Live Supervision: From the One-Way Mirror to Video-Based Online Supervision

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Summary
Live supervision enables a supervisor to gain insight into a running therapy session and to intervene with advice. Compared to forms of post hoc supervision, a distinguishing feature represents the immediate feedback of the supervisor towards the supervisee. During the last 60 years, different forms of live supervision have been developed which will be reviewed as a part of this article with regard to their practicability, acceptance, and efficacy. Due to the many benefits of video-based live supervision (bug-in-the-eye, BITE), we paid particular attention to this latest development of live supervision. During BITE supervision, the supervisor follows the therapy session online with the help of a video camera and has the opportunity to give the supervisee an immediate feedback via a monitor. This format of live supervision allows the supervisor to follow the therapy session from a different location via Internet. In the present article, concrete advice for the implementation of a BITE session is given. In addition, preliminary results concerning the acceptance of this method are presented based on 25 sessions of BITE supervision. The results show that BITE supervision is highly accepted by therapists, supervisors, and patients and is evaluated as useful and helpful. Concluding, it is discussed in which way BITE supervision could be integrated into the training of psychotherapists.

Schlüsselwörter
Live-Supervision · Akzeptanz · Effektivität · Bug-in-the-eye-Supervision · Psychotherapieausbildung · Prozessforschung

Zusammenfassung
**Introduction**

Supervision is, according to Bernard and Goodyear [2009], an intervention provided by a more senior member of the profession to a more junior member … of that same profession. This relationship is evaluative and hierarchical, extends over time, and has the simultaneous purposes of enhancing the professional functioning of the more junior person, monitoring the quality of professional services offered to the clients that she or he sees, and serving as a gatekeeper of those who are to enter the particular profession. Whatever the school of psychotherapy, supervision is an important component of psychotherapeutic training. Supervision is consistently evaluated by psychotherapists in training as well as experienced psychotherapists as an essential training component for the development of therapeutic expertise [Strauß et al., 2009; Zimmer, 2009]. There are a large number of supervisory formats. These can be grouped into roughly 3 categories [West et al., 1993]: supervision with post hoc verbal report, supervision by post hoc observation (e.g., by audio or video recordings), and live supervision.

In what follows, we describe the development of live supervision and present several variants of this form of supervision. An overview is provided of the studies on the efficacy and acceptance of live supervision by therapists, patients, and supervisors. In addition, data are presented from a pilot study on the acceptance of a new method of live supervision. Finally, we derive implications for research and practice, especially for the training of professional psychotherapists.

**Development of Live Supervision**

Traditionally, the supervisor used the verbal report of the supervisee about the progress of therapy as the sole source for evaluation of the supervisee’s efficacy. Psychodynamic therapeutic methods assumed that the transference and countertransference processes between therapist and patient would be mirrored in the supervisory relationship between supervisor and supervisee [Searles, 1955]. The insight thus gained into the therapeutic alliance by the supervisor was considered sufficient, together with the supervisee’s report, to promote the development processes and expand therapeutic competence. The actual observation of a therapy session was therefore rejected by analytical supervisors [Scherl and Haley, 2000].

With the advent of behavioral and family therapy approaches, alternative supervisory concepts emerged. In the 1950s, the one-way mirror was introduced as a tool in family therapy. Direct observation of a therapy session through the one-way mirror allowed different objectives to be pursued. First of all, the engagement/consultation of the supervisor behind the mirror or the assistance of an entire team of therapists (‘reflecting team’) [Andersen, 1990] was used as an intervention into the therapy. Secondly, this setting could be used for the training of therapists, with the aim of improving their therapeutic competence. Supervisors now had the opportunity to follow the course of therapy directly and to form their own opinions. This made it possible to avoid the disadvantages that arise from one-sided retrospective reports by the supervisee.

Verbal reports as the only source for assessing the course of therapy are problematic in several respects. The supervisee’s reports may be distorted or imprecise. Stein et al. [1975] found that supervisors would evaluate the severity of a disorder differently, according to the form of its presentation. After an exclusively verbal report by supervisees about the initial interview, the supervisors estimated the patient’s disorder as less severe than they did when they made their own evaluation based on a recording of the conversation. There can be different reasons for the supervisees’ distorted rendering of the course of therapy. For one thing, verbal reports can be distorted by the subjective perspective of the reporter. In psychotherapeutic training, according to the integrated development model of Stoltenberg and Delworth [1987], therapists who are at the first stage of development are focused emotionally and cognitively mainly on themselves. Through supervision and experience they gradually acquire more and more skills and knowledge, so that they are ultimately less insecure and self-conscious and reach the second stage of development. At that point they can concentrate better and adjust their therapeutic interventions to the patient’s reactions. The strong self-absorption of the first stage can mean that important aspects of the patient’s problems are overlooked or critical interactions in therapy are not perceived. For this level, Stoltenberg and McNeill [1997] emphasize the importance of structured supervision, focused on upgrading practical skills and theoretical knowledge, which the therapists in training are highly motivated to undergo. For supervisees in development stages 1 and 2, these authors recommend direct observation as a supervisory method.

