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Benefits and challenges of different qualitative approaches in rare disease: A case study in Activated Phosphoinositide 3-Kinase Delta Syndrome (APDS) using a narrative account exercise and qualitative interviews

Hanna Skrobanski[1], Elina Matter[1], Sarah Acaster[1], Ian Hitchcock[2], John Whalen[2], Joanne Tutein Nolthenius[2], Alex Crocker-Buque[2], Amanda Harrington[3], Delphine Vandenberghe[2], Ewen Munro[2], Kate Williams[1]

[1]Acaster Lloyd Consulting Ltd., London, UK, [2]Pharming Group N.V., Leiden, The Netherlands, [3]Pharming Healthcare, Inc., Warren, New Jersey, US

Key Findings:

- **Two qualitative data collection methods were used to enhance understanding of the burden of APDS: (1) a narrative account exercise and (2) qualitative interviews.**
- **The narrative account exercise identified novel concepts and the qualitative interviews enabled participants to further expand on these concepts, which led to a more comprehensive understanding of their experience.**
- **Using multiple approaches to qualitative data collection can enhance data richness and make participation in research more accessible, but it it is important to consider participant burden.**

Objective:

- This study explored the benefits and challenges of using multiple approaches to collect qualitative data using a case study in activated phosphoinositide 3-kinase delta syndrome (APDS).

Introduction:

- Qualitative research involves the in-depth exploration of the impact of a disease by allowing participants to speak freely about their experiences (1, 2).
- Qualitative research can be particularly valuable in rare diseases, where little is known about the patient or caregiver experience of a disease and there is a limited pool of potential participants for recruitment.

Methodology:

- A two-staged qualitative study using narrative accounts and qualitative interviews was conducted with individuals with APDS and caregivers to explore the burden of disease in APDS:
  1. **Narrative account exercise:** participants were asked to write or audio-record an unstructured account of their experience with APDS.
  2. **Qualitative interviews:** Participants took part in a semi-structured qualitative interview.
- The study was approved by WIRB-Copernicus Group Independent Review Board (#20226879)
- Recruitment took place through a specialist recruitment agency. Adult individuals with APDS and caregivers gave written informed consent to participate, and adolescent individuals with APDS gave written assent with written informed consent provided by parents/legal guardians.
- Interviews were recorded and transcribed. Data from the narrative accounts and interviews were analyzed separately, using thematic analysis, and compared to examine differences.

Findings:

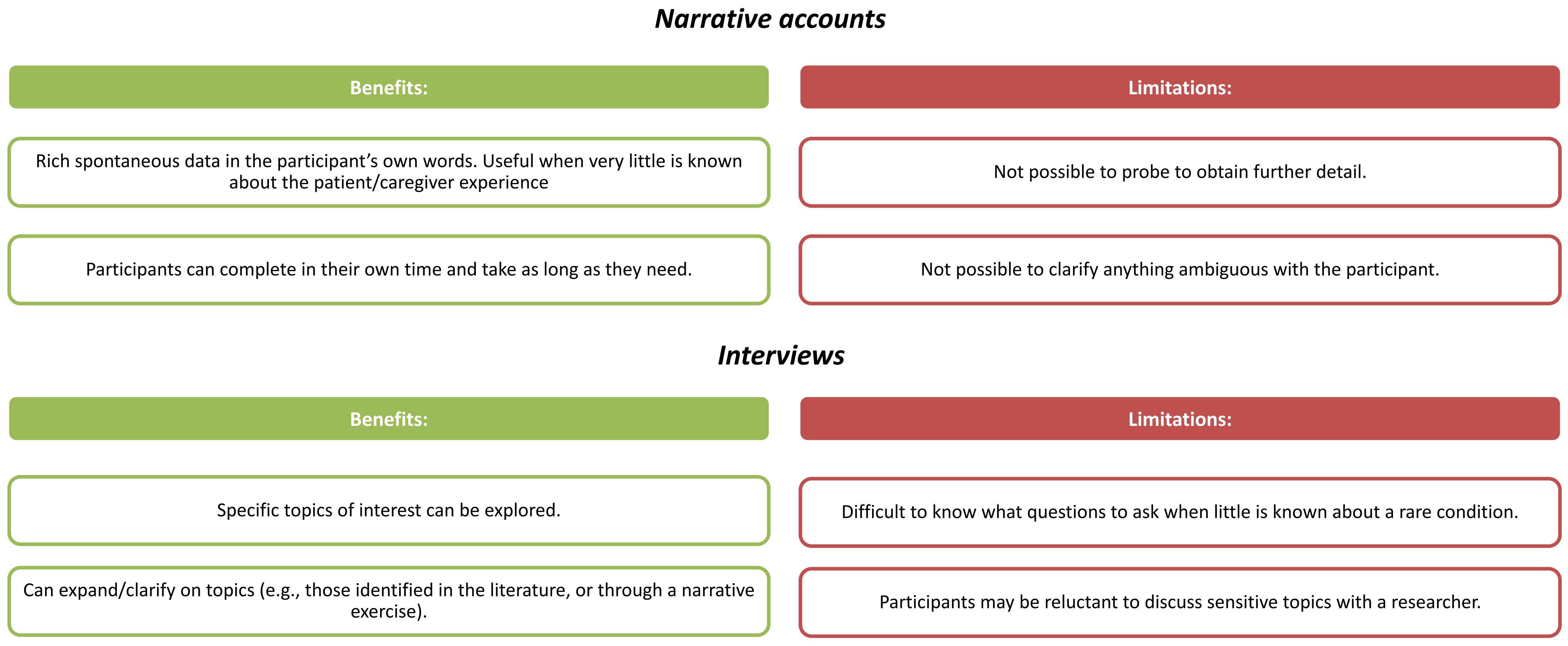
Sample characteristics:

