Post Emergency Department Telephone Interventions’ Effectiveness in Preventing Repeat Suicide Attempts

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Abstract

Background: Suicide is a major public health problem. Those attempting suicide have a high risk to reattempt again in the future. Few methods have been found that significantly reduce the repetition of suicidal behavior. This review examines current evidence to see if telephone interventions after discharge might reduce the rate of reattempts.

Methods: An exhaustive search of available literature was performed in June 2017 using MEDLINE-PubMed, Web of Science, and CINAHL. Keywords used included: suicide attempts, telephone, and emergency departments. The search results were narrowed to include only English-language articles, human studies, randomized controlled trials, and studies conducted between June 2005 and June 2017. Studies were screened to include only patients 16 years and older who presented to the ED after a suicide attempt, and ones which involved post care telephone-based interventions. The quality of relevant articles was assessed using the Grading of Recommendations, Assessment, Development and Evaluation (GRADE).

Results: A total of 30 articles were discovered and subsequently screened according to inclusion criteria. The result was a total of three randomized control trials. One RCT found that telephone contact 1 month after ED discharge may help reduce instances of reattempted suicides over 1 year. Another RCT found no significant difference in number of suicide attempts after intervention. The third RCT determined that the effect of telephone intervention could not be confirmed due to high dropout rates.

Conclusion: The data is inconsistent as to the effect of telephone interventions for this group of patients. Still there was some data that showed benefits. Considering the dire consequences of suicidality combined with what may potentially be a relatively easy intervention to implement, considerations to change the current standard of care may therefore be warranted. Without doubt more studies are needed to obtain stronger evidence as to whether it is effective or ineffective. Preferable study methods would be randomized controlled trials that all involve the exact same parameters for the intervention itself.

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Post Emergency Department Telephone Interventions’ Effectiveness in Preventing Repeat Suicide Attempts

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A Clinical Graduate Project Submitted to the Faculty of the School of Physician Assistant Studies
Pacific University
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Biography

Carl Glissmeyer, a native of California, graduated from The University of Oregon with a major in philosophy. His clinical background is in working as a caregiver for patients with both physical and developmental disabilities. He is interested in pursuing a career in either primary care or psychiatry.
Abstract

**Background:** Suicide is a major public health problem. Those attempting suicide have a high risk to reattempt again in the future. Few methods have been found that significantly reduce the repetition of suicidal behavior. This review examines current evidence to see if telephone interventions after discharge might reduce the rate of reattempts.

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**Conclusion:** The data is inconsistent as to the effect of telephone interventions for this group of patients. Still there was some data that showed benefits. Considering the dire consequences of suicidality combined with what may potentially be a relatively easy intervention to implement, considerations to change the current standard of care may therefore be warranted. Without doubt more studies are needed to obtain stronger evidence as to whether it is effective or ineffective. Preferable study methods would be randomized controlled trials that all involve the exact same parameters for the intervention itself.

**Keywords:** Suicide attempts, telephone, and emergency departments
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Table 1: Quality Assessment of Reviewed Studies

List of Abbreviations

ED Emergency Department
Could Post Emergency Department Telephone Interventions Prevent Repeat Suicide Attempts

BACKGROUND

The World Health Organization (WHO) predicts that approximately 1.5 million people will die from suicide every year by 2020.¹ Furthermore, up to 3% will die by suicide within 1 year, 9% within 5 years and in studies of longer duration, mortality rates are close to 11%.² Suffice to say, Suicide is a major public health problem worldwide.³ Those who attempt suicide are at high risk of further attempts (12%-30%) or completing suicide (1%-3%), in the year following their initial attempt.⁴

A review of controlled studies of treatment strategies for people who have attempted suicide found few methods that significantly reduced the repetition of suicidal behavior.⁵-⁶ Furthermore, despite its global impact, studies on interventions designed to prevent suicide in patients who have attempted suicide in developing countries are not well documented.⁷ After attempting suicide, 70% of patients are discharged from EDs and referred to an outpatient follow-up. Approximately half of them will refuse to engage in recommended treatment.⁸ Monitoring or follow-up care is proposed as a strategy to address this issue.¹

The motivation of this review is to encourage the exploration of novel changes which might benefit the current standard of care or provide substantiation that the current standard is in fact the best that can be done at this time. A new standard as simple as telephone follow-up might be an effective way to improve patient outcomes in this population. The fact that it is likely a low cost and low risk endeavor makes an investigation into telephone effectiveness all
the more prudent. Could telephone based interventions in addition to standard interventions lead
to fewer reattempted suicides in adult patients who present to the ED after a suicide attempt?

**METHODS**

An exhaustive search of available literature was performed in June 2017 using
MEDLINE-PubMed, Web of Science, and CINAHL. Keywords used included: suicide attempts,
telephone, and emergency departments. The search results were narrowed to include only
English-language articles, human studies, randomized controlled trials, and studies conducted
between June 2005 and June 2017. Studies were screened to include only patients 16 years and
older who presented to the ED after a suicide attempt, and ones which involved post care
telephone-based interventions. The quality of relevant articles was assessed using the Grading of
Recommendations, Assessment, Development and Evaluation (GRADE).⁹

**RESULTS**

A total of 30 articles were discovered and subsequently screened according to the
inclusion criteria previously stated. Duplicate studies were eliminated. The result was a total of 3
randomized control trials.

