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Exploring virtual delivery of academic detailing to general practitioners compared with in-person delivery: a qualitative study

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ABSTRACT

Background Inappropriate prescribing may have detrimental consequences for the patient and increase healthcare utilisation and costs. Academic detailing (AD) is an interactive outreach method to deliver non-commercial evidence-based medical information to healthcare professionals, aiming to improve patient care. Performing AD virtually has recently become more relevant, especially with the COVID-19 pandemic.

Objectives The aim of this study was to explore general practitioners' (GP's) experiences and perceptions of virtually delivered AD.

Methods We invited practicing GPs that had received virtual AD in Norway during autumn 2020. Semistructured individual interviews were audio and video recorded during February–May 2021. Interviews were transcribed and analysed applying thematic analysis according to Braun and Clarke.

Results From interviews with nine GPs, we identified five themes concerning (1) informants' satisfaction with virtual AD and their opinions about the detailers and their characteristics, (2) factors that are important for participation in AD, with the campaign topic being the most important, (3) a paradox between the informants' desire for more time for discussion and the time constraint they are facing, (4) the many benefits of virtual AD compared with in-person AD and (5) the informants' perceived learning outcomes are unaffected by mode of AD delivery.

Conclusion Virtual AD worked very well in terms of scheduling the visit, using technology to facilitate the visit and achieving the same learning outcomes. Virtual AD should be offered to GPs as an alternative to the traditional in-person AD, especially in remote geographical areas or in circumstances when physical outreach is challenging.

WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ Academic detailing (AD) improves patient outcomes. However, there is conflicting evidence concerning the preferences of prescribers and the outcomes for patients when comparing virtual delivery to in-person delivery.

WHAT THIS STUDY ADDS

⇒ This study demonstrates that virtual AD delivery provides several advantages, such as flexible scheduling, a reduced carbon footprint, no risk of spreading contagious diseases, and improved accessibility for general practitioners in remote areas. It suggests that virtual AD delivery should be considered as a complementary option to in-person delivery.

HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The findings encourage further research on the impact of virtual AD on medication prescribing and patient outcomes. This could influence future policies to integrate virtual AD more broadly into healthcare systems, potentially leading to more sustainable, efficient, and accessible healthcare practices.

INTRODUCTION

Inappropriate prescribing is defined as 'prescribing medicines that may cause more harm than benefit, are not cost-effective or are not clinically indicated'[1] and is a worldwide challenge to patient safety.[2] Failing to prescribe clinically indicated beneficial medicines is also considered inappropriate prescribing.[3] Academic detailing (AD) is an international acknowledged educational outreach method to reduce inappropriate prescribing and consequently improve patient safety.[4 5] AD was invented in the USA in the 1980s and has been used both extensively and successfully worldwide to reduce inappropriate prescribing.[4 6–9]

AD specifically targets prescribers, usually physicians working in hospitals or as general practitioners (GPs) in primary healthcare facilities.[10] Prescribers are provided commercial-free, evidence-based continuing medical education by academic detailers (usually trained physicians or pharmacists) during one-on-one in-person visits.[11] A typical AD visit consists of a short and concise presentation by the detailer of available evidence-based information on efficacy, potential risks and cost-effectiveness within a certain group of drugs or therapeutic area,

before discussing practical recommendations to improve real-world patient care decisions. The main points are included in a brochure with compelling and engaging graphics and illustrations that the prescriber can keep after the visit.[6] The academic detailers complete extensive training in both the AD methodology and the one-on-one interaction with the prescribers, which is crucial for achieving learning outcomes.[6]