Besides the possibility that a supervisee, because of his or her level of development, unintentionally does not give the supervisor an adequate view of what takes place in therapy, it is possible that he is not doing so deliberately. Self-disclosure on the part of the supervisee is a crucial prerequisite for effective supervision. Self-disclosure means that supervisees describe the course of therapy realistically and report everything they consider important, so that supervisors receive a comprehensive overview. Only under these circumstances can supervisors follow the course of treatment, keep the patient’s well-being in mind, and pay attention to the development and needs of their supervisees [Alonso and Ruttan, 1988; Ladany et al., 1996; Rønnestad and Skovholt, 1993]. Empirical studies that have dealt with a lack of self-disclosure by supervisees have found this to be a frequent issue. Of the supervisees surveyed by Yourman and Farber [1996], almost half did not discuss with their supervisors perceived clinical errors, at
moderate to high levels of frequency. In a study by Reichelt et al. [2009], two thirds of the supervisees said they found it difficult to talk to their supervisor about their uncertainty regarding their own therapeutic competence or the supervisory relationship. Ladany et al. [1996] found similarly high values of nondisclosure. 97% of supervisees surveyed could remember at least one situation in which they had not opened up to their supervisor.

These data indicate that limited self-disclosure is common during supervision. Although at present there is little empirical data on the nature, causes, and effects of nondisclosure, it can be surmised that the unreported and therefore not discussed clinical errors negatively affected the clinical outcome, the therapeutic alliance or the professional development, and competence of the supervisee.

Live supervision offers a format that allows the supervisor direct observation of the supervisee and thus an uncensored assessment of the therapy session and the supervisee’s level of development. This allows the supervisor to influence the therapeutic competence of the supervisee and to provide a suitable, need-oriented impetus for professional development.

Another aspect that supervisors can influence using live supervision is ‘treatment integrity’ [cf. Weck et al., 2011]. This includes the therapist’s adherence and competence. The therapist is understood to be adherent if he uses the desired interventions specified by the treatment manual and avoids undesirable methods. Competence refers to the ability and skill of the therapist in carrying out the treatment. Ensuring treatment integrity is an important prerequisite for the internal validity of therapeutic trials [e.g., Schlosser, 2002]. Therefore, treatment integrity in psychotherapeutic studies, as well as in psychotherapeutic training, should be checked and ensured. Materials with high information density should be used for the assessment of treatment integrity, such as video recordings of the therapy [Waltz et al., 1993]. It must be assumed that live supervision has just as high information density as therapy itself and that the supervisor’s feedback option can be appropriate to assist therapists in maintaining a high level of treatment integrity or to work to improve that.

**Supervisory Feedback During Live Supervision**

Supervisees must consent to participate in live supervision and must also agree to maximum self-disclosure. While now the maximum self-disclosure of the supervisee is an inherent part of every live supervision format, there are different options for supervisors, depending on the type of live supervision, to respond to what they perceive.

Initially, the only way to monitor therapeutic sessions, through a one-way mirror, was often frustrating for supervisors, because although they observed the therapist, they were unable to provide him with feedback on his behavior [Gordon, 1975]. Feedback could be given only after completion of the therapy session or considerably later, which limited the degree to which the therapist learned from the experience [Gallant et al., 1991]. Later on, however, formats were developed that allowed direct feedback from the supervisor, such as ‘phone-in’ and ‘knock-on-the-door’ supervision and ‘bug-in-the-ear’ live supervision.

During phone-in supervision, the supervisor may contact the supervisee in the therapy room by telephone, to give him (and his patient) direct feedback. Knock-on-the-door supervision means that the supervisor, where appropriate, knocks on the door of the therapy room to talk to the therapist. Another format is bug-in-the-ear supervision. Here the supervisee wears an earphone in one ear, through which he can receive instructions from the supervisor. The supervisor observes the therapy session either through a one-way mirror or a webcam. This method was used in the 1970s and 1980s, particularly in the context of behavior modification programs such as mother-child training [Wimberger and Kogan, 1974; Gordon and Kogan, 1975] and in the training of medical and psychotherapy students [Hunt, 1980].