**Guillaume et al**

This randomized controlled trial involved ED patients who had attempted suicide through
deliberate self-poisoning. It sought to determine the effects of a telephone intervention 1 year
from discharge after a phone call at either 1 month or 3 months. Patients 18 to 65 years old were
selected from 13 different EDs in France. Patients were required to give written consent to being
contacted. Two exclusion criteria were homelessness and those patients addicted to illegal drugs. Telephone contacts were made by psychiatrists with at least 5 years of experience.¹⁰

The telephone contact involved a discussion of the treatment plan which was recommended upon their initial visit. If the patient was having trouble following the plan a new plan was developed, or if patients were deemed to be high risk they were quickly scheduled for an emergency appointment. Callers also offered psychological support based on principles of empathy, reassurance, explanation, and suggestion.¹⁰ Patients in the control group received standard treatment without telephone follow-up.¹⁰

Future suicide attempts were self-reported. The study included 605 patients. 9% were lost to follow up. 70% were successfully contacted by phone. The number of participants contacted at 1 month after discharge showed a significantly lower rate of reattempted suicide, 12% versus 22% for the control. The 3 month group was lower but in a less significant way, 17% vs 22%.¹⁰

Mouaffak et al

This randomly controlled trial was done within the psychiatric department of a University hospital in France. To qualify for the 12-month study, patients must have given consent, be reachable by phone, speak fluent French, and have been discharged within 72 hours of their initial arrival. The standard treatment was well described as medical care and creation of a treatment plan based on a psychiatrist’s evaluation.¹

All enrolled patients received letters and a source card after randomization had taken place. The card did not include a “caring message,” but did include a phone number for 24-hour contact with a psychiatrist. Similar reminder letters were sent at 1, 6, and 11 months.¹
Telephone calls were made by a variety of professionals trained in the intervention. Calls were made at 2 weeks, 1 month, and 3 months. The calls involved a short assessment of that patient’s psychopathological state, questions about adherence, and questions about changes they might be feeling. At the end of the call an appointment was made either for the next phone interview, or for an immediate ED visit if it was deemed necessary.¹

Three hundred and twenty patients were enrolled in the study. At 12 months 63% of patients responded to the telephone team. At 12 months 12.5% were lost to follow-up, death, or withdrawal of consent. The end result was no significant difference of reattempts, at 14.5% for the interventional group and 14% for the control group.¹

**Wei et al**

Four hospitals were randomly selected from a heavily populated city in China for this randomly controlled trial. Patients included were those over age 15 who had attempted suicide and had at least 1 known contact so that follow up could be conducted at a later point in time. Two hundred and thirty-nine patients were enrolled split into three groups. 77 to the control group, 80 to the telephone intervention group, and 82 to a cognitive therapy group that is not the subject of this paper, and so will effectively be ignored. There were comprehensive baseline assessments of patients which helped assess many secondary outcomes beyond the number of reattempted suicides.¹¹

The telephone intervention consisted of 12 calls weekly over a 3 month period. The nature of the calls was psychological support from professors trained in empathy, reassurance, explanation, and suggestion. At 12 months the dropout rate for the control group was 64.9%, and
55.0% for the telephone group. 75.0% of those who stayed actually received the intervention, with 9 patients refusing the intervention and 11 patients not able to be contacted. Total reattempts at 12 months were 5 (6.5%) for the control group and 1 (1.3%) for the telephone group. While the study says that compliance was adequate, they conclude that with a drop out rate so high the intervention cannot ultimately be assessed.¹¹

**DISCUSSION**

The risk of subsequent suicidal behavior is substantial, between 12% and 25% of those who attempted suicide had another attempt within 1 year.¹² One can imagine that this behavior has consequences beyond the most obvious and critical of injury or death. Other considerations include the quality of life for those patients, emotional and mental health impacts on families and friends, and economic costs for patients and hospitals.

The results of the 3 studies led to no clear conclusion. One study¹⁰ showed reduction to attempted suicides at 1 year. A second study¹ found that the interventions had no effect on future suicide attempts. The third study¹¹ ultimately concluded that the effect of the interventions could not be confirmed. The merits and faults of these studies as discussed above is also depicted in Table 1 which was constructed using the GRADE method. This examination of each study design is helpful to form a more cohesive judgment on the clinical question. Limitations in the studies certainly raise some concerns as to the validity of their ultimate assertions.