In Norway, AD is delivered to GPs by the nationally funded organisation Regional Medicines Information and Pharmacovigilance Centers (RELIS) in collaboration with four hospital-based clinical pharmacological units.[12 13] The four regional RELIS units collaborate on delivering AD to GPs in 'The Norwegian Academic Detailing Program' (Norwegian: KUPP). As of 2021, KUPP had delivered approximately 4100 in-person AD visits to GPs across the country. The topic of the first AD campaign in 2015 was designed to address inappropriate prescribing of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs)[7] and resulted in significant reductions in NSAID prescriptions.[7 8] In 2018, the AD campaign addressed the appropriate prescribing of diabetes medications, which resulted in positive outcomes, including an observed increase in metformin prescriptions.[14] In 2019, the fourth AD campaign was launched, addressing opioid use in chronic non-malignant pain. Studies indicate a positive effect of the AD campaign, evidenced by a slight decrease in the total number of both prevalent and incident opioid users in parts of Norway.[15] Before the COVID-19 pandemic, virtual AD visits (also called e-detailing in the USA)[16 17] were piloted in KUPP. Virtual AD provides the possibility to include GPs practicing in rural areas, where in-person visits are difficult due to limited travel opportunities. Literature investigating the feasibility of virtual AD visits has shown positive results,[18] indicating that virtual AD visits appear to be as effective as in-person visits in terms of changing practice.[19] However, some studies indicate that GPs prefer in-person AD visits to virtual AD visits.[20] To maintain the AD service to GPs throughout the COVID-19 pandemic, all AD visits in KUPP were conducted virtually.

Donabedian, in 1966, asserted that the quality of healthcare services refers to 'the degree to which health services for individuals and population increase the likelihood of desired health outcomes and are consistent with current professional knowledge'.[21] This principle is closely intertwined with the quality of AD services, where user feedback and opinions play an important role in enhancing quality and fostering organisational learning.[22] Hence, it becomes crucial to assess how GPs perceive the AD service and its quality, as this evaluation is instrumental in driving further development and improvement. The aim of this study was to explore Norwegian GPs' experiences and perceptions of the virtual AD visits in KUPP.

METHODS

Study design and informants

Individual semistructured qualitative video interviews were conducted with GPs in the Northern and Western regions of Norway who had participated in virtual AD visits in the campaign 'Better use of opioids for chronic, non-malignant pain'. The virtual AD visit consisted of a one-on-one meeting between the GP and a trained academic detailer, and had a duration of 20–30 min. Three academic detailers facilitated the AD visits. The educational material used in the virtual AD visits was based on a four-page brochure originally used in in-person visits and transformed into a Microsoft PowerPoint presentation shared on screen.[23]

Sampling and recruiting

All practicing GPs that participated in virtual AD visits during the period February–May 2021 were invited by the academic detailers. Both GPs who had previously participated in in-person AD-visits (AD experienced) and GPs who had only participated in the virtual AD visit (AD naïve) were invited, and we ensured that both groups were finally included in the study. The academic detailer informed the GP about the study after the virtual AD visit. If the GP was interested in participating, their contact information was shared with the interviewers (BHG and ECL). The interviewers were external to KUPP and had no prior affiliation with the GPs, which helped mitigate the risk of information bias. The interviewers sent an email invitation, along with the study information leaflet attached, to the interested GPs. If the GP responded to the email invitation, time and digital platform for the interview was arranged. The identity of the informants was concealed for the academic detailers and the remaining project group. There were no inclusion or exclusion criteria for participation other than being a practicing GP who had recently participated in a virtual AD visit. The participating GPs received compensation based on an hourly tariff salary.

Interview guide and piloting

The interview guide was developed by the project group, where four are active academic detailers (HCL, JAJ, JS and TN). The interview guide comprised questions related to (1) experience with a virtual AD visit (vs in-person AD visits), (2) perceived learning outcome of the virtual AD visit and (3) elements of AD visits that make it attractive for GPs to participate (see online supplemental file 1). The interview guide was piloted in one interview with an AD-experienced GP, and slightly refinements were made following the pilot interview. We also consecutively refined the interview guide as relevant and interesting topics were occurring from the interviews, for example, relationship with the academic detailer. Data from the pilot interview was excluded from the analysis.

