



## Deliverable 4.6

Assessment of the  
STOP intervention  
– a MAST analysis



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## Executive Summary

This document presents an analysis of the STOP project according to the Model for Assessment of Telemedicine (MAST). It provides a multidisciplinary assessment that summarizes and evaluates the result of the STOP project. A total of 16,068 women underwent IPV screening and 1195/14013 (8.5%) and 350/2055 (17%) screened positive in Denmark and Spain, respectively. Women who were identified as being exposed to IPV were offered the STOP intervention which comprised a safety planning app and video consultations. Out of 485 eligible women, 104 accepted the offer and 56 completed the scheduled counselling sessions. The STOP intervention significantly increased the women's empowerment as well as decreased both physical violence, non-physical violence, and post-partum depression. Qualitative interviews were conducted among 29 who had received the STOP intervention. In general, the women found the video counselling both highly acceptable and feasible, whilst the safety app was acceptable but not feasible. The video counselling was considered helpful, and supportive. Further, the women found the digital solution offered flexibility in regards of scheduling the counselling sessions as well providing comfortable surroundings compared to face-to-face counselling. Also, the women found that the set-up of the safety planning app and the monthly meetings were appropriate in guaranteeing the women's safety. The economic and organizational assessment revealed that the STOP intervention can be implemented in routine antenatal care at a modest cost. Considering the results obtained from the STOP project, we recommend that pregnant women are routinely screened for IPV as part of antenatal care, and those who screen positive for IPV are offered video counselling with trained counsellors.

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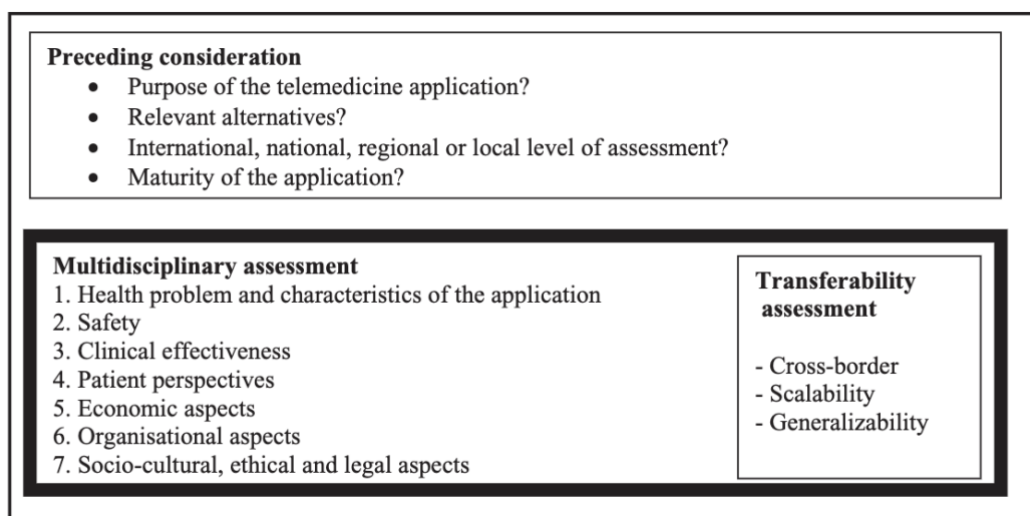
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# 1. INTRODUCTION

## 1.1 Purpose of the document

This deliverable provides an assessment of the STOP project based on the Model for Assessment of Telemedicine applications (MAST), which is a structured framework for assessing the effectiveness and contribution to quality of care of telemedicine applications (Kidholm et al, 2012). The MAST model includes the following three elements: Preceding considerations, a multidisciplinary assessment of the outcomes, and an assessment of the transferability of results.

**Figure 1. The elements of the MAST model**



(Kidholm et al, 2012)

## 1.2 Structure of the document

According to the MAST framework, this document will firstly describe issues considered in the design and implementation of the STOP intervention. Secondly, it will provide a multidisciplinary assessment of the outcomes of the STOP telemedical intervention within seven domains of outcomes and aspects, and thirdly it will provide an assessment of the transferability of results found with references to the scientific literature and results from empirical studies. This delivery will summarise many of the findings from other deliveries as well as supplement them with new findings, which will entail a multidisciplinary assessment of the STOP interventions.

# 2. PRECEDING CONSIDERATIONS

Intimate partner violence (IPV) is a major public health issue. Pregnant women are particularly vulnerable, as the violence affects both the women and their unborn infants. Violence during pregnancy has been reported to increase the risk of a broad range of disorders, including pregnancy-related complications and depression as well as adverse perinatal outcomes such as preterm birth, low birthweight, perinatal death, and shortened breastfeeding duration (Donovan et al., 2016, Hill et al., 2016, Sigalla et al., 2017, Normann et al., 2020). The estimated prevalence of

IPV exposure during pregnancy varies, however, a meta-analysis of 152 studies from more than 50 countries showed that the average prevalence was 9.3% for physical violence alone, 5.5% for sexual abuse, and 18.7% for emotional abuse (Román-Gálvez et al., 2021). Additionally, the Covid-19 pandemic lockdowns and subsequent social isolation has increased the overall prevalence of IPV worldwide (Almeida et al., 2020).

