

Video Conferencing in Group Training of Psychiatric Nurses

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Video conferencing (VC) technology transfers synchronous audio and video signals via standard telecommunication lines. VC has become a useful communication device in the mental health care sector in Norway, particularly in the northern counties. Training and supervision is considered one of the areas where VC has great potential. This study followed a group of nurses who used VC in a training program every other week over a period of six months. The group consisted of seven nurses (two supervisors and five supervisees). Data was collected from four of the VC sessions. User satisfaction and judgements on the effect of VC on critical aspects of the supervision were evaluated through questionnaires. In addition, a closing group interview was held to sum up qualitative experiences and attitudes. Results indicate that VC may indeed be an acceptable tool in group supervision. Participants reported that they were able to establish a climate for communicating on an emotional and personal level, as well as provide necessary feedback and psychological support.

Introduction

Telemedicine is defined as “the investigation, monitoring and management of patients, and education of patients and staff using systems which allow ready access to expert advice and patient information, no matter where the patient or relevant information is located”¹ Norway’s use of telemedicine was initiated in northern Norway in 1988 by the Norwegian Telecom company (now known as Telenor). In 1993, with the support of the Ministry of Health and Welfare, the Department of Telemedicine (TMA) at the University Hospital in Tromsø was established, and is now heading developments in telemedicine in Norway. Telemedicine efforts in northern Norway are motivated by challenges in fulfilling social and political goals of equal access to quality health care for 475,000 people inhabiting a coastline stretching 1012 kilometres. The ratio of patients to specialists in northern Norway is 1194:1, compared with 294:1 in southern Norway. Clinical video conferencing applications include telepathology, teleradiology, teledermatology, teleotorhinolaryngology, telecardiology, telegeriatrics and telepsychiatry, in addition to distance teaching in these and many other medical fields.

Today, there are approximately 55 video conferencing or picture phone units within health care in northern Norway. Training and education is one of the major uses of video conferencing. In psychiatry alone, these areas of use constitute 31% of 140 VC sessions over a 6 month period² This study is one of several being carried out by TMA in order to assess the quality and potential of these applications.

Method

Technology

The VC equipment used were roll-about with easy hand-held remote controls capable of up to 384 kbps (6 ISDN channels of 64 kbit/sec each). Three of the sessions were held on 384 kbps (optimal image quality), and one on 128 kbps (lowest image quality).

The subjects

The subjects were two supervisors, working in pairs, and five supervisees. The supervisors, both women, were highly experienced psychiatric nurses, trained and approved as clinical supervisors by the Norwegian Nursing Association. The supervisees, four women and one man, were nurses working in psychiatric wards. All subjects but one, were located at Asgaard hospital in Tromsø, the northern most psychiatric hospital in Norway. One of the supervisees was located in the southern area, in Oslo. While the one participating by VC from Oslo had previously experienced VC on 4-5 occasions, mainly demonstration sessions, the other group participants had no previous experience communicating by VC.

The supervision

The supervision is part of a psychiatric post-qualifying program, educating the supervisees to become supervisors themselves. Formal qualification requirements include both in-service training and group supervision, usually scheduled every other week over a period of 3 years. This group was starting on its third year when one of the supervisees moved to the southern part of Norway. As an alternative to her dropping out, they decided to continue sessions with her participating via VC.

Physical setting

Figure 1 shows the physical setting for supervision. The group, including both supervisors, sat in a half circle around a low table ensuring that all participants were included in the camera range (see A on figure 1). The supervisee in Oslo sat alone in front of a video-screen (see B).

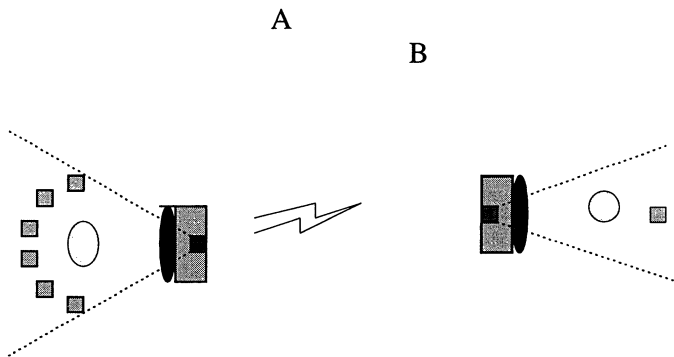


Figure 1

Research questions

The main issue examined was whether the quality of training and group cohesion could be maintained when one of the members participated via VC. Three questions were posed:

1. Which factors are critical in achieving the goals for the training program?
2. To what extent are these factors satisfactorily maintained using VC?
3. Are group members satisfied using VC?

Data collection

Two different questionnaires were used in addition to a closing interview.