- Seven participants completed the narrative account exercise (N=5 caregivers and N=2 individuals with APDS), all providing written accounts approximately 1-4 pages long. Twelve took part in an interview (N=4 caregivers and N=8 individuals with APDS).

Findings:

- The narrative accounts led to the identification of symptoms and impacts not reported in previous literature (e.g., impact on family planning, sleep disorders associated with APDS, pain associated with Immunoglobulin Replacement Therapy (IRT), and caregivers' HRQoL impacts associated with substantial time spent providing care).

Figure 2. Benefits/limitations of narrative accounts and interviews



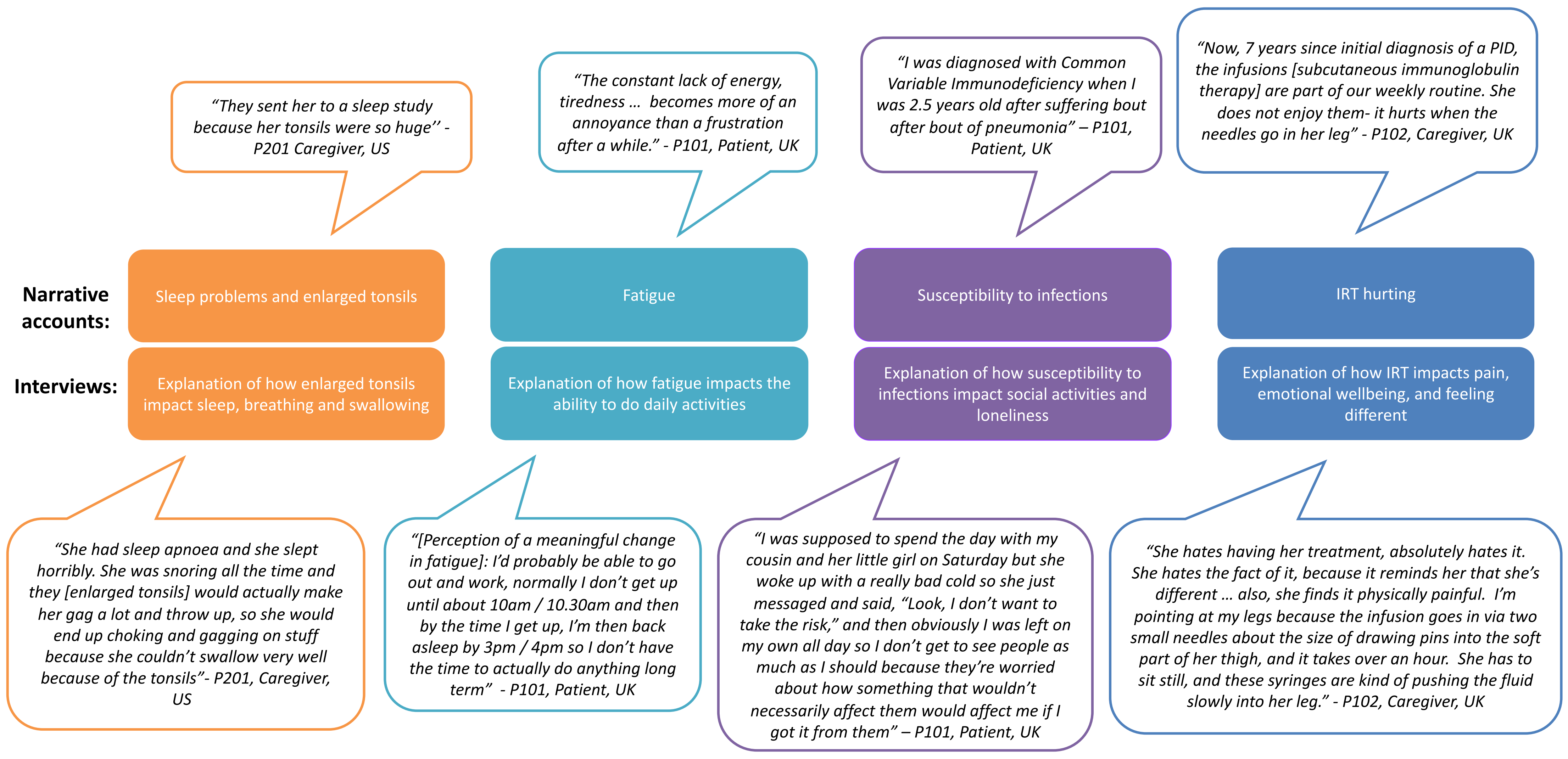
Narrative accounts

Benefits:	Limitations:
Rich spontaneous data in the participant's own words. Useful when very little is known about the patient/caregiver experience	Not possible to probe to obtain further detail.
Participants can complete in their own time and take as long as they need.	Not possible to clarify anything ambiguous with the participant.

Interviews

Benefits:	Limitations:
Specific topics of interest can be explored.	Difficult to know what questions to ask when little is known about a rare condition.
Can expand/clarify on topics (e.g., those identified in the literature, or through a narrative exercise).	Participants may be reluctant to discuss sensitive topics with a researcher.

Figure 1. Differences identified between narrative accounts and interviews with illustrative quotes.



	"They sent her to a sleep study because her tonsils were so huge'' - P201 Caregiver, US	*"The constant lack of energy, tiredness … becomes more of an annoyance than a frustration after a while." - P101, Patient, UK*	*"I was diagnosed with Common Variable Immunodeficiency when I was 2.5 years old after suffering bout after bout of pneumonia" – P101, Patient, UK*	*"Now, 7 years since initial diagnosis of a PID, the infusions [subcutaneous immunoglobulin therapy] are part of our weekly routine. She does not enjoy them- it hurts when the needles go in her leg" - P102, Caregiver, UK*
Narrative accounts:	Sleep problems and enlarged tonsils	Fatigue	Susceptibility to infections	IRT hurting
Interviews:	Explanation of how enlarged tonsils impact sleep, breathing and swallowing	Explanation of how fatigue impacts the ability to do daily activities	Explanation of how susceptibility to infections impact social activities and loneliness	Explanation of how IRT impacts pain, emotional wellbeing, and feeling different