Antenatal care is considered a window of opportunity to reduce IPV in general, as pregnant women's concern for their unborn child may motivate them to share their exposure to violence (Flaathen et al., 2020). When pregnant, a woman is usually attending a screening program aimed at assessing a variety of risks, and in some countries IPV is already included among these. Yet, women may not disclose IPV during face-to-face antenatal consultations due to self-blame or presence of their violent partner (Garnweidner-Holme et al., 2017). One way to address this issue would be to offer a pregnant woman a digital self-administered screening tool (Bacchus et al., 2016, Walter et al., 2021, Hussain et al., 2015), and if the woman screens positive, offer her an intervention (O'Doherty et al., 2015, Chisholm et al., 2017).

Overall, digital intervention studies have shown conflicting results as to the potential effects of reduction of IPV and related health outcomes (Linde et al., 2020). However, studies targeted pregnant women have found that these types of interventions do have potential in relation to this specific group (Bacchus et al., 2016, Walter et al., 2021). More specifically, a Norwegian study indicates that women find the antenatal care setting a safe place both to respond to the IPV questions and to watch a video with safety behaviours, and the women suggested that the digital intervention should be supplemented by face-to-face communication with a midwife (Walter et al., 2021). Additionally, a study from the United States suggests that digital screening for IPV in antenatal care allows women to communicate openly about a highly sensitive topic, such as IPV, as it reduces the anticipated stigma associated with disclosing exposure to violence (Bacchus et al., 2016). Further, a 2019 randomized controlled trial from the United States showed that pregnant women found an educative computer intervention helpful and that it had potential to reduce IPV (Zlotnick et al., 2019). However, the evidence of the feasibility and effect of digital screening for IPV among pregnant women coupled with a digital intervention in a European context is still limited.

### 3. MULTIDISCIPLINARY ASSESSMENT

The purpose of this multidisciplinary assessment is to produce a basis for decision making based on an evaluation of the telemedical intervention with regards to 1) Health problem and characteristics of the application; 2) Safety; 3) Clinical effectiveness; 4) Patient and provider perspectives; 5) Economic aspects; 6) Organizational aspects; and 7) Socio-cultural, ethical, and legal aspects (see figure 1).

#### 3.1 Health problem and characteristics of the application

##### 3.1.1 Health problem

In Denmark and Spain, 1.8% and 3.6 % of pregnant women have reportedly been pushed, hit, slapped, kicked, choked, or physically hurt in some way during their most recent pregnancy (Lukasse et al., 2014, Martin-de-Las-Heras et al., 2019). Violence during pregnancy is associated with a range of adverse outcomes including miscarriage, stillbirth, premature labour, foetal injury, and low birth weight (Hill et al., 2016). In addition to the physical harm, women exposed to

IPV also suffer from an increase in postpartum depression (Rogathi et al., 2017). To address the problem of IPV among pregnant women, the overall aim of the STOP project was to implement digital screening for IPV in antenatal care as well as developing and evaluating the effect of a digital supportive intervention for pregnant women exposed to IPV.

### *3.1.2 Characteristics of the intervention*

The STOP digital intervention comprises two components: (1) digital screening for IPV in antenatal care and (2) a digital IPV supportive intervention – in the form of video counselling and a safety planning app – targeted pregnant women exposed to IPV.

#### *Digital screening for IPV in antenatal care*

In Denmark, the screening for IPV was incorporated into the “Patient Reported Outcome (PRO) data”, which is a digital questionnaire offered to all pregnant women in the first trimester. It concerns general health conditions including screening questions for IPV. The pregnant women received the questionnaire through the app ‘My Hospital’, which is used at all hospitals in Region of Southern Denmark. Once the women had completed the questionnaire, a summary of their response was attached to their electronic health record and the answers were discussed at the woman’s first midwifery consultation around gestational week 16. In Spain, pregnant women were invited to fill in a digital IPV questionnaire using a specially designed app during their first routine antenatal consultation. Here they were asked to respond to IPV screening questions and to provide various socio-demographic characteristics. The app prompted the women to provide their contact information (phone number and/or email address). In both countries, the screening was based on validated psychometric tools, more specifically the Abuse Assessment Screen (AAS) and the Women Abuse Screening Tool (WAST). AAS comprise 5 questions with binary response options on physical, emotional, and sexual violence from a partner or close relative within or prior to the past 12 months (Soeken et al., 1998). WAST measures conflict and tension with the partner through a 2-item instrument that rate tension/conflicts on a 3-point scale ranging from 0-2 (Brown et al., 1996). Women were considered exposed to IPV (screened IPV-positive) if they reported violence on either ASS or WAST.