In all 3 methods, the supervisor observes the therapy session in real time through a one-way mirror or with a webcam and can intervene directly in various ways and influence the course of therapy. These types of intervention are invasive and disruptive to one degree or another. The voice of the supervisor in the supervisee’s ear can sometimes be irritating (M. Linehan, personal communication), and knock-on-the-door supervision, by its very nature, disrupts the therapeutic process [Scherl and Haley, 2000].

**Further Development of Live Supervision**

To reduce the disadvantages of the knock-on-the-door, phone-in, and bug-in-the-ear supervision formats and continue to reap their benefits, alternative live supervision procedures were developed over the years, that enable the supervisor to observe the therapy and to intervene at the crucial points in a less invasive way. The development of computer technology helped to make this possible. It created new live supervision formats, whose central element is supervisor feedback on a monitor. The monitor is placed in the therapy room so that it is visible only to the therapist and allows the supervisor to communicate with the therapist. The supervisor observes the therapy directly, either by a one-way mirror or a webcam. There are various types of monitor-based live supervision, which differ in the way that supervisors provide feedback. The technique of Follette and Callaghan [1995] provides only a line on the monitor which moves up or down according to the performance of the therapists and thus gives them direct feedback on whether the supervisor is satisfied with what they have done. Here, no specific proposals are made. The ‘bug-in-the-eye’ (BITE) technique, which was first described by Klitzke and Lombardo [1991], allows verbal feedback from
the supervisor on the monitor, which can include intervention and improvement suggestions, praise, and verbal formulations (fig. 1).

Unlike the bug-in-the-ear format, in which the therapist is connected to the supervisor by earphone and hears the suggestions – whether the assistance is desired or not – the therapist can decide during BITE supervision whether to look at the monitor and whether to use the suggestions. For this reason, monitor-based live supervision is considered the least invasive method [Smith et al., 1998].

**Recommended Sequence of BITE Supervision**

According to Scherl and Haley [2000], an important prerequisite for successful BITE supervision is that the supervisor formulates his instructions as concisely as possible (e.g., ‘Look for a way to bring up the mother’). These simple instructions should remind the therapist of strategies he has already learned, but does not remember and apply in the therapeutic situation.

To maximize the usefulness of this technique, the following should be considered:
- The supervisor’s instructions should be 7–9 words long.
- The supervisor’s main task is to formulate the messages as clearly and unambiguously as possible.
- The monitor should be set up in the therapy room in such a way that the patient cannot see the supervisory instructions.

It is recommended that the therapist provides the supervisor with a supervision protocol in advance. This should convey the current status of the therapy, with potential difficulties, the goals of the session, and special concerns regarding supervision. Before and after the therapy session, time should be allowed for a brief discussion. Thus the following is the sequence of a BITE supervision session:

1. 5–10 min of preliminary discussion. Objectives: description of the current course of therapy, planning and/or discussion of the goals of the session, desires of the therapist towards the supervisor, concerns about the session
2. 50 min therapy session
3. 5–10 min debriefing. Objectives: clarification of any questions the therapist may have, feedback from the supervisor about the session, planning/perspective on further sessions

Depending on the requirements of the situation and the software used for the BITE supervision, the supervisor can use the Intranet in the same building where the therapy session is taking place, or the Internet from another location (e.g., the supervisor’s own practice). Regarding data security, there are 2 aspects to consider in a BITE session via the Internet: the encryption of data transmitted during the therapy sessions and the security of the computers being used. There are various ways to ensure data security during transmission. The BITE software we use communicates with the supervisor’s web server in SSL-encrypted form. The actual communication session (video, audio, and chat) occurs only between the clients on the 2 computers. The communication session is AES 256-bit encrypted, which is very safe encryption. The computers used are another possible weak point for data security. Therefore, these should be regularly maintained and viruses and spyware removed if necessary.

**Challenges for the Supervisor**

In contrast to post hoc supervision, a live supervisor observes the therapy session directly. This offers the advantage of seeing the patient not only through the eyes of the supervisee, but being able to form one’s own impression and give the supervisee pointed and effective advice. The supervisee can be supported directly by the use of specific interventions or in coping with difficult situations. The big advantages of BITE supervision at the same time pose a challenge to the supervisor. Much as during a therapy session, the supervisor has to respond directly, but he has to keep in mind the perspective of both the patient and the therapist, and make sure that the lat-
ter is not overwhelmed. With the BITE format, it is possible to intervene directly in the therapy. This is also desirable up to a certain point, but it is important to consider the development and knowledge of the supervisee and not to propose any interventions that are unknown. Training candidates, at least initially, often express concerns or fear at being observed by the supervisor. Especially at the beginning of therapy training, there are often skill deficits and great uncertainties about taking on the therapeutic role. These are exacerbated by the idea of participating in a BITE supervision. Here it could be advantageous to have at least one conventional supervision session before the first BITE supervision, which the supervisor can use to establish rapport with the supervisee and build trust. He should address possible anxieties about BITE supervision, reassure the trainee, and emphasize the benefits of this method. The evaluative component should thus fade into the background, subordinate to the potential for collaborative and respectful cooperation which results in better patient care, while allowing the supervisee to receive more support and understanding, and to become more confident in the use of new interventions.

