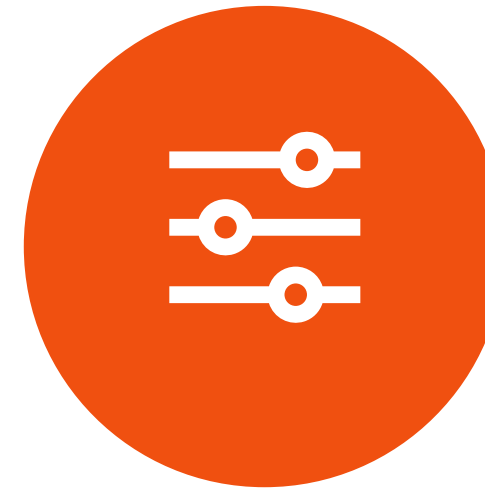
The objective of this study is to elicit patients' preferences using a DCE in the field of Assisted Reproductive Technology with the example of pen injector used for ovarian stimulation.



→ Elicit patients' preferences of pen injector attributes used for ovarian stimulation in ART



→ Quantify the relative importance of each of these attributes



→ Generate utility scores for the different pen injectors

FIGURE 1: Study steps

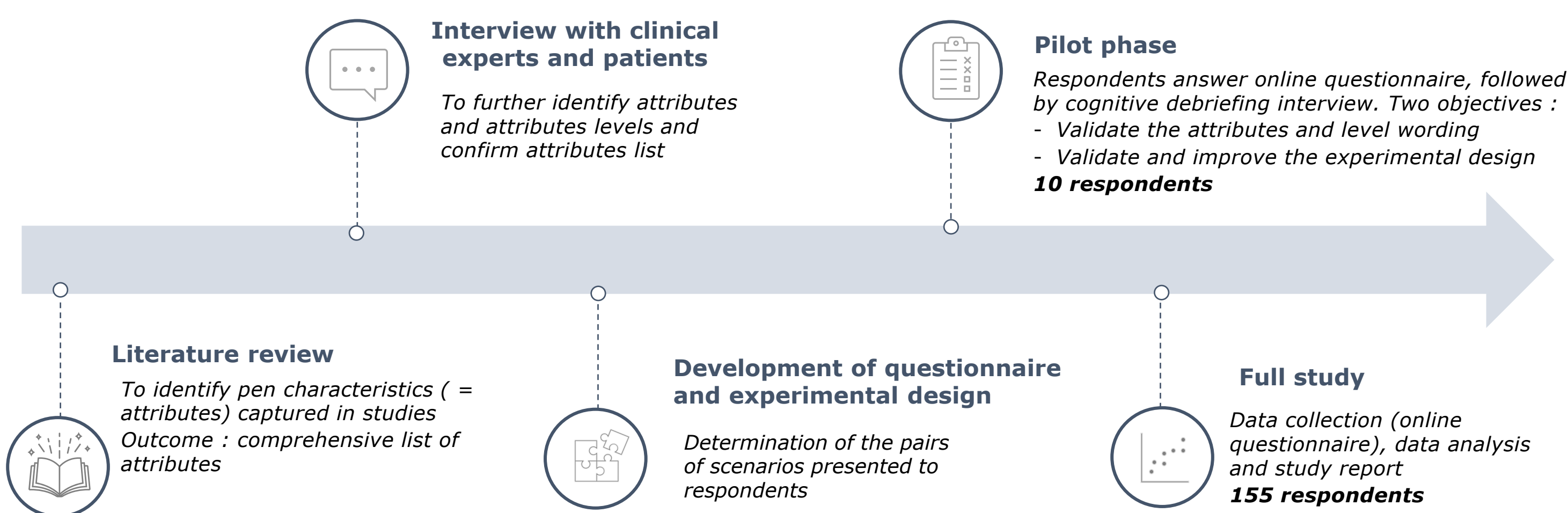
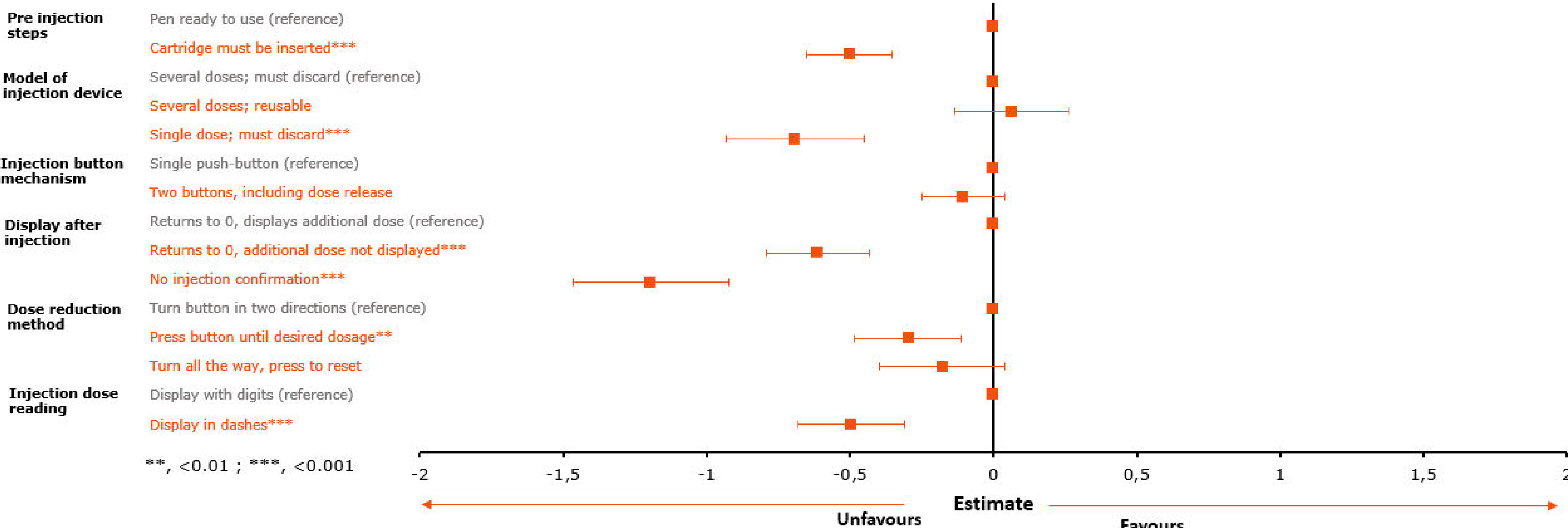