#### *Digital IPV supportive intervention*

The digital intervention consisted of video consultations with an IPV counsellor and access to a safety planning app. The intervention was co-created with women who previously had been exposed to IPV (n=6), psychologists, midwives, and Non-Governmental Organizations (NGOs) working within the field of IPV (n=13). Focus group discussions, individual interviews, and workshops were conducted in both Denmark and Spain to discuss and receive input about the needs of women exposed to IPV, their existing ways of handling IPV, and their expectations to a digital intervention. Based on the input given by the women and health providers/NGOs, the following themes for an intervention were identified: (1) lack of acknowledgement of being exposed to IPV, (2) ambivalent emotions towards the partner; (3) lack of resources and worries about being on their own, (4) low self-esteem making it difficult to make decisions, and (5) isolation. These themes were incorporated into the design of the digital intervention and translated into content and technical specifications for the video counselling and the safety planning app in line with elements from Mary Ann Dutton’s Empowerment model (Dutton, 1992) and the Psychosocial Readiness Model (Cluss et al., 2006). Specifically, elements concerning safety planning,

enhancement of decision making and problem solving, and healing psychological reactions of the abuse were included (Dutton, 1992) as well as elements that strengthened internal factors such as awareness, perceived support, and self-efficacy, which affects a woman's likelihood of movement toward change (Cluss et al., 2006).

### 3.2 Safety

Issues of safety in relation to telemedical interventions can be divided into clinical safety and technical safety. The clinical safety of the STOP intervention was addressed during the inclusion as well as during the counselling. In both Denmark and Spain, women were excluded from the intervention if they (1) could not be informed about the study without their partners or other family members knowing about it; (2) did not have the mental or physical capacity to participate in the study; (3) and were under the age of 18 in Denmark and 16 in Spain. Further, all women had to provide written informed consent before being enrolled in the study.

In relation to the counselling, virtual monthly meetings were arranged in Denmark where the midwives who counselled the women discussed complex cases together with a psychologist with vast experience in IPV. If the women's safety was at stake, the women were contacted, and the municipal was notified. In Spain, psychologists who counselled the women were in direct contact with an experienced psychologist in IPV to discuss the situation of women at high risk. If women's safety was at high risk, they were referred to specialised IPV services. The risk of suffering violence was measured with the EPV-R scale (Echeburúa et al., 2010).

In relation to the technical safety, the safety planning app was camouflaged to look like a common pregnancy app, and for security reasons, the women had to log on to this element to open it. In case the woman needed to exit the app fast, they could press a quick-exit button, where they would return to the camouflaged part of the app. Additionally, a protocol was developed to protect women's safety in case that their partner appeared during a video counselling session, which consisted of a change of topic by the psychologist to maternity-related issues following a signal from the woman. Further, safe digital solutions that were already being used within healthcare ("My Hospital") were used to ensure technical safety for both women and health personnel.

In the qualitative evaluation of the STOP intervention, both the women and providers found that the set-up of the safety planning app and the monthly meetings were appropriate in guaranteeing the women's safety as well as the risk of emotional exhaustion among the counsellors. Additionally, the STOP project in Spain underwent an external risk analysis check, which found no safety risks.

### 3.3 Clinical effectiveness

The study design was a single arm cohort study, where all women who screened positive for IPV were offered a digital solution addressing IPV and followed for three months. The clinical effectiveness of the IPV digital solution was assessed pragmatic through a pre-post intervention analysis of the intervention's effect on empowerment, violence exposure and depression. The PICOs were as follows: **P**atients were women who screened positive for IPV; **I**ntervention was the safety planning app and IPV counselling; **C**omparator was the preintervention scores; and **O**utcomes were Index of Abuse Score (ISA) (Hudson and McIntosh, 1981), Edinburg Postpartum Depression Score (EPDS) (Eberhard-Gran et al., 2001), and Movers Score (Goodman, 2014).



### 3.3.1 Patients

A total of 19,442 pregnant Danish and Spanish women were invited for IPV screening, and 16,068 women (83%) completed the screening with the vast majority residing in Denmark. In all, 1195/14013 (8.5%) of the Danish women screened positive for IPV. The corresponding figures for Spain were 350/2055 (17%). In total, 104 women out of 485 eligible women received the safety planning app and video counselling of which 56 completed the scheduled counselling sessions (40 in Denmark and 16 in Spain).