Data collection and transcription

The interviews were carried out and recorded through video by two researchers (BHG and ECL) trained in qualitative research methods, on the digital platforms Microsoft Office Teams or Zoom in the period February–May 2021. The interviewers alternated between leading the interviews and taking fieldnotes. Informants were recruited and interviewed until we had gained sufficient information power and richness in our data material. This accomplishment was attained with a relatively small number of participants, attributed to the study's focused scope, a highly specific participant profile and robust interview interactions.[24] Demographic information on sex, experience and AD status (naïve or experienced) was collected. The interviews were transcribed in the Norwegian official language. Field notes were written and used to facilitate familiarisation with emerging themes immediately after each interview. The first transcriptions were performed manually in Microsoft Word for Mac V.16.59. The latter interviews were transcribed applying the automatic transcription tool in Microsoft Office 365. All transcripts were read several times while watching the interview to manually correct any typing mistakes and to become familiar with the data material. We added elements from the video and fieldnotes, for example, facial expression and laughter, which we found important for understanding the content.

Analysis

The transcripts were analysed by BHG and ECL applying a thematic analysis by Braun and Clarke,[25] see figure 1. This approach is useful in applied research outside of academia, in this case in a practice arena.[26] We applied a semantic approach to identify themes, and did not search for anything *behind* the explicit themes, as suggested by Patton.[27] We named the themes to illuminate a comprehensive interpretation of data.[28] The Consolidated criteria for Reporting Qualitative research statement was used to guide reporting of the findings.[29]

Reflexivity

The members of the research team are pharmacists and medical doctors, professions with a special interest in medications and appropriate use, who may find AD more important than other professions. The interviewers (both pharmacists) were independent of the AD service delivery, having no preunderstanding of informants' perceptions of the AD visits, or how the detailers perceived the informants.

Patient and public involvement statement

No patients or public were involved in planning, conducting or interpreting results of the study, as it was not found relevant.

RESULTS

We included nine GPs in the study, five of whom had previous experience with AD (experienced) and four had only participated in the virtual AD visit (naïve). The GPs' clinical experience varied between 2 and 10 years, see table 1. One audio recording (interview #5) was lost due to technical difficulties; hence, no transcription of the interview was available for analysis. The comprehensive field notes and quotes denoted during the interview were consequently applied during analysis. The interviews lasted from 12 to 39 min. The codes derived from the data were grouped into five themes, see figure 2.

Theme 1: AD as a concept and the detailer characteristics

All informants were very satisfied with the virtual AD visits. The experienced informants were also satisfied with previous in-person delivered AD visits. Informants appreciated the campaign topics, the way the AD visits were executed, the independency of the AD deliverer, the

Phase 1: Familiarizing yourself with your data. We listened to the interviews and read the transcripts several times to familiarize ourselves with the data and what the participants had talked about. Initial ideas for the analysis were noted down during the process (BHG&ECL)

Phase 2: Generating initial codes. We worked inductively and coded interesting features of the data in a systematic fashion across the entire data set. We worked manually without a data program. Our coding was "data driven" as we were searching for a specific answer to our research question (BHG&ECL).

Phase 3: Searching for themes. We organized our codes in meaningful groups (themes) to identify patterns and form overarching themes that would answer our research question. We applied a semantic approach to identify themes and perceptions that appear explicitly in the data material. We have not searched for anything *behind* the explicit themes. (BHG&ECL)

Phase 4: Reviewing themes. The project group discussed the identified patterns, the themes, and the initial interpretation to agree on the final presentation and interpretation of results and generate a thematic map of the analysis. (BHG, ECL, HCL, JS, JAJ & TN)

Phase 5: Defining and naming themes. Before refining the final themes and naming them, we listened to the interviews again and discussed a "storyline" as well as selecting data extracts (quotes) to illustrate and underpin our interpretation of the content (BHG&ECL)

Steg 6: Producing the report. Finally, themes and quotes to answer the research question are presented as a narrative in this article (BHG&ECL).