The expectation questionnaire

The expectation questionnaire was used once prior to the first VC session, and had three sections:

1. Each subject ranked the following goals for participating in the supervision;
a) knowledge acquisition and comparing notes, b) learning through group dynamic processes, c) personal, emotional growth, and d) other goals.

2. Estimated significance for successful supervision was rated for each of the following 10 factors:

a) an atmosphere of warmth and safety, b) structure and control, c) unstructured, spontaneous communication, d) previously made agenda, e) climate which is conducive to emotional expression, f) perception of non verbal communication g) access to blackboard, flip-chart or acetates, h) use of role-play as a method, i) attention to individual needs of psychological support, and j) other factors.

A five-point scale was used: crucial-, great-, medium-, minor or no importance.

3. General expectations using video conference in supervision were rated on a five-point scale: very positive, positive, neutral, negative and very negative.

In addition, earlier experiences using video conference technology were recorded.

The experience questionnaire

This questionnaire was completed following each session, and is structured in three sections:

1. To what degree the following aspects had been satisfactorily taken care of in the actual session. The ten factors used in the expectation questionnaire were repeated in the experience questionnaire, with the rating categories: totally agree - partly agree - neutral - partly disagree - totally disagree.

2. General assessment of the actual session.

Rating categories were the same as question no.3 in the expectation questionnaire.

3. The participants were asked to note any preparations or efforts which would have improved their satisfaction with the session.

Questionnaires from three sessions using 384kpbs quality were selected. The group was complete (seven) in one of the sessions and six subjects participated in each of the other two sessions. A total of 16 questionnaires were completed from the three sessions. Three questionnaires were not returned.

Group interview

After the final session, a group interview was held with all participants face-to-face. The purpose was to sum up their qualitative experiences and attitudes. The interview was unstructured and lasted about an hour.

Results

Goals for the supervision

The two supervisors both ranked knowledge acquisition as their primary goal, and learning through group dynamic processes as a second goal. They both added "developing myself as a supervisor" as an important goal. The supervisees all ranked personal, emotional growth as their primary goal for participation in this supervision.

Factors assumed critical for successful supervision

Which factors are thought to be critical in achieving the goals for the training program? As shown in *Table 1*, all subjects considered an atmosphere of warmth and safety, a climate which is conducive to emotional expression and attention to individual needs of psychological support as factors of crucial or great importance. Six of the seven rated perception of non verbal communication as a factor of great importance. The ability to express unstructured, spontaneous communication, was considered a factor of medium importance by four and great importance by the other three subjects, and four rated use of role-play as a method as a factor of great importance. Structure and control of the process, a previously made agenda and access to blackboard, flip-chart or acetates was rated to be of minor or no importance.

Table 1

Factors assumed critical for successful supervision

	Crucial /Great importance	Medium importance	Minor / No importance	N =
An atmosphere of warmth and safety	7			7
Climate conducive to emotional expression	7			7
Attention to individual needs of psychol. Support	7			7
Perception of non-verbal communication	6	1		7
Unstructured, spontaneous communication	3	4		7
Use of role-play as a method	4	1	2	7
Structure and control of the process		6	1	7
Previously made agenda			7	7

Expectations towards use of video conferencing

General expectations towards using video conferencing in supervision were rated as positive or very positive by four of the seven subjects, the other three rated neutral on expectations.

Evaluation of video conferencing

A general assessment of the sessions was rated as very positive or positive in 14 and neutral in two of the 16 questionnaires. No one evaluated the sessions negatively.

The ratings of video conference sessions according to critical factors is as shown in *Table 2*.

Table 2

Ratings of the video conference sessions according to critical factors

The following aspects were satisfactory taken care of in the session:	Agree (totally / partly)	Neutral	Disagree (totally / partly)	N=
An atmosphere of warmth and safety	16			16
Climate conducive to emotional expression	16			16
Attention to individual needs of psych. Support	12	4		16
Perception of non-verbal communication	10	2	4	16
Unstructured, spontaneous communication	14	2		16
Structure and control of the process	14	2		16

All agreed that the two most critical factors were satisfactory taken care of in the three sessions of 384 kbps quality. They experienced the VC sessions having a warm and safe atmosphere, and a climate open for emotional expressions. In 12 of the 16 questionnaires they reported satisfactory attention to individual needs of psychological support. The sessions were also reported as having a satisfactory degree of both a structured and controlled process (14 of 16), and possibility of spontaneous and unstructured communication (14 of 16). In 10 of the 16 questionnaires, they reported that perception of non-verbal communication was satisfactory,

while four disagreed. The categories for a previously set agenda and the use of role-play as a method had a high degree of missing data and were dropped from the analysis.

Further comments by the participants

Comments given on the questionnaires and the interview material provide supplementary information. Some of the main themes are reported below.