**Table 1. Overview of screening and video counselling**

	Denmark N	Spain N	Total N
Pregnant women invited for IPV screening	17,220	2,222	19,442
Pregnant women screened for IPV	14,013	2,055	16,068
Pregnant women who screened positive for exposure to IPV	1,195	350	1,545
Pregnant women eligible for video counselling and safety planning app	305	180	485
Pregnant women who started video counselling	54	50	104
Pregnant women who completed video counselling	40	16	56

Overall, the numbers show that it is feasible to conduct digital screening during pregnancy, yet only about 10% of those who screened positive to IPV were offered video counselling. One of the reasons for this was that in the Danish context, video counselling/safety planning app were prioritised for those women who reported severe exposure to violence, and as many women only reported mild exposure (n=677) these were not offered counselling. In the Spanish context, women who reported “mild” exposure to IPV were also offered video counselling/safety app. Among those women who were invited for video counselling and offered the safety planning app (n=485), a total of 203 women (DK: n=170; ES: n=33) stated that they were not interested in it or that IPV was not an issue anymore.

### 3.3.2 Intervention

All women were initially offered six video consultations unless the IPV counsellor and the women jointly agreed otherwise during the intervention period. The sessions specifically addressed the following topics: (1) Evaluation of abusive behaviours, (2) Safety planning, network, and resources, (3) Psychoeducation, (4) Self-esteem and self-care, and (5 & 6) Empowerment, choice-making, and problem-solving. The consultations were scheduled every second week at a time where the women felt comfortable.

The effect of the intervention was assessed through change in severity of IPV exposure, change in empowerment and change in depression. Severity of IPV exposure was assessed through the Index of Spouse Abuse (ISA) scale, which is a 30-item instrument designed to measure the severity of physical and non-physical violence (Hudson and McIntosh, 1981). Level of empowerment was assessed through the Measure of Victim Empowerment Related to Safety (MOVERS) – a validated 13-item survey with questions within three domains of empowerment (Goodman, 2014). Further, pre/postintervention depression was measured through the Edinburgh Postnatal Depression Scale (EPDS), which is a 10-item validated questionnaire aimed to detect postnatal depression (Eberhard-Gran et al., 2001)

### 3.3.3 Comparator

The ISA, MOVERS and EPDS questionnaires were filled in pre- and postintervention. The pre-intervention data were used as comparator.

### 3.3.4 Outcomes

In both Denmark and Spain, the quantitative pre- and post-intervention analysis showed that the intervention significantly increased the women's empowerment as well as decreased both physical violence, non-physical violence, and post-partum depression. In Denmark, the largest changes were seen within empowerment where a difference in score pre- and post-intervention was found to be 5.14 (95% CI: 1.62 to 8.66), and within post-partum depression, which had a change in score at -3.86 (95% CI: -5.94 to -1.79). The intervention was also found to decrease both physical violence (difference in score: -4.83; 95% CI: -9.58 to -0.8) and non-physical violence (difference in score: -7.04; 95% CI: -14 to -0.8), however, these changes were only borderline significant. In Spain, a key finding was a significant increase in the empowerment of the participants, with a difference in pre-post score of 9.08 (95% CI: 4.51 to 13.65), and a decrease in the depression scale with a change score of -3.88 (95% CI: -5.58 to -2.17).

## 3.4 Patient perspectives

To get in-depth information about the acceptability and feasibility of the video counselling and the safety planning app, both pregnant women who participated in the counselling and the health providers who conducted the counselling were interviewed. Two separate semi-structured interview guides were developed for both countries in English; (1) for pregnant women, and (2) for health providers. Afterwards they were translated into Danish and Spanish. The interview guides were structured according to the MAST framework and had themes concerning the acceptability and feasibility of the counselling. Informed consent was obtained, and the interviews were audio taped and transcribed. The transcribed data were analysed in Nvivo by use of combined deductive and inductive coding, i.e., themes were deducted from the MAST framework and supplemented with codes that inductively arose from the transcripts.

In Denmark, a total of 20 interviews were conducted between one month before and two months after delivery. The setting for the interviews were according to the woman's preference – most often the interviews took place in the woman's private home (n=7) or virtually (n=7), otherwise at the hospital (n=5) or via phone (n=1). The duration was between 45-90 min, and most often the interviews lasted between 70-90 min.

In Spain, after the counselling sessions, a total of 9 pregnant women who completed the intervention participated in qualitative interviews. The interviews were performed by a psychologist who did not conduct the counselling sessions. All the interviews were carried out virtually. The duration of the interviews was between 20-60 min.