According to Stoltenberg and McNeill [1997], a therapist in training, who is at the first stage of his therapeutic development, needs supervision in learning new techniques and in reducing his own uncertainty about using them. BITE supervision could be very helpful here, because the supervisor, using targeted support and positive feedback for the implementation of techniques for reducing uncertainty, can contribute to the satisfaction of the supervisee’s needs. The second stage of development is characterized by the therapist’s increased need for autonomy, even as he remains dependent on the supervisor for support in dealing with difficult patients and unfamiliar techniques. At this stage too, the BITE supervision method could be very useful, since the supervisee can talk things over with the supervisor before a BITE supervision, indicating what he expects from the supervisor (e.g., specifically to assist with a difficult technique). In general it is important to the BITE method for the supervisor to adjust to the needs and knowledge of the supervisee and to encourage the trainee’s personal therapeutic style. Through BITE supervision, the supervisor gets direct insight into the strengths and weaknesses of the therapists and can supervise more effectively. Given the challenges a supervisor faces in BITE supervision, it is recommended to provide training for supervisors in the use of the BITE method.

**Efficacy of Live Supervision**

Regarding the efficacy of live supervision, there are, alongside empirical studies, numerous statements by experts [Goodyear and Nelson, 1997; Montalvo, 1973] that proceed on the assumption that the patient in live supervision is better protected and therefore greater observational learning occurs than with a post hoc verbal report. Empirical research offers indications of an improvement in the therapeutic alliance, treatment skills, and adherence to treatment with live supervision [Frankel and Piercy, 1990; Kivlighan et al., 1991; Smith et al., 2012]. These studies are the only methodically well-founded investigations known to us that have examined the efficacy of live supervision.

In a quasi-experimental study, Kivlighan et al. [1991] compared live supervision with post hoc video-based supervision in the training of inexperienced therapists in interpersonal dynamic psychotherapy. The live supervision was performed by one-way mirror, behind which the supervisor observed the therapy session, entering the treatment room about twice per session to comment on the therapeutic process and to make proposals for intervention (knock-on-the-door). It was found that patients who were treated under live supervision evaluated the therapeutic alliance as closer and the sessions overall as ‘rougher’ than patients under video supervision. The therapists reported that under live supervision they used more supportive and relationship-building interventions. In the view of the authors, all these points conform to the learning goals of interpersonal dynamic psychotherapy. These results suggest that live supervision can contribute to greater treatment competence and improvement of the therapeutic alliance. Limitations of the study are the exclusive use of self-assessment and the lack of randomization.

In addition to the study of Kivlighan et al. [1991], there is further evidence that live supervision can improve the therapeutic alliance. Frankel and Piercy [1990] investigated the influence of relationship-building behaviors by the supervisor upon the behavior of the therapist and client during phone-in supervision. They found that skillful relationship-building behavior by the supervisor in the categories of ‘support’ and ‘teaching’ was significantly positively correlated with an increase in the supervisee’s skill in these behaviors. This in turn means that the individual clients (family members) either were already cooperative in their behavior or showed more cooperative behavior. Correlation with the clinical outcome, however, was not investigated. Nevertheless, this study shows impressively that live supervision with appropriate supervisory quality raises the competence of supervisees by building the therapeutic alliance, which in turn leads to greater cooperation on the part of clients and thus has a positive impact on the therapeutic alliance.

Smith and colleagues [2012] showed in a recent study that live supervision increased treatment integrity after the supervisees attended a workshop. 97 supervisees were divided randomly according to 3 conditions (bug-in-the-ear supervision, post hoc video supervision, and no supervision), after having attended a 2-day workshop in ‘Motivational Interviewing’ (MI). Workshop participants using bug-in-the-ear supervision showed significantly higher treatment integrity than participants without supervision in the categories of empathy and ‘MI spirit’ (understood as therapist behavior that
supports the client’s autonomy and readiness for change and promotes a collaborative atmosphere in the therapy sessions. Bug-in-the-ear supervision also significantly reduced the behaviors incompatible with MI. Participants in this group had a significantly higher reflection-question ratio than both of the other participant groups. The post hoc video condition led to more complex reflections than the bug-in-the-ear supervision.