	"She had sleep apnoea and she slept horribly. She was snoring all the time and they [enlarged tonsils] would actually make her gag a lot and throw up, so she would end up choking and gagging on stuff because she couldn't swallow very well because of the tonsils"- P201, Caregiver, US	*"[Perception of a meaningful change in fatigue]: I'd probably be able to go out and work, normally I don't get up until about 10am / 10.30am and then by the time I get up, I'm then back asleep by 3pm / 4pm so I don't have the time to actually do anything long term" - P101, Patient, UK*	*"I was supposed to spend the day with my cousin and her little girl on Saturday but she woke up with a really bad cold so she just messaged and said, "Look, I don't want to take the risk," and then obviously I was left on my own all day so I don't get to see people as much as I should because they're worried about how something that wouldn't necessarily affect them would affect me if I got it from them" – P101, Patient, UK*	*"She hates having her treatment, absolutely hates it. She hates the fact of it, because it reminds her that she's different … also, she finds it physically painful. I'm pointing at my legs because the infusion goes in via two small needles about the size of drawing pins into the soft part of her thigh, and it takes over an hour. She has to sit still, and these syringes are kind of pushing the fluid slowly into her leg." - P102, Caregiver, UK*

- The interviews allowed us to further explore how the clinical manifestations and symptoms of APDS and how these are interrelated (e.g., breathing and swallowing difficulty associated with enlarged tonsils) and the specific impacts of these issues on daily life and HRQoL (e.g., fatigue impacting daily activities, susceptibility to infections impacting social activities, and loneliness associated with shielding from infections).
- In the interviews, participants also expanded on further impacts of treatments on patient HRQoL (e.g., patients feeling different due to having regular IRT and how it is associated with pain).

Conclusions:

- Using multiple approaches to collect qualitative data can enhance the richness of data collected, but it also has the potential to increase participant burden.
- Allowing participants to choose their preferred approach(es) has the potential to reduce burden and make participation in qualitative research more accessible.
- It is important to remain flexible when conducting qualitative research and consider the added value of using multiple approaches to avoid unnecessary burden.
- Overall, the qualitative interviews provided the richest data as it was possible to probe to obtain further insights.

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DISCLOSURES AND ACKNOWLEDGEMENTS:

This study was funded by Pharming Group N.D. Ian Hitchcock, Ewen Munro, John Whalen, Joanne Tutein Nolthenius, Alex Crocker-Buque and Delphine Vandenberghe are all employees of Pharming Group N.V and may hold stock or stock option in the company. Amanda Harrington is an employee of Pharming Healthcare, Inc. and may hold stock or stock option in the company. Hanna Skrobanski, Elina Matter and Kate Williams are employees of Acaster Lloyd Consulting and may hold stock or stock options in the company. Sarah Acaster is a company director of Acaster Lloyd Consulting.