

Summary in English



Summary

Suicide is the second leading cause of death among youth in the Netherlands affecting approximately 50 adolescents every year. The magnitude of this problem, however, is far more extensive than the number of suicides when taking in consideration that each year circa 11.2% of Dutch adolescents has suicidal thoughts and 6.6% attempt suicide or engage in deliberate self-harm. In addition, ethnic minorities, especially Hindustan-Surinam and Turkish adolescents more often report suicidal thoughts and attempts compared to their Dutch peers. These figures if anything underline the importance and need of effective preventive programs on adolescent suicide prevention which take in consideration the ethnicity component. Over the past years training gatekeepers like school professionals and health care professionals has been highlighted as an important preventive strategy in suicide prevention. There are in-person trainings available in this area in the Netherlands, but lack of time and resources can keep gatekeepers from attending them. One solution that can address these two obstacles is to make the training accessible online, using e-learning modules. The main goals of this dissertation were to develop (1) and subsequently investigate the effectiveness (2) and acceptability (3) of adolescent suicide prevention e-learning modules designed for gatekeepers. These three goals have been addressed in studies reported in the two parts of this dissertation. The first part (chapter two, three and four) includes the research that was necessary to develop the e-learning modules and the second part (chapter five, six, seven) contains the studies that were needed in order to determine the effectiveness and acceptability of the developed e-learning modules.

In **Chapter Two** the results of an online survey among 58 members of School Care Advisory Teams (SCAT) in the Netherlands are discussed. This study had two objectives. First, to get insight into how participants perceived the subject of suicidality within their school. Second, to assess their reflections on the proposition of developing an online educational training program on the topic of adolescent suicide prevention using e-learning modules. The most important findings of this study were that almost all participants stated to have been confronted with suicidality amongst their students at some point, and named adolescent suicidality among the five most important topics requiring the attention of school professionals. Moreover, participants believed that students and teachers are not very well informed on the subject of adolescent suicidality, and although SCAT members considered themselves capable to detect, guide and refer suicidal adolescents, they believed that the development of e-learning modules in this area is a good idea.

Chapter Three demonstrates the findings of a systematic review aiming to provide an overview of e-learning modules on suicide prevention designed for gatekeepers, and their effectiveness. In order to achieve the aim of this study, two strategies were used. Firstly,

databases of PubMed, Web of Science and PsycINFO were systematically searched using a matrix multiplication of the terms 'gatekeepers', 'suicide' and 'e-learning modules'. Secondly, the combination of the three terms was used in *Google* in order to find e-learning modules that couldn't be found using the first search strategy. The literature search resulted in 448 papers of which none met the inclusion criteria of this study. The *Google* search resulted in 130 hits, of which 23 met the inclusion criteria of this review. Organizations that owned the modules were contacted of which 13 responded and nine were included in this study. Two e-learning modules were being tested at the moment in a randomized controlled trial (RCT), one organization was planning to test the effectiveness of their module and one organization has compared their in-person training with their online training. Moreover, the included modules had different characteristics.

In **Chapter Four** the rationale behind the program Mental Health Online (MHO), an online adolescent suicide prevention program for gatekeepers in the Netherlands, is discussed by focusing on the three stages of the developmental process. First, a self-report instrument for assessing suicidality among adolescents age 12 to 20 from various cultural backgrounds would be developed and validated using online assessments. Second, eight adolescent suicide prevention e-learning modules for gatekeepers would be developed and tested in an RCT. Third, both parts of the program would be integrated and implemented using online resources.

Chapter Five describes the design of the RCT study on the effectiveness of the adolescent suicide prevention e-learning modules of the actually developed MHO program. The primary outcomes of this study were participant's ratings on actual knowledge, perceived knowledge, and perceived self-confidence regarding adolescent suicidality, and the secondary outcome was the satisfaction of the gatekeepers regarding the design of the e-learning modules. Four questionnaires were developed in order to measure these four outcomes. After completing the first assessment (pre-test), participants were randomly assigned to either the experimental group or the waitlist control group. One week after completing the first assessment the experimental group gained access to the website of MHO containing the eight e-learning modules and additional information on adolescent suicide prevention (literature, films and documentaries, links to other related websites and an online discussion board). Participants in both conditions were furthermore assessed four weeks after completing the first assessment (post-test), and 12 weeks after completing the post-test (follow-up). At post-test, participants from the experimental group were asked to complete the evaluation questionnaire on the modules.

In **Chapter Six** the results of the RCT on the effectiveness of the e-learning modules of MHO are discussed. A total of 190 gatekeepers participated in this study and were randomized to either the experimental group ($n= 94$) or the waitlist control group ($n= 96$). Conform to

the study design (as described in chapter five) participants were assessed three times (pretest, posttest and three month follow-up) on the three primary outcome measures of this study (actual knowledge, and participant's ratings on perceived knowledge and perceived self-confidence). The actual knowledge, perceived knowledge, and perceived self-confidence of gatekeepers in the experimental group improved significantly compared to those in the waitlist control group at posttest with medium to large effect sizes, and the effects remained significant at three month follow-up.

Chapter Seven describes the results of the study on user evaluation of the MHO program which was part of the RCT on the effectiveness of this program. A total of 83 gatekeepers from the experimental group completed a self-report evaluation questionnaire which addressed the user's perception with regard to: expectation and relevancy, design satisfaction, suggestions for improvement, and usefulness and recommendation to others. Additionally, this study provided some insight into the learning behavior of the users in an online environment. All features of the program (expectations, relevance, duration, user friendliness, interaction, contentment with cases and quizzes) were positively evaluated by the participants. Gatekeepers furthermore stated to have gained knowledge, self-confidence and skills in adolescent suicide prevention, and indicated that they would recommend the modules to other gatekeepers. Although not obligatory almost all gatekeepers did complete all eight modules, and the additional information available on the website was not used by many participants. Lastly, a very small percentage of the users returned to the website to refresh their knowledge.

Lastly, **Chapter Eight**, summarizes and discusses the main findings of this dissertation. The main conclusions are that e-learning modules are an effective method to increase the knowledge, self-confidence and skills of gatekeepers with regard to adolescent suicide prevention, and are considered a satisfactory educational tool by gatekeepers. However, future research is needed in support of the findings of this dissertation. Finally, the theoretical and practical implications based on the findings of the discussed studies are presented, and the most important strengths and limitations of the conducted studies are discussed.