#### *3.4.1 Acceptability and feasibility of the intervention (copied from D4.4)*

In the Danish setting, the pregnant women who had received the video counselling and the safety app, in general found the video counselling both highly acceptable and feasible, whilst the safety app was acceptable but not feasible. The video counselling was considered helpful, and supportive. Further, the women found the digital solution offered flexibility in regards of scheduling the counselling sessions as well providing comfortable surroundings compared to face-to-face counselling. For example, one woman stated that,

*“I think it [the video-counselling] was really nice and it helped so much that you could still be at home, because I didn't have the opportunity to leave” [pregnant woman, Denmark]*

The pregnant women also found it highly acceptable that the counsellors were midwives as they had a lot of trust in midwives and found that they had a private and safe space with them. The midwives who were interviewed supported the qualitative findings with the pregnant women. For example, one midwife said that,

*“[when we started] I thought I would miss seeing them [ed. the women in person] [...] and whether it would be possible “to hide” some way or another behind the video, but I am positively surprised about how good our counselling sessions have been, [...] and I have not had any major technical issues” [IPV counsellor, Denmark]*

Yet, in the Danish setting some interviewees also raised minor feasibility issues with the video counselling, e.g., a few had experienced issues with Wi-Fi-connections, sound delays during the counsellor or being uncomfortable with the digital solutions if having been exposed to digital violence. Regarding the safety planning app, both counsellors and pregnant women found that it was good app, but it was not used, i.e., it was not feasible as a supportive digital intervention. For example, one midwife stated that,

*“I thought the app was so smart and really well-designed, and I thought that it would be used [...], but the woman does not want to use it because she is scared that her partner would somehow discover her [ed. using the app]” [IPV counsellor, Denmark]*

In the Spanish setting, video counselling was considered an acceptable and feasible tool to offer pregnant women who are at risk of being exposed to violence. Women found the video counselling sessions as useful to improve their mental health, to be more aware of the situation in which they live in and to help them in the decision-making process. They highlighted the empowerment session of the video counselling. All the participants considered that the contents of the video

counselling met their needs, and all of them appreciated the fact that the intervention was performed via internet due to the flexibility it provided and the simplicity for the women, as they did not have to travel to a health centre. Additionally, the psychologists were in line with the participants, emphasizing that video counselling is a feasible intervention for pregnant women, especially due to the flexibility and safety that it provides.

Women who participated in the video counselling raised very few negative opinions. Mainly, some interviewees expressed concern about the partner showing up while they were on session with the counsellor. Some other minor negative aspects mentioned were the short duration of the counselling and the lack of attention to pregnancy-related changes that pregnant women may experience.

Regarding the safety planning app, participants found some of the features such as the diary and the resource map particularly useful as a companion for the video counselling. However, some women did not use them often, since they found it to be a good application but not fully suited to their current situation.

Overall, the qualitative interviews suggested that those women who accept to receive digital counselling find it both feasible and very helpful. Yet the safety planning was not a feasible digital tool to support pregnant women exposed to IPV.

#### *3.4.2 Perceptions of the intervention (copied from D4.5)*

The qualitative interviews with women who had participated in the intervention supported the quantitative findings and provided in-depth knowledge of how and why the intervention helped the women. A Danish woman explained how the video consultations empowered her and had helped her deal with the psychological violence, she was exposed to, and break out of the violent relationship. She said,

*"I want to say that the fact that I was part of this study entailed that I had someone to talk to every time he gaslighted me [ed. Type of psychological violence]. It allowed me to see that it was not just in my head. It has definitely been a steppingstone for me to move into a woman's shelter and get away from it [ed. the violent relationship]"*

Another Danish woman explained that her video counsellor was the only person she could talk to about her situation and that it really challenged her that the intervention finished because she feared that it would lead to her going back into the violent relationship. She stated:

*"I think it was bad when it stopped [ed. the video counselling]. I could feel that when the pregnancy ended, I would not have anyone to talk about this anymore. And then I could end up going back to her. It was really an unpleasant feeling. Not having anyone there for me anymore"*

In Spain, the qualitative interviews also supported the quantitative findings (see section 3.3.4). One participant highlighted that video counselling helped her to realize different important aspects in

her relationship. She emphasized that it was not her fault being in a violent situation, allowing her to act,

*“I used to think that everything that happened on my relationship was all my fault, for spending too much time with my daughter, for attending her too much. But speaking with [ed. the counsellor] I realised that not everything is my fault [...]”*

Additionally, participants mentioned that having a counsellor had helped them to improve their mood, because they were able to talk about their problems, and sometimes she was the only person they were able to share these problems with,

*“This was very nice for me, because I have vented a lot [...]. I went from not knowing her, to vent with her [...] She transmitted so much calmness and peace, that I really wanted to speak to her*

Whilst another participant said that,

*“It was a big help for me, because I have had very bad moments with my partner, and the counsellor has helped me a lot. Listening to me and telling me that I am not crazy. Because It Is true that there have been moments in which I came to think that I was crazy and that I was the problem about everything. She helped me to stay sane”*

### 3.5 Economic aspects

A MAST evaluation also involves an assessment of economic aspects. This is considered important, as the cost of health care is rising, hence, there is an increasing need for prioritising the limited resources and for health care institutions to prioritise and decide whether to implement new technologies. Thus, the following section includes a description of the cost of upscaling the STOP intervention and making it a permanent offer to pregnant women exposed to IPV.