The authors conclude that bug-in-the-ear supervision can effectively assist therapists to apply newly learned therapeutic strategies after workshop participation. This study is, to our knowledge, the only one that uses a randomized controlled design. The efficacy of live supervision in increasing treatment adherence was thus the first to be documented. For further operationalizations of the efficacy of this intervention, such as its influence on therapeutic skills, the therapeutic alliance or the clinical outcome, evidence from a randomized controlled trial is still needed.

With regard to the efficacy of monitor-based live supervision, there are also promising initial results for these relatively new methods of supervision, although the data is very limited and so far is based on individual case studies and experience reports. In a qualitative case study, Thurber [2005] compared bug-in-the-ear, phone-in, and monitor-based live supervision with regard to their influence on the skills of family therapists, patient behavior, and treatment outcome. Bug-in-the-ear and monitor-based live supervision were the most effective for therapist behavior. The therapists who were supervised under these conditions more frequently displayed the behaviors that had been previously defined as desirable. In contrast to bug-in-the-ear supervision, however, only monitor-based supervision successfully led to sustained learning by the therapist. This increase in therapeutic competence was associated with better treatment results (reduction of the clients’ problem behavior, better problem-solving skills on the part of a couple). Due to the small sample size of 3 therapists and 6 patients, however, the generalizability of the results is strongly limited.

Future studies on the efficacy of BITE supervision should investigate empirically which therapeutic skills can be promoted particularly well with this method. During a BITE supervision, only brief written feedback can be given. Probably that is why BITE supervision gives therapists the best support in the implementation of specific therapeutic techniques (e.g., exposure, cognitive restructuring) and in resource activation of the patient. It can be assumed that positive therapist behavior can be more effectively reinforced by immediate feedback than by post hoc feedback in conventional supervision. This could contribute to greater learning on the part of the therapist. The method, however, appears less suitable for longer feedback periods, such as the development of skills that the therapist (still) does not possess, for case conceptualization or reflection on the overall therapeutic strategy, one’s own language, and therapeutic attitudes (e.g., interpersonal behavior). To answer the question of whether and under what circumstances monitor-based live supervision is more effective than conventional supervision, further randomized controlled trials are needed.

**Acceptance of Live Supervision**

The live supervision formats used in the studies by Kivlighan et al. [1991], Frankel and Piercy [1990], and Smith et al. [2012] are considered invasive because of the supervisor’s impact on the therapy session, which the therapist cannot control [Scherl and Haley, 2000]. However if we consider the different formats individually, a more differentiated picture emerges. Depending on the format, there are different results with respect to acceptance and user satisfaction.

In order to be able to assess user acceptance of a supervision method, the concept of the procedure in question has to be considered more precisely. In supervision research, there is no model that explains why different methods of supervision are accepted by therapists and supervisors. Since live supervision is an innovative technology, the Technology Acceptance Model can be consulted as a basis for determining acceptance [Davis, et al., 1989]. This model explains the use of technology as an interplay of the following factors: perceived usefulness, ease of use, usage intention, and attitude toward use. It should be considered what these factors mean substantively in the context of live supervision. For example, it must be assumed that attitude toward use is influenced by fears on the part of the therapist regarding the therapeutic relationship and the supervisory relationship, and that perceived usefulness is influenced, among other things, by the therapist’s comfort level during the supervised session.

There are a few empirical studies of the various live supervision formats, which studied the different aspects of acceptance and allow some preliminary remarks. To investigate the therapist’s comfort level during a live supervision session, Bistline et al. [1985] monitored 6 phone-in supervisions to see to what extent the interventions of the supervisor affected the behavior of the supervisee in the categories of anxiety, reactivity, and authenticity. They used external- and self-evaluation of therapy excerpts, for 2 min before and 2 min after an intervention. No differences were found in the behavioral dimensions assessed before and after an intervention. The authors conclude that the supervisees did not feel uncomfortable during the phone-in supervision. However, the rating instruments they used were not described and the behavior of the patients was not addressed. Another deficiency of the study is the very small number of observed behavioral dimensions assessed and the small number of phone-in sessions. Thus the generalizability of the results is clearly limited.

The interventions of the supervisor during knock-on-the-door supervision, according to experts, have a rather more negative and disruptive influence on therapists and patients and their satisfaction with the supervision. An intervention
by the supervisor that is significant for the patient might make the therapist appear incompetent and in need of help in the eyes of the patient and undermine the therapist’s status [Scherl and Haley, 2000]. But there are no empirical studies of this.