Scheduling

There was some frustration over scheduling problems at the studio locations. The studio at Aasgard hospital was well organised concerning booking and technical support. However, the studio available in the Oslo region was a demo studio at a commercial distributor (in addition, a low quality (128 kbps) studio at Telenor (the Norwegian telecom)³ was used once). High traffic and insufficient scheduling routines at the demo studio resulted in delays and double-bookings, and gave the participants a feeling of unpredictability. These problems were reported to have highly negative impact on the motivation for further use of VC.

Technical aspects

Technical problems were another critical factor. Problems connecting the two sites resulted in some delays. The 128 kbps quality studio was used once, but the results were not included in the results reported above. The equipment differed not only on bandwidth (128 kbps), but also on other aspects such as the quality of video camera and quality and size of video monitor. Thus it is not representative of the 128 kbps quality equipment available today. This session was evaluated significantly lower on all aspects. Participants also reported temporary sound drop-outs, resulting in a need to frequently repeat what was said. The low video quality and small monitor size was reported to cause difficulties in perceiving non-verbal communication, and especially the facial expressions. These factors resulted in problems for the external participant to keep track of what was happening in the rest of the group. She also reported becoming more passive, assuming a listener role. She felt unable to maintain the role of an active participating member of the group when using this version of 128 kbps equipment.

Group size and physical organisation

The external participant reported some problems perceiving nuances and details of each person in the group, e.g. facial expressions. This was assumed to be related with the group size, because the camera had to be zoomed out in order to capture the whole group on the screen. Ideal group size was suggested to be around 2-4 persons. Also, the group had to rearrange the traditional group circle into a semi-circle facing the monitor (see *figure 1*). The participants seated at the outer wings of the circle found this uncomfortable.

Focus and attention

In the interview, the group also discussed the possibility that there may have been given a disproportionate amount of attention to the external participant, compared to the other members of the group. They reasoned that this may be due to a mutual interest by the other group members in ensuring that the external participant felt included in the group experiences. However, all participants agreed that they experienced the external participant as an equally active member of the group.

Previously established relationships

There was a general opinion in the group that success was greatly due to the fact that relationships between group members were well established prior to use of VC. The group

built upon a pre-existing atmosphere of warmth, security and trust. They were uncertain how VC would function in group supervision had this not been the case.

Discussion

In discussion of the results it is important to underline the fact that the participants in this study were highly motivated for use of video conferencing. The group had functioned as a coherent unit for two years when the one participant moved to Oslo. Everyone in the group expressed a desire to maintain the group as a whole, as well as ensure that all participants were able to complete the training program. Due to prohibitive travel distance and costs, video conferencing was their only alternative. Studies involving a greater number of groups under controlled conditions are necessary to build a reliable basis for evaluation. This study may thus be seen as part of the efforts to develop valid and reliable instruments for evaluating the growing use of video conferencing in the health sector. Nevertheless, the results of this study indicate that use of video conferencing in group supervision, based on the goals described, has potential. The participants in this group experienced a warm and supportive climate in the group. They felt comfortable and secure enough to utter emotional expressions, and were able to provide psychological support to all members. The group experience was maintained despite one member participating through a video conferencing screen.

Some factors appear critical for successful use of video conferencing:

- Practical arrangements for scheduling and booking the locations
- Technical stability with low failure frequency and continuous access to technical support personnel
- The number of participants at each site should be adapted to the focus of supervision. For this group, which had a personal and emotional focus, the optimal size at each site was estimated to be around 2-4 persons.
- It may be important for the participants to become well acquainted before basing supervision on video conferencing, especially when the supervision has a personal or emotional focus.

Practical issues such as these may indeed have a crucial effect on quality of VC supervision. The practical arrangements must be adjusted to fit the purpose, and the technology must function optimally. Supervision, both individually and in groups, is a well established technique for educating mental health professionals. Although the results of this study give only some indications of quality of video conferencing for this type of supervision, the overall picture is encouraging. Parallel to further studies which can provide guidelines for ensuring the quality of supervision, organisational issues should be addressed. For example, it is important that educational institutions develop strategies for utilising VC and other communication technologies to improve access to their resources, particularly for rural communities lacking health care personnel.

References

- 1- Advanced Informatics in Medicine (AIM), Commission of the European Communities. Supplement application of telecommunications of health care telemedicine. AI 1685, 1990.
2. Gammon D, Bergvik S, Bergmo T, Pedersen S (1996) Videoconferencing in psychiatry: a survey of use in northern Norway. *Journal of Telemedicine and Telecare*, vol.2, no.4;1-7.
3. Since the time of this study, the studio at Telenor Oslo has been updated to a high quality studio of 384 kbps.