Figure 1 Description of the steps in the thematic analysis.

Table 1 Demographics of the informants (names are fictive)

Name	Sex	Experience with AD	Experience as GP (years)	Duration of interview (minutes:seconds)
Thor	Male	Naïve	2	34:10
Arthur	Male	Naïve	10	32:00
Michael	Male	Experienced	4–5	33:24
Hannah	Female	Naïve	3	~30:00*
Kevin	Male	Experienced	6–7	29:29
Harriet	Female	Experienced	7	28:45
Julia	Female	Experienced	11	12:23
Marcus	Male	Experienced	7	39:25
Irene	Female	Naïve/experienced†	2	31:05

*Recording of interview lost due to technical issues. Instead, field notes from the interview were used in the analysis.
†Remembered during the interview that she had previously received an in in-person academic detailing visit.
AD, academic detailing; GP, general practitioner.

length of the visits and the campaign material received. They regarded AD visits as an easy and time-efficient way to stay up to date with the latest research and guidelines. One crucial element for the informants was that the information provided in AD visits was relevant, evidence based and new. Thor stated:

> As a general practitioner, these [the information presented though AD] are very up-to-date. So my interest is primarily to learn something new. Or become updated on recent developments

The informants' expectations of what to learn in an AD visit varied. Hannah stated that she expected to 'refresh my knowledge'. She confirmed that these expectations were met in the virtual AD visit. However, not all GPs' expectations of the AD visit were met, which resulted in the AD visit being perceived as a waste of time. Arthur explained:

> I had hoped that it might be something different, something I might not have thought of at all. But it wasn't. Maybe it would have been useful for me at the very beginning of my career, but not the way things are now. […] So, nothing useful related to how I continue my work

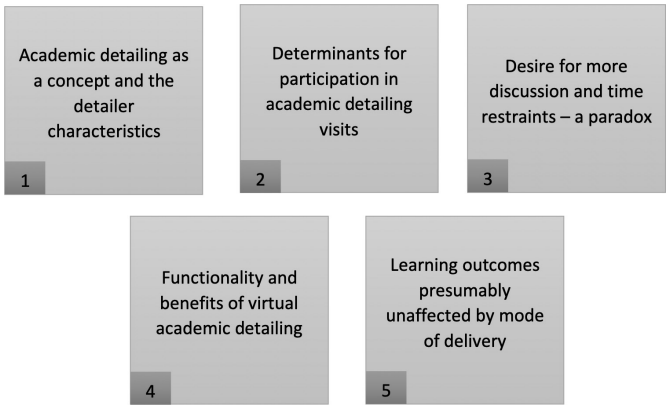

Figure 2 The themes derived from the thematic analysis of interviews with general practitioners about their experiences with and perceptions of virtual academic detailing.

None of the informants had anything negative to say about the academic detailers, but pointed out the importance of the detailers to be 'nice', 'respectful', 'engaging', 'knowledgeable' and have 'clinical experience'. In addition, the independency of the detailers and their provision of reliable and evidence-based information was regarded as crucial to the informants, as it increased credibility and built trust, as opposed to the industry. Thor said:

> It is very good that it is not a salesperson arriving, but one that has both education and competence, presenting the topic in a neutral way. I value that highly

With regard to meeting the same detailer in different AD campaigns, none of the informants perceived this as important, not even the AD experienced informants.

Theme 2: Determinants for participation in AD visits

The most decisive factor for accepting AD visits was the campaign topic. The informants stated that the topics needed to be 'interesting', 'relevant and useful for clinical practice', 'applicable for many patients', 'a topic that most GPs are facing in their clinical practice', 'a topic you want to learn something about' and 'where there is established knowledge and specific advice/recommendations for best practice'. These factors seemed to be independent of delivery mode.