A somewhat different picture emerges for bug-in-the-ear-supervision, in which the intervention of the supervisor on the patient’s behalf is not visible. Golsan [1976] found that supervisors who have often used this format planned to keep on using it, which suggests high usage intention and therefore high acceptance of the procedure. Hunt [1980], who studied the acceptance of bug-in-the-ear-supervision with 34 medical students and their psychiatric patients during their initial interview, achieved a similar result. 85% of the patients stated that they had been anxious before the interview because of the supervisory setting. During the interview, however, they no longer felt uncomfortable and did not hold back any information. The remaining patients felt uncomfortable during the first 15 min of the interview, but not after that. Only one patient felt uncomfortable the whole time. Many patients appreciated that several people were working on their problem. The therapists’ reactions were similar: 76% were uncomfortable before the discussion, but that feeling decreased as time went on. 8% reported that they were distracted by the comments during the interview, had technical problems and/or felt uncomfortable using the earphone. However, the majority appreciated the feedback and support of the supervisors. Despite this mostly positive feedback and improvements in comparison to other forms of live supervision, some disadvantages of the bug-in-the-ear approach are described. Receiving information from the supervisor and at the same time having to pay attention to the patient can be distracting to the therapist. This feeling of being overloaded can increase the therapist’s anxiety [Salvendy, 1984]. In sum, it can be said that knock-on-the-door, phone-in, and bug-in-the-ear supervision methods are predominantly accepted by users, although some inherent procedural disadvantages are perceived by at least some patients and therapists as bothersome and invasive.

Acceptance of BITE Supervision

The BITE supervision method has been implemented and regularly used in many inpatient and outpatient facilities in recent years. Experience reports point to the wide acceptance of the method among supervisors, therapists, and patients [Bohus, 2007]. The few available studies on the acceptance of BITE supervision support these reports. In a qualitative individual case analysis by Scherl and Haley [2000], BITE supervision was compared with phone-in and knock-on-the-door supervision, with 6 family therapists in training. The participants were extremely pleased with BITE supervision. Both study supervisors evaluated BITE supervision as extremely useful.

In a separate pilot study conducted at the behavioral therapy clinic at the Goethe University Frankfurt (Jakob et al., in preparation), the acceptance of BITE supervision was studied in a larger number of sessions. The BITE technique was provided and set up for the study participants. Following a BITE supervisory session, the therapists in training, their patients, and the supervisors were asked to rate several statements related to the session on a 4-point Likert Scale (1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, 4 = strongly agree). The questionnaire is based on the Purdue Live Observation Satisfaction Scale [Sprenkle et al., 1982] and was supplemented with regard to existing attitudes towards BITE supervision, which could adversely affect acceptance. The questionnaire contains items for perceived usefulness, degree of disruption, comfort level, usage intention, applicability, mental effort required, and therapeutic alliance during the BITE supervision session.

A total of 25 BITE supervision sessions with 10 patients, 6 therapists in training, and 5 supervisors was assessed in this way. Table 1 shows the means, standard deviations, and range of certain items on the various aspects of acceptance judged by therapist, patient, and supervisor.

Overall there was a high level of acceptance by patients, therapists, and supervisors. All 3 user groups found BITE supervision to be an agreeable modality and did not find the use of a computer and/or the presence of a supervisor to be particularly bothersome. Therapists and supervisors agreed more strongly than the patients did with the statement that the therapy session with observation by the supervisor was more effective. None of the 3 groups had the impression that BITE supervision had a negative impact on the therapeutic alliance. Therapists and supervisors indicated that they would like to use BITE supervision more frequently if the technology was available.

These results show that BITE supervision is accepted by therapists, supervisors, and patients and is perceived as effective and helpful. There was a high level of perceived usefulness, a low degree of disruption, high comfort level, high usage intention, and a rating of easy to use in all 3 user groups. Mental effort required for use was judged heterogeneous, and negative impact on the therapeutic alliance was evaluated as low.

BITE Supervision in a Behavioral Training Institution

The above-mentioned pilot study at the behavioral therapy outpatient clinic in Frankfurt further investigated the extent to which the BITE format can be integrated into the outpatient psychotherapeutic setting and into the procedures of a behavioral therapy training institution. Particularly for the training of professional psychologists, which includes 150 h of supervision, such an extension of conventional supervision may be attractive. BITE supervision offers the therapists in training
the advantage that the therapy session occurs simultaneously with the supervision session. However, this time advantage is offset by the fact that for therapists it is often quite time-consuming and requires flexibility to find a date that works for both supervisor and patient. BITE supervision is attractive for supervisors, since it allows online supervision. This could be particularly appealing for supervisors who work elsewhere than the supervisee. National experts are thus also available as supervisors for therapists in training for various disorders.

