

A content analysis of the research articles written on online-counselling

Eser Ceker*, Near East University, Nicosia 99138, Cyprus

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Abstract

The aim of this study was to examine the research studies conducted between 2000 and 2017 about 'online counselling' with particular attention to the publication year, number of researcher in the researching teams, country of the researching university/researcher, application area researched, publication source, author, affiliation, research document type and the research model used. According to the results; teams composing from two to three researchers are more common than studies researched by a single person. Applications focusing on 'Analysing Online Counselling' and 'Online Counselling for Health and Medicine' are most preferred researched areas. Results also indicate that more researchers from the USA and Australian Universities studied 'online counselling' related problems than others. The total number of research carried out for online counselling seems to have increased from 2007 onwards. It is believed that these results together with the recommendations and comments may be supportive and helpful, especially for the future online counselling research studies in developing countries.

Keywords: Online counselling, e-counselling, content analysis.

* ADDRESS FOR CORRESPONDENCE: **Eser Ceker**, Near East University, Nicosia 99138, Cyprus.
E-mail address: ckreser51@gmail.com / Tel.: +90 392 223 64 64

1. Introduction

Although mainly focusing on e-learning in their study; Lazo, Covacho and Barroso (2016) outline changing conditions for counselling as well today by indicating that ‘...parameters of formal education have been rendered obsolete by e-Learning’. They underline the fact that ‘the challenge for education is to find ways of creating, managing and distributing content that can create a type of learning that is communicative, horizontal, decentralised, multidirectional and interactive’ since online and distance learning have become so prevalent (Celik & Uzunboylu, 2015). Karahoca’s (2013) research on ‘Meta-Cognitive Tools’, which involves e-Learning Portal Usage; analyses human-computer interaction compared intelligence, personal factors and motivation factors with the personal software usability results in order to determine the correlations and associations between the usability of the software and learners’ individual differences. The results show that usability of ‘online educational tools’ has meaningful effects on achievement. Bradley (2015), on the other hand, reached to another conclusion in her study that ‘higher education students which make use of mobile devices (for online learning); supports the engagement of ‘online communities’, learning and participation. Thus, she concludes her recommendations for the future studies on language learning with suggestions very similar to some ‘online counselling’ arguments and needs of today. Capri (2017), who investigated the self-efficacy beliefs and life satisfaction of the job of Vocational Counsellor Education Candidates in terms of socio-demographic variables, come up with the results that ‘socio-demographic variables such as gender, education degree, the faculty they graduated, the geographical region they live in and social support has a small effect on the job and vocational counsellor candidates' general self-efficacy beliefs and life satisfaction’.

Richards and Vigano (2013) describe cyberpsychology field as a study that deals with human-technology interactions. Online-counselling (OC) is an area of cyberpsychology and is also named as e-counselling, e-therapy or cybertherapy. The researcher sticks with their definition of OC describing it as ‘the delivery of therapeutic interventions in cyberspace where the communication between a trained professional counsellor and client(s) is facilitated using computer-mediated communication technologies, provided as a stand-alone service or as an adjunct to other therapeutic interventions.’ (Richards & Vigano, 2013). In terms of definitions, other researchers underline some of the main differences of online counselling from face-to-face counselling, following to Sanders and Rosenfield (1998) definitions that describe OC as ‘e-counselling refers to the counselling process through the medium of telecommunication technologies, which includes telephone, Internet and teleconferencing.’ Zamani (2000), indicates that there are four main methods of practice for online counselling. These are e-mail, chat, web-based messaging and video-conferencing (Zamani, 2000).

Kolog, Sutinen and Ruoho (2014), indicates that the first steps for e-counselling started in 1972; the first online counselling demonstration between computers took place at Stanford University in an International Conference. Since then, the rapid growth of e-counselling raised concerns among the traditional face-to-face counselling method defenders. But, the emerging pace of technology in counselling did not replace the existing traditional face-to-face counselling methods. Together with the new online software, the face-to-face counselling methods are still a necessity and are being used (Zamani, 2009).