The campaign topics were perceived more useful if aligned with national health authority messages and media focus. The previous AD campaign on better use of antibiotics was highlighted as such an example. This campaign was provided simultaneously with national information shared on social media and in ads, informing Norwegian citizens about the importance of reducing the use of antibiotics. This made it easier for GPs to adhere to prescribing guidelines and decline patient requests for antibiotics when they were not indicated. Michael said:

> I believe it is very important that the same information comes from the authorities, and that the patients hear the same information from their GP as in media. Because you must address (inappropriate medication use) in several ways

The provision of campaign material was highly appreciated by all informants. Many of them used this in their daily practice after the visit, either when needed in a patient consultation or as a reference to look up information at a later stage.

Theme 3: Desire for more discussion and time restraints—a paradox

None of the informants wanted the AD visits to last longer than 20 or maximum of 30 min, which is the standard length of a patient consultation. Harriet said:

> It is good that there is not too much information, but digestible having me keeping attention in mind, which decreases after 20 minutes […]. And not too much at a time, but rather requesting whether the main messages and "take-home-message" have been captured. A bit like compressed, and therefore I a think that 30 minutes is more than enough, or just right

On the other hand, time for discussion was perceived as a crucial element. Kevin said:

> The framework around the AD visits is in a way that it is an opportunity for discussion. And that is incredibly good. Yes, it is a prerequisite for success

Even if informants did not want to spend more time on AD visits, all of them wanted more time for practice-related discussions. Michael said:

> Actually, time is quite tight, and there is a lot of material to go through. So, all the times I have participated, there is not much room for questions and discussions

Importantly, the informants valued the combination of a short presentation followed by a brief discussion, and they did not want to lose the presentation part of the AD visit completely to solely have a discussion with the detailer.

When asked about how virtual visits affected the discussion, none of the informants perceived that the ability to discuss was compromised compared with in-person AD. Kevin said:

> There are no big barriers in doing this virtually. As long as you have both the lecture and the detailer digitally, and in a one-to-one conversation

Theme 4: Functionality and benefits of virtual AD

Overall, all informants had a very positive attitude towards virtual AD visits. Hannah thought it was easier to participate virtually and Thor had nothing to complain about as it worked remarkably well. In general, the informants did not experience any technical challenges with virtual AD visits as many of them were accustomed to digital meetings due to the COVID-19 pandemic. However, a fast and reliable internet connection and a high-quality web camera and headset at both ends were pointed out as particularly important for a successful virtual AD visit.

Positive aspects with virtual over in-person AD visits were *less travel for the detailers* which was also mentioned as a *positive for the environment*, it r*educed the risk of catching and spreading the* COVID-19, it was more *flexible both for GPs and the detailers*, and *easier to schedule*. Another benefit of virtual AD visits was the chance for GPs working in remote areas to participate in AD visits as Thor pointed out:

> I live in a small town. It is quite far from a university environment, you know. I do not think they have had AD visits here before.

Both Irene and Harriet felt that virtual AD was less intimidating than in-person AD. Irene said:

> It is almost that you feel it is less intimidating, in a way, when it is virtual, one-on-one compared to when the person is present physically.

Having non-verbal communication signals in mind, we asked specifically whether communication was influenced by virtual AD compared with in-person AD. None of the informants felt that communication had been impaired during virtual AD, not even the experienced informants who were familiar with both modes of delivery.

Finally, if given a choice of mode of delivery in the future, most informants stated they would prefer virtual meetings.

Theme 5: Learning outcomes presumably unaffected by mode of delivery

None of the informants expressed that their learning outcomes were affected by the virtual AD delivery, and even those with AD experienced reported no differences. It seems that achieving learning outcomes is related to other factors, namely: (1) that AD provided useful and relevant evidence-based information that informants could apply to address patient-related problems and other challenges, (2) that AD was delivered one on one by academic detailers, which was highly regarded for its unbiased and commercial-free information and (3) that there was room for discussion with the detailer. When Julia, who found both AD modes equally good, was prompted with the question "And compared with the in-person AD visit, did you get as much information in virtual AD?", she said: "Yes, actually I think that". When the interviewer pushed her and asked "And there was no difference in learning outcomes or the information you received?", she replied "No, not for me".