In practical terms, however, organizational problems can also be identified. A typical individual supervision session lasts 45 min, whereas an individual therapy session covered by statutory health insurance lasts 50 min. Putting this together with the preliminary talk and debriefing before and after each BITE session of at least 5 min each results in a greater time requirement for the supervisor of at least 15 min and a possible resulting change in the usual schedule of hourly sessions. To establish BITE supervision as an attractive complement to traditional methods of supervision in psychotherapy training, thought should be given to solutions to this problem. One possible solution could be to offer financial compensation for the additional time spent. A BITE supervision session could, for example, be estimated at 1.5 supervision time units (67.5 min) and paid for accordingly by the therapists in training. As part of the training, a BITE session of 1.5 hours of supervision would be recognized, which also appears justified given the additional time spent and the great learning potential offered by this format.

Use of the BITE technology requires 2 computers that are up to the current technical standards with at least 4 GB of RAM. One of the computers should be a laptop, since it will be located in the therapy room and should not take up too much space. An Internet or Intranet connection is required, which allows contact between the 2 computers. An external webcam is also required. Use of an external room microphone is optional, if the laptop’s internal microphone is not sufficient to provide good voice quality on the supervising side. Finally, software is needed for BITE supervision that allows verbal communications.

**Table 1. Descriptive values of different acceptance items**

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>MW (SD)</th>
<th>Rejection (1–2), %</th>
<th>Acceptance (3–4), %</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Perceived usefulness</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>T: Use of BITE increases the effectiveness of my work</td>
<td>25</td>
<td>3.6 (0.57)</td>
<td>4</td>
<td>96</td>
</tr>
<tr>
<td>S: Use of BITE increases the effectiveness of my work</td>
<td>25</td>
<td>3.5 (0.71)</td>
<td>4</td>
<td>96</td>
</tr>
<tr>
<td>P: Therapy session more effective because of the supervisor’s observation</td>
<td>23</td>
<td>2.8 (0.65)</td>
<td>30</td>
<td>70</td>
</tr>
<tr>
<td><strong>Degree of disruption</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T: Presence of a computer was bothersome</td>
<td>25</td>
<td>1.6 (0.71)</td>
<td>88</td>
<td>12</td>
</tr>
<tr>
<td>S: Disruption from use of the computer to conduct BITE</td>
<td>25</td>
<td>1.3 (0.61)</td>
<td>92</td>
<td>8</td>
</tr>
<tr>
<td>P: Presence of a computer was disruptive</td>
<td>24</td>
<td>1.4 (0.58)</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td>P: The supervisor’s observation bothered me</td>
<td>24</td>
<td>1.3 (0.44)</td>
<td>100</td>
<td>0</td>
</tr>
<tr>
<td><strong>Comfort level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T: Use of BITE was agreeable</td>
<td>25</td>
<td>3.4 (0.71)</td>
<td>12</td>
<td>88</td>
</tr>
<tr>
<td>S: Use of BITE was agreeable</td>
<td>25</td>
<td>3.8 (0.44)</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>P: Therapy session with live supervision was agreeable</td>
<td>23</td>
<td>3.5 (0.79)</td>
<td>9</td>
<td>91</td>
</tr>
<tr>
<td><strong>Usage intention</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T: I would use BITE frequently if the technology were available</td>
<td>25</td>
<td>3.5 (0.82)</td>
<td>12</td>
<td>88</td>
</tr>
<tr>
<td>S: I would use BITE frequently if the technology were available</td>
<td>25</td>
<td>3.4 (0.71)</td>
<td>4</td>
<td>96</td>
</tr>
<tr>
<td><strong>Applicability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T: Use and operation of BITE is simple</td>
<td>25</td>
<td>3.2 (0.50)</td>
<td>4</td>
<td>96</td>
</tr>
<tr>
<td>S: Use and operation of BITE is simple</td>
<td>25</td>
<td>3.6 (0.82)</td>
<td>20</td>
<td>80</td>
</tr>
<tr>
<td><strong>Mental effort</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T: Use of BITE requires great mental effort</td>
<td>25</td>
<td>2.7 (0.90)</td>
<td>36</td>
<td>64</td>
</tr>
<tr>
<td>T: Difficult to divide attention between monitor and patient</td>
<td>25</td>
<td>2.0 (0.68)</td>
<td>80</td>
<td>20</td>
</tr>
<tr>
<td>S: Use of BITE requires great mental effort</td>
<td>25</td>
<td>2.4 (1.2)</td>
<td>48</td>
<td>52</td>
</tr>
<tr>
<td>S: Difficult to maintain constant attention</td>
<td>25</td>
<td>1.3 (0.56)</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td><strong>Therapeutic relationship</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T: BITE negatively affects the therapeutic alliance</td>
<td>25</td>
<td>1.5 (0.71)</td>
<td>88</td>
<td>12</td>
</tr>
<tr>
<td>S: BITE negatively affects the therapeutic alliance</td>
<td>25</td>
<td>1.4 (0.58)</td>
<td>96</td>
<td>4</td>
</tr>
<tr>
<td>P: Live supervision has a negative effect on contact with the therapist</td>
<td>24</td>
<td>1.5 (0.72)</td>
<td>96</td>
<td>4</td>
</tr>
</tbody>
</table>