In Denmark, the STOP project was implemented in Region of Southern Denmark, which has a population of 1.228.362 inhabitants (2022)<sup>1</sup>. There are about 11,000 births per year in Region of Southern Denmark. The vast majority (97%) take place at the region's maternity wards in Odense, Svendborg, Kolding, Esbjerg or Aabenraa. The STOP project was embedded in routine antenatal care in the five mentioned hospitals. The women were screened for IPV as part of a PRO questionnaire which is sent out on a routine base to all pregnant women prior to their first antenatal care visit. Women who screened positive were followed up at their first midwifery consultation and offered a series of telemedical counselling sessions by trained midwives. Since the screening was embedded in the routine antenatal care and based on self-reported exposure, it does not require additional cost to make it a permanent activity. The outcome of the IPV screening was discussed at the women's first antenatal care visit and if she had screened positive, she was offered a series of video counselling sessions performed by midwives who were trained as IPV counsellors. Based on the outcomes of the STOP intervention (reduction in ISA and EPDS score and increase in empowerment score) and the associated cost, the Region of Southern Denmark has decided to make the STOP intervention a permanent offer for pregnant women. The table below

<sup>1</sup> [Danmarks Statistik: Statistikbanken](#)

describes the estimated monthly number of hours which will be spent on counselling, coordination, and supervision. The estimated number of hours are based on experiences from the STOP project.

**Table 2. Economic costs of implementing the STOP intervention (screening and video counselling) in Denmark**

<b>IPV Counselling</b>	<i>96 hours/month</i>
<b>Coordination</b>	<i>28 hours/month</i>
<b>Supervision and monitoring</b>	<i>28 hours/month</i>
<b>Psychological support</b>	<i>4 hours/month</i>

The counsellors and supervisors work at an hourly rate of €34. Thus, the annual cost for making the STOP intervention a permanent offer in Region of Southern Denmark is €63,512. Being a low-cost intervention embedded in routine antenatal care, the STOP intervention holds the potential of being scaled up at modest cost. Therefore, we recommend that all pregnant women are screened for IPV as part of pregnancy care in Denmark and those who screen positive are offered video counselling with specially trained counsellors.

The Region of Andalusia, Spain, has a population of 8.4 million inhabitants. The IPV screening and counselling was not embedded in routine antenatal care to the same extent as in Denmark, thus it will require more concerted efforts and better economy to make the STOP intervention a permanent offer for pregnant women. Screening for IPV can be implemented in the routine antenatal care if the time of the first antenatal midwife consultation is increased by 10–15 mins, with the hourly rate of midwives being €17.8. The cost of providing tablets to all the midwives in primary care in Andalusia to complete the IPV screening questionnaires would be €30,400. Women who screen positive would be offered a 6-session video counselling by a psychologist specialised in IPV. Currently, this service is not present in the Spanish (Andalusian) public health system, and thus it would be necessary to hire new staff to perform the video-counselling sessions. Psychologists hourly rate is also €17.8. According to the data obtained in the STOP Project, the table below depicts the estimated number of hours that would be required to perform screening and video counselling in the whole Region of Andalusia.

**Table 3. Economic costs of implementing the STOP intervention (screening and video counselling) in Spain**

<b>Screening</b>	<i>1,006.8 hours/month</i>
<b>IPV Counselling</b>	<i>543.7 hours/month</i>
<b>Coordination</b>	<i>140 hours/month</i>
<b>Supervision and monitoring</b>	<i>140 hours/month</i>
<b>Psychological support</b>	<i>30 hours/month</i>

Additionally, the primary care health system in the Region of Andalusia does not have an internal application to perform video consultations, so an external one is required, at an annual cost of

€500. Thus, the annual cost for making the STOP intervention a permanent offer in the Andalusian region of Spain is €429,422. Considering the low-cost of implementing the screening and intervention and the results obtained from the STOP Project, we recommend that pregnant women are routinely screened for IPV as part of antenatal care, and those who screen positive for IPV to be offered video counselling with trained counsellors.

### 3.6 Organisational aspects

The organisational domain in the MAST evaluation considers resources that should be mobilised and organised in the implementation of a telemedical intervention. An important question is whether the intervention will fit smoothly into the existing organisational framework. If not, changes may be necessary to make the intervention fit within the organisation. This can be handled in two different ways: either the organisation is adapted to fit the technology, or the technology is adapted to fit the organisation.