Marcus stated that it was important that the detailer asked follow-up questions to ensure that the GP was still 'on track' and Irene found it essential that she could see the face of the detailer throughout the presentation:

I got to see some slides, and there were some figures that I might remember, but the bullet points are kind of "fast in - fast out" (laughter) […] it works less efficiently than looking at someone who talks and explains to me exactly what was in the bullet points (Irene)

DISCUSSION

In this study, interviewing Norwegian GPs that had received virtual AD, we identified five overarching themes concerning (1) that AD is highly valued and that the characteristics of the detailer is important, (2) determinants for participation in AD visits, (3) the paradox between the desire for more discussion and the time restraint, (4) that virtual AD visits worked very well and have many benefits and (5) that learning outcomes were perceived unaffected by mode of delivery. When asked which mode of delivery informants would prefer in future, most said that they preferred virtual visits to in-person visits. Our findings contrast with previous studies showing that GPs in general prefer in-person AD visits.[20 30] It is worth keeping in mind that our study was performed during the COVID-19 pandemic, and results should be confirmed in a post-COVID-19 period with a larger sample size.

One reason for the highly positive attitude towards the virtual AD among our informants seems to be their confidence and trust in the detailers as independent and credible providers of evidence-based information. This was emphasised by both AD experienced and AD-naïve informants and may in fact be more crucial for their experience than the mode of delivery. Especially when virtual meetings were performed without any technological challenges. A second reason for the positive attitude may be the informants' experience of flexibility offered by virtual meetings, both for themselves and for the detailers. Informants themselves pinpointed the benefit for detailers that more easily could schedule more visits and reach more GPs, also in remote areas through virtual AD. It is noteworthy that not only is virtual AD acceptable to GPs as an alternative to in-person consultations but it also presents potential advantages to the healthcare system in terms of time and cost savings associated with travel. This, in turn, may expand the opportunities for engaging a broader network of GPs. A third reason could be that all informants were on beforehand positive to digital tools and platforms, as they had all participated in a virtual AD visit and had accepted interviews through digital media. Future studies should investigate perceptions and preferences also among technology-adverse GPs. Meanwhile, virtual AD visits could be offered as an option to in-person visits, so that GPs have the possibility to choose themselves. Lastly, even if our informants did not mention the sustainability of the AD service, it is essential to bear this in mind when advancing the development of the virtual AD service.

That mode of delivery was not perceived to influence learning outcomes was surprising and may have several explanations. First, this is the informants' perceptions, and we do not know what they learnt during the AD visit or how this might influence their prescribing practice. This aspect warrants further investigation using pharmacoepidemiological methods to identify prescribing changes, similar to the studies conducted by Langaas and Espnes *et al* following previous AD campaigns.[7 14 15] Nevertheless, we maintain the belief that AD can impact prescribing practices. This belief is supported by the well-established understanding that tailored education, which addresses specific knowledge gaps and offers practical guidance, can significantly enhance an individual's capacity to implement and sustain behavioural changes.[31]