M = mean; SD = standard deviation.
T = Therapist, S = Supervisor, P = Patient. The items were rated on a 4-point Likert Scale; percentage value for ‘rejection’ combines levels 1 (strongly disagree) and 2 (somewhat disagree); for ‘acceptance’ the levels 3 (somewhat agree) and 4 (strongly agree) were combined.
and written communication as well as video transmission. Our project used software that was developed by the Support IT company (Freiburg i.Br., Germany) and is currently in the beta phase. Financial terms have not yet been finally established, since this system is currently being tested primarily under scientific conditions or is being made available to selected training institutions. It is our observation that BITE technology is very reliable under certain conditions, such as a functioning sound system, good room acoustics, constant Internet connection, and regular maintenance of the computers being used. In an outpatient clinic with changing occupancy of the therapy rooms by different therapists, changes could occur in the audio and video equipment of the rooms. To minimize that risk, it is highly recommended to set up a room used exclusively for BITE supervision.

Conclusion

The studies described and our own data presented here provide the first findings on the efficacy and acceptance of BITE supervision. Several studies show an increase in therapeutic effectiveness from live supervision. By this method, for example, the therapeutic alliance can be strengthened and therapeutic competence and adherence increased [Frankel and Piercy, 1990; Kivlighan et al., 1991; Smith et al., 2012]. There is also preliminary evidence of this for the BITE supervision method as a form of live supervision [Thurber, 2005]. However, the data so far is very limited. In order to be able to make reliable statements about the benefits of this method, we still require randomized controlled trials comparing BITE supervision, as the supervision format with direct feedback, to post hoc supervision, looking at various aspects of efficacy. It would be of interest, for example, to investigate empirically whether the therapist’s resources and skills might be more sustainably activated as a result of BITE supervision than with post hoc supervision. What therapeutic skills can be specifically promoted by this method? BITE supervision helps therapists directly with specific interventions; post hoc supervision provides support for case conceptualization and reflection on the therapeutic approach. It would be very instructive to examine, in a randomized controlled study, the influence that a combination of the 2 methods would have on efficacy, compared to either BITE and post hoc supervision alone. It is our experience that BITE supervision is an effective method, which cannot replace the post hoc supervision, but can rather be seen as a useful complement. Furthermore, future studies could clarify the question of what supervisory needs BITE supervision best satisfies. Are therapists in training more likely to respond who have a great need for structured supervision that teaches them skills, or does that also apply to therapists at a higher stage of development? A differentiated comparison of various live supervision methods could be equally instructive with regard to invasiveness, differing indication (what type of feedback – written or oral – is most suitable for which therapists?), attentional processes as well as the prospects and limitations of the technique.

With regard to the acceptance of BITE supervision, there are several reports that provide evidence of a high degree of user acceptance. The participants in our own study assessed the various aspects of acceptance very positively, so that many disadvantages or biases that still exist for other forms of live supervision do not seem to be relevant for BITE supervision. These include, e.g., the comfort level during the session and negative influences on the therapeutic alliance.

The extremely rapid development of innovative technologies and their cost-effective use offer a number of fascinating options for psychotherapeutic training and supervision. BITE supervision makes it possible to register the supervisor’s interventions synchronously with the therapy session itself. This gives rise to many interesting questions regarding supervisory skills and their implications for psychotherapeutic competence and the effectiveness of supervision. Supervision research is still in its infancy in this regard. BITE supervision can make an important contribution to establishing a solid evidentiary basis for psychotherapeutic supervision and thus professionalizing it as an evidence-based training method. In conclusion, BITE supervision could represent a promising addition to training of professional psychologists that can provide an important impetus for supervision research and also should be used more frequently in practice.

Disclosure Statement

The authors declare, that there is no conflict of interests.

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Sprinkle DH, Constantine JA, Piercy FP: Purdue live observation satisfaction scale. West Lafayette, Purdue University, Family Therapy Program, 1982.