The last approach was applied in the Danish setting, where the existing antenatal care organisation was considered when developing and implementing the STOP intervention. More specifically, the screening was implemented via 'My Hospital', which is a free program that can be used via phones, tablets, or computer. The program is currently in operation at all hospitals in Region of Southern Denmark. "My Hospital" provides information about scheduled appointments for patients and their specific treatment. It also allows for the possibility for direct communication between patient and health staff. Additionally, the follow up of women who were screened positive for IPV and the counselling of women who were exposed to IPV was embedded in the routine antenatal care. Midwives were responsible for this task since they have access to the patient data in "My Hospital". Thus, the midwives followed up on the screening results and notified the women who were screened positive about the possibility of receiving telemedical counselling. If the women showed interest, she was phoned by a midwife who informed her in more detail about the counselling. "My Hospital" was also used to schedule counselling appointments and as a platform for the telemedical consultations. The organisational set-up of the STOP intervention in Denmark has allowed for making the intervention a permanent offer to pregnant women. Clinical guidelines on how to handle the IPV screening and the counselling have been drafted and a coordination and monitoring system has been set-up to support the ongoing IPV screening and counselling. A collaboration across the departments of gynaecology and obstetrics has been established and the cooperation between the antenatal care clinics and the family outpatient clinics has been strengthened through regular meetings where specific IPV cases are discussed, and experiences exchanged. Cooperation is also established with the municipal health care.

Also, in the Region of Andalusia, Spain, the technology was also adapted to fit the organisation. The STOP project screening process was integrated in the existing antenatal care consultations in primary care centres. Due to the lack of a program similarly 'My Hospital', a program was developed to perform the screening on Android devices, and then supplied the antenatal care consultations with Android tablets. All collaborating midwives received a 2-hour formation on IPV screening, and their collaboration was monitored and coordinated by a member of the STOP Project. To screen pregnant women for IPV, midwives used the tablets containing the screening questionnaires. In the first antenatal visit, women were offered to fill in the screening

questionnaires, which were then uploaded to a secure server. Those women who screened positive and agreed to provide contact information, were contacted by a psychologist from the STOP Project to explain and offer the video counselling intervention. Psychologists from the STOP Project collaborated with public municipal women's care and information centres to provide legal advice or additional resources to participating women.

### 3.7 Socio-cultural, ethical, and legal aspects

Research on violence against women raises important ethical and legal aspects. Hence, the nature of the topic means that issues of safety and confidentiality are even more important than for other areas of research.

The STOP project followed WHO's ethical guidelines for conducting research on gender-based violence<sup>2</sup>. The confidentiality of the women was ensured by assessing the IPV while the women were able to speak in private. The screening and video counselling tools were adjusted to adhere to strict security measures, such as employing password protection, camouflaging the safety planning app, and the possibility of rapidly closing the counselling sessions.

When investigating violence among pregnant women, it is not only the women's health that is at stake. In addition, there is a risk of co-occurring violence against her offspring. According to United Nations, States Parties shall protect the child from all forms of physical or mental violence, injury or abuse, neglect, maltreatment, or exploitation<sup>3</sup>. The STOP project adhered to these principles. The safety and situation of both the woman and child was assessed in relation to each counselling session and if necessary appropriate measures were taken to secure the well-being of the woman and child.

#### 3.6.1 Denmark

In Region of Southern Denmark, the STOP intervention was linked with the family outpatient clinics, which is an extended offer for pregnant women and children with special needs. If a woman was found to need special support, she was referred to the family outpatient clinics who then tailored an individual program for her. The clinic employs doctors, midwives, nurses, and social workers with the aim of offering the best possible support to the pregnant woman and her family during and after pregnancy with the intention of giving the child the best start in life.

The family outpatient clinics operates in accordance with the Danish Child Protection Law, where health professionals and social workers in the municipals are obliged to collaborate if they suspect a pregnant woman is living in a coercive relationship, which may place her offspring at risk of abuse or neglect. More specifically, pursuant to Section 46 of the Service Act and the Child Reform of 2011<sup>4</sup>, it is a municipal obligation to make special efforts in relation to pregnant women and families where there is concern for the offspring's well-being.

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<sup>2</sup> <https://www.who.int/reproductivehealth/publications/preventing-vaw-framework-policy-makers/en/>

<sup>3</sup> UN Convention on the Rights of the Child (1989), Article 19

<sup>4</sup> [https://danske.love.dk/service.love/46https and socialstyrelsen.dk/tvaergeraende-omrader/sagsbehandling-born-og-unge/om-sagsbehandling-born-og-unge/barnets-reform](https://danske.love.dk/service.love/46https%20and%20socialstyrelsen.dk/tvaergeraende-omrader/sagsbehandling-born-og-unge/om-sagsbehandling-born-og-unge/barnets-reform)



### 3.6.2 Spain

In Andalusia, Spain, psychologists, and supervisors were in contact with public municipal women's care and information centres. Women were directed to these services in case they wanted orientation about legal actions or if the psychologists considered that they would benefit from additional resources that are offered in these services.