Limitations for the Guillaume et al study¹⁰ were as follows: Data analysis was blinded, but it is unclear if those making the interventions were. There is also the fact that the study having an upper age range of 65 might have some effects on the outcomes and moreover their ability to be
compared with other studies.¹ In the Mouaffak et al study¹ limitations include an uncertain risk of bias for both sequence generation and allocation concealment, as neither was clearly described. There was also no indication of blinding. It may also be prudent to emphasize that the intervention in this study did not mention empathy or support as a specific intention of the interventions, which may limit its comparative value with the other studies.¹ Lastly, the 12.5% lost to follow-up at the 12 month mark is somewhat concerning.¹ This would certainly be a stronger study without such great loss to follow-up. Finally, the Wei et al study¹¹ had an acknowledged major limitation which was a high dropout rate. Additionally, there was an uncertain risk of bias for both allocation concealment and blinding, as neither was well addressed as to if or how it was implemented. Furthermore, one might need to consider cultural differences which might have influenced both how the interventions were performed and outcomes for patients in order to reveal if these results would be analogous somewhere where cultural norms might differ. The conversational nature of the interventions and even perhaps the societal views on suicide mean that maybe culture could be of notable importance.¹¹

Another point of discussion is to explore the degree of variability among the interventions for each respective study. This includes key aspects such as time frames, the details surrounding what each telephone intervention entailed, and the persons making the phone calls. Changes to any of these could easily be argued or reasoned to perhaps effect the ultimate success or failure of the calls. However, while it would be ideal to have studies each using precisely the same intervention, it may perhaps be the very nature of this particular type of an intervention to be
fluctuating. The guidelines as to how the phone calls are to be carried out is basically being
developed from scratch.

Each team that is putting everything together must come up with their own plan for how the
intervention should be implemented, and from this perspective it is hard to see how the
expectation for conformity would be reasonable. Still, it is equally easy to see how this fact of
inconsistency could make one question how accurate it is to compare these studies in a reliable
way. Perhaps the point to be made is that to see variability among other features of studies is less
unusual, but to see such variation in the actual intervention, as is the case for this subject, is itself
a fact that at should at least be considered.

An additional concept which can be analyzed is why, beyond being effective or
ineffective, telephone-based interventions might be a benefit or a hindrance. This type of
question is an important one to ask because it can help assess whether this topic is valuable for
future studies. Reasons why telephone interventions might be good to investigate is because they
should be relatively cheap and easy to implement. However, determining that the idea appears
satisfactorily sensible does give credit to the endeavor of future research, through which any
assumptions can be tested for legitimacy. It must also be considered that, if effective, telephone
interventions may still be a burden to better patient outcomes. For instance, these sorts of
interventions might pale in effectiveness to something more involved. Maybe a pharmacological
solution or some variety of extensive psychotherapy. Or perhaps a significant connection is lost
when attempting these interventions over the phone. If these details were correct it may be that
time and energy is being placed into research when it shouldn’t be. Again, these sorts speculation can help aid where to begin an exploration, but also when it may be time to end it.

CONCLUSION

The data is inconsistent as to the effect of telephone interventions for this group of patients. The Guillaume et al study\textsuperscript{10} was well constructed and did show benefits. The Mouaffak et al study\textsuperscript{1} did not show benefit but was also the weakest study from a technical standpoint. It also had the only intervention\textsuperscript{1} of the 3 that did not explicitly talk about empathy as a portion of the intervention, and perhaps that missing element had an effect on outcomes. The Wei et al study\textsuperscript{11} did show some small benefits to the intervention, and although the study was deemed to not be entirely reliable, that data is not necessarily entirely devoid of importance. Considering the dire consequences of suicidality combined with what may potentially be a relatively easy intervention to implement, considerations to change the current standard of care may therefore be warranted. Without doubt more studies are needed to obtain stronger evidence as to whether it is effective or ineffective. Future research would ideally include randomized controlled trials that all involve the exact same parameters for the intervention itself. Thus a low-cost and simple method might provide help for those who contemplate suicide.
References


Table 1: Quality Assessment of Reviewed Articles

<table>
<thead>
<tr>
<th>Study</th>
<th>Design</th>
<th>Limitations</th>
<th>Indirectness</th>
<th>Inconsistency</th>
<th>Imprecision</th>
<th>Publication bias</th>
<th>Upgrade Criteria</th>
<th>Quality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wei et al(^1)</td>
<td>RCT</td>
<td>Serious (^a)</td>
<td>Not Serious</td>
<td>Not Serious</td>
<td>Not Serious</td>
<td>Unlikely</td>
<td>None</td>
<td>Moderate</td>
</tr>
<tr>
<td>Mouaffak et al(^2)</td>
<td>RCT</td>
<td>Serious (^b)</td>
<td>Not Serious</td>
<td>Not Serious</td>
<td>Not Serious</td>
<td>Unlikely</td>
<td>None</td>
<td>Low</td>
</tr>
<tr>
<td>Guillaume et al</td>
<td>RCT</td>
<td>Not serious (^c)</td>
<td>Not Serious</td>
<td>Not Serious</td>
<td>Not Serious</td>
<td>Unlikely</td>
<td>None</td>
<td>High</td>
</tr>
</tbody>
</table>

\(^a\) Uncertain risk of bias for both allocation concealment and blinding.

\(^b\) Uncertain risk of bias for both allocation concealment and sequence generation. No indication of blinding.

\(^c\) Data analysis was blinded, but it is unclear if those making the interventions were. However, I do not see a need to downgrade as the study as described appears very well executed. It seems most likely this aspect of the blinding was merely not mentioned.