Second, the COVID-19 pandemic caused a change in communication patterns, with a shift towards digital communication during lockdown periods.[32] Consequently, many of the existing digital barriers towards virtual AD previously pointed out by Hartung *et al* may have been eliminated among the informants in our study.[20] Third, factors pointed out as important to achieve learning outcomes seems to be more related to teaching approaches rather than delivery mode. Our informants emphasised the one-on-one delivery, the independent and unbiased detailer and the evidence-based information to promote learning. Fourth, the informants did not experience a hampered communication due to loss of non-verbal signals and cues during the virtual AD visit. This contrasts with the study by Nenninger *et al* where they point out several communication obstacles seen from the detailers' perspectives, when switching from in-person to virtual AD visits, for example, difficulties in detecting non-verbal cues such as leaning in or out, signalling increasing or decreasing interest.[33] It might be that these communication signals are more important to detailers than to prescribers, as the detailers are the ones to control the learning situation and consequently dependent on capturing these signals. Fifth, the informants did in fact identify several beneficial elements of virtual AD visits compared with in-person visits, the most important being the ability to participate even when practicing in remote areas, receiving AD visits independently of other GPs in the same clinic, as well as during home office time. These positive experiences may overshadow any negative experiences and influence how the learning outcomes are perceived. Future studies should explore whether prescribing patterns and patient outcomes are influenced by mode of AD delivery, in addition to how mode of delivery influences the detailers' experience of AD visits, as suggested by Avorn and Nenninger *et al*.[6 33]

Discussions and interactions between the GP and the detailer are crucial features of AD to achieve learning outcomes.[6] All informants in this study emphasised the importance of this discussion regarding their own practice. Paradoxically, no informants wanted to devote time from the presentation in favour of a longer discussion. Neither were they interested in a longer AD visit due to time constraints in a busy clinic. This contrasts with findings in a systematic review by Van Hoof *et al*, showing an

average time for an AD visit of nearly 90 min. Scheduled AD visits in Norway are 20 min and have been shown to significantly change prescribing practice.[8] Virtual mode of AD delivery may present opportunities for adaptations of the AD content to better fit both the detailer and the prescribers, thus improving the service.

The AD methodology recognises the importance of building a trusted collaborative professional relationship between the academic detailer and the prescriber.[34] As our informants did not find this important and emphasised that their learning outcomes did not depend on their relationship with the academic detailer, we hypothesise that an established relationship between the detailer and the prescriber may be more important for the detailer. Without this relationship, the detailer may risk not reaching the understanding of prescribers' knowledge, skills, beliefs and attitudes. This understanding may be more profound with virtual meetings and should be further explored.

Strengths and limitations

The main strength of this study is that those conducting the interviews and performing the analysis were independent of the organisation delivering the AD visits. In addition, we have a diverse study population with informants from different parts of Norway, who had been visited by different detailers. The main limitation of the study is that the informants were highly accustomed to digital media and selected based on participation in virtual AD, which means they already had a positive attitude to digital platforms and media. This may be partly because the study was conducted during the COVID-19 pandemic, and it is consequently likely that results are influenced by this context. However, the use of digital communication and media has undergone drastic changes as a result of the pandemic,[32] and it is possible that we may not return to the pre-COVID-19 norms and perceptions. Furthermore, the small sample size and that only GPs that had received virtual AD were recruited (and not those who had not received AD virtually) limits transferability. Finally, only six GPs had experienced both in-person and virtual AD, enabling them to make meaningful comparisons between these delivery modes.

CONCLUSION

In this study, we found that a group of video-interviewed Norwegian GPs were very positive towards virtual AD delivery and would like to be offered this mode of delivery in future. The informants emphasised the flexibility of virtual AD visits, both for the GPs and the academic detailers, in addition to the possibility for better distribution to rural and remote areas. The virtual AD visits were not perceived as compromising learning outcomes compared with in-person visits. Further studies should explore how mode of AD delivery affects prescribing and patient outcomes, in addition to preferences of virtual AD visits among GPs without any in-person or virtual AD experience. In addition, the detailers' perspectives should be investigated to further define the AD format and execution.

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Contributors BHG and ECL planned and conducted the interviews, performed the qualitative analysis, drafted the manuscript and prepared tables and illustrations. BHG and ECL are responsible for the overall content, and accepts full responsibility for the finishedwork and the conduct of the study, had access to the data, and controlled the decision to publish. JS, JAJ, HCL and TN participated in interview guide development, recruiting participants and discussing final analysis themes. All authors contributed to writing, reviewing and editing the manuscript and have approved the final version.

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