The STOP Project in Spain and the health and social services that were involved in the project also adhere to the Decree 210/2018, of November 20th, of the Andalusian Government that explains the procedure for action in situations of risk and neglect of children and adolescents in Andalusia (SIMIA). In this decree, it is emphasised that there is an obligation of all public institutions to detect and report situations of child abuse or suspicion of it, specifically in antenatal controls. In the article 9, point 3, it is stated that, *“When situations of social risk of pregnant women or situations of prenatal abuse are detected, the health services, in coordination with the social services, will carry out follow-up and intervention necessary with the family unit for adequate protection, especially in cases of premature births, illness, disability or harm in the minor, youth of parents, lack of parental skills, lack of social support network, behaviour problems, addictions, diseases or disabilities of parents”*.

## 4. TRANSFERABILITY

During the past decades, impact of IPV targeted interventions have been assessed in an increasing number of quantitative studies, e.g., IN I-DECIDE in Australia (Hegarty et al., 2015), iSafe in New-Zealand (Koziol-McLain et al., 2018), IRIS in the United States (Eden et al., 2015), and iCAN in Canada (Ford-Gilboe et al., 2020). Most of these interventions are based on safety planning, which refers to strategies that increase women's safety by increasing awareness of IPV-related risks and providing the women with necessary skills to enhance their safety. Lately, digital interventions that can be implemented via telemedicine (Linde et al., 2020). are increasingly considered a means to improve women's safety. However, to our knowledge only few other studies have evaluated the combination of digital screening for IPV and a digital intervention consisting of several counselling sessions for pregnant women exposed to IPV, which limits the possibility of comparing our findings to other studies. A 2011 study by Zlotnik et al. (Zlotnick et al., 2011) tested an intervention of four face-to-face sessions during pregnancy and a “booster” session after delivery among a sample of low-income pregnant women of recent IPV and found an acceptance rate of 12.9 %, which is comparable to ours. In a recent randomised trial from Norway, the effect of a short 7-minute video intervention to pregnant women exposed to IPV was explored (Flaathen et al., 2022). The acceptance rate in this study was higher than ours, which could be due to length of intervention.

The STOP intervention has several strengths and limitations. A major strength is that it is the first large-scale cross-country study in Europe which has implemented both digital screening and a digital intervention to support pregnant women exposed to IPV. Hereby, this study provides both country-specific and cross-cultural evidence of the potential and challenges for digital solutions within the field of IPV in antenatal care. Another key strength is that data were collected prospectively, which limits the risk of information bias. Further, in both Denmark and Spain the screening and intervention were implemented in large non-selected populations, which heightens the transferability of the findings. Additionally, the intervention was co-created with women who had previously been exposed to IPV, psychologists, midwives, and NGOs working within the field of IPV, which ensures that the content and structure of the intervention is in line with needs of the

target group. However, despite this, only a low number of women accepted to participate in the intervention study. Besides the reasons given by the women, we hypothesise that other underlying motives could be difficulties for the women to acknowledge themselves as living in a violent relationship or fright for the consequences for themselves and their child by participating.

Another limitation is that there is no “gold standard” of how to measure IPV, and for this reason we used two different validated screening tools and had different inclusion criteria for the severity of the violence regarding whether women were eligible for the intervention. Danish women were only eligible if they reported “severe violence/tensions” with a partner whilst in Spain, women were also eligible if they reported “some tension” or “some difficulty” with their partner (WAST tool). The initial inclusion criteria in Denmark were an attempt to only reach women exposed to significant violence during pregnancy but the inclusion criteria may have had the opposite effect and excluded some of the women who deliberately underreported the IPV-exposure. Further, neither of the tools we used differentiated between different forms of emotional violence, such as stalking or digital violence. This could imply that certain types of emotional violence were not identified during the screening. Hence, there is a need for a further development of IPV screening tools and to reach an agreement of a gold standard for how to measure exposure to IPV.

Also, women were only screened digitally for IPV once, namely in the beginning of the pregnancy. However, in the Danish setting midwives followed up on the digital screening during the first antenatal appointment, which resulted in positive IPV screening result among five women who had initially not responded to the digital screening and six women who initially screened IPV negative. Hence, we recommend that the IPV screening is repeated in the second or third trimester as pregnant women may need time to realise that they are exposed to IPV or need more time to feel “ready” to disclose and reach out for help. In line with this, we also recommend that future studies offer a supportive digital intervention to screened positive irrespective of pregnancy length, and do not limit the inclusion period to certain gestational week as the STOP intervention did. This will help ensure that pregnant women exposed to IPV receive the support whenever they are ready.

Finally, the STOP intervention did not include non-Danish or non-Spanish speaking women, as the setup did not allow for involvement of interpreters. This limits the transferability of our results to immigrant populations who speak neither Danish nor Spanish. This is likely a particular vulnerable group in relation to IPV, we therefor recommend that future studies address this issue by training IPV counsellors who speak the most common immigrant languages.

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