FIGURE 2: Results of the mixed logit model



DISCUSSION

The preferred attributes are those relating to the performance of the injection device, reflecting a reassuring aspect and a notion of **effectiveness** for women.

Our study population result in over-representation of upper socio-economic categories when compared to general population. While infertility affects all socio-professional categories, access to ART is less accessible to the less privileged. This selection is emphasized for 2 reasons : the recruitment of patients by patient associations (better informed and involved) and the complex cognitive exercise involved in the DCE methodology.

This study highlights the discrepancy in preferences between patients and physicians. Physicians tend to prefer pens with better handling rather than (perceived) efficacy. The outcomes of this study could be used in the development of any new injection pen to favour the accurate daily administration of the prescribed dose.

There are many application contexts for DCE studies :

- Guidance for decision-makers: using patient-centered criteria to assess healthcare technologies
- Estimate patients'/decision-makers' willingness to pay for an innovation
- Setting priorities for resource allocation in a constrained economic context

CONCLUSION

This patient preference study based on DCE methodology enables the determination of patient preference regarding pen injector. Respondents preferred pen that are ready to use, can be used multiple times and have dose injection confirmation, reflecting a reassuring about the fact that the accurate dose has been administered.

The patient's place in healthcare decision-making is evolving. This type of study helps to improve patients' engagement by making them active participants in their own care.

REFERENCES

- 1 - Bridges JF, Hauber AB, Marshall D, Lloyd A, Prosser LA, Regier DA, Johnson FR, Mauskopf J. Conjoint analysis applications in health—a checklist: a report of the ISPOR Good Research Practices for Conjoint Analysis Task Force. Value Health. 2011 Jun;14(4):403-13. doi: 10.1016/j.jval.2010.11.013. Epub 2011 Apr 22. PMID: 21669364.
- 2 - Ispor Task Force Report, Statistical Methods for the Analysis of Discrete Choice Experiments: A Report of the ISPOR Conjoint Analysis Good Research Practices Task Force, Value in Health 19 (2016) 300-315