Studies comparing ‘online’ with ‘face-to-face’ learning (which includes the counselling dimensions too) outlines both the advantages and disadvantages of using it. A good example may be is the study established for university students, with results showing that ‘students with cohesive conception and learning through online discussion got better course grades’ but ‘no significant difference between deep and surface approaches to face-to-face discussion and course grade’ (Ellis, Goodyear, Prosser &

O'Hara, 2006). Cook and Doyle's (2002) study too, which dealt with the comparison of online and face-to-face therapy, indicates that the results of the study showed 'no significant differences in the level of working alliance were found within the online therapy sample with respect to the modality of communication, client presenting problem or therapist'. But the results also revealed the 'significantly higher means on the goal scale and composite score of the Working Alliance Inventory in the online sample' (Cook & Doyle, 2002).

Some of other dominant reasons for starting to use OC may be listed as the 'need' for using it (Dowling & Rickwood, 2016; Sorakin & Uzunboylu, 2017; Wright, 2002) and overcoming some difficulties arising from social and cultural problems between counsellors and clients or between clients affecting communication in between (Ballesteros & Hilliard, 2015; Baglama, 2016). On this basis, it is clear that there is also a need for similar research studies to the one established by Akhisan, Yurtay, Yurtay and Esitti (2016), which focused on 'ecommerce website usability of visually impaired people' but for overcoming the difficulties and problems in the education of the disabled students. Yet, other researchers indicate the needs for additional advanced research studies comparing the classical face-to-face counselling application with the online one (Bagriyanik & Karahoca, 2016; Bicen, Ozdamli & Uzunboylu, 2014; Mallen, Vogel, Rochlen & Day, 2005).

This research tries to provide some detailed statistical analysis of the findings of a literature review about OC which hopefully will help to support and enhance the studies in this area.

2. Materials and methods

2.1. Aim of the study

The aim of this content analysis study was to examine research studies based on various variables conducted between the years 2000 and –2017 and related with 'online counselling' in the world. The sub-aim of the study was to try to figure out if Turkish researchers are following the trends if any exists. Answers to the following questions were sought in this study based on these aims:

1. What is the distribution of article numbers published in between 2000 and 2017, about 'online counselling' based on the years of publication?
2. What is the distribution of article numbers published based on the country of researching universities in these research studies?
3. What is the distribution of article numbers published based on the number of researchers worked in each researching study team?
4. Where do Turkish researchers stand in the scale of research for Online Counselling team construction preferences?
5. What is the distribution of article numbers published based on the applied research area studied?
6. What is the distribution of article numbers published based on the research model used in these studies?

2.2. Data collection

Research articles which are open-access related with 'online counselling' conducted within the years of 2000 and 2017 in SCOPUS indexed database were included in this research. Updates are important for literature reviews (which is needed for intervals of at least every 5 years or so). In their research; Kolog, Sultinen and Ruoho (2014) also indicate that 'online counselling' oriented research and publications begins from around 2000. According to these findings, this research was limited from

the year 2000 onwards, to give priority to the newest research findings. 98 research articles have been reached and 55 of them downloaded for this study. Some selection criteria were identified in order to determine which research studies would be included in this study.

2.3. Content analysis criteria

The criteria for content analysis, search keywords of the study were 'online counselling' OR 'e-counselling' only. In addition to the search keywords, there were only three articles, which involved with 'content analysis' explicitly as well individually. The keywords selected for filtering the search results in order to establish a finer content analyse of the statistics were:

- Publication Year
- Number of researcher as a team
- Country/Territory of the researching University
- Research subject area
- Research model
- Publication source
- Author
- Affiliation
- Research document type

2.4. Data analysis

Following the search results, all obtained data were recorded in a database of the SPSS 20.0 program. This database was then constituted based on the determined criteria and the data were analysed in SPSS program. Data analysis was based on content analysis, and frequency and percentage analysis were applied. Further additional analysis is done via the Scopus Analysis Search Results Tools, for some of the sub-dimensions of filtered results.

3. Findings

Distribution of the number of research articles on 'online counselling' with reference to the publication year of the study.

Table 1. Publication year

Publication Year	Frequency (f)	Percentage (%)
2017	0	0.0
2016	9	9.18
2015	7	7.14
2014	9	9.18
2013	6	6.12
2012	19	19.38
2011	14	14.28
2010	8	8.16
2009	3	3.06
2008	2	2.04
2007	1	1.02
2006	2	2.04
2005	11	11.22
2004	1	1.02

2003	1	1.02
2002	3	3.06
2001	0	0.0
2000	2	2.04
Total	98	100

In Table 1, distribution of the research articles published based on the year of publication is demonstrated. As can be seen, the increase in numbers is clear throughout the years, with booming figures at 2005, 2011 and 2012.

Distribution of the number of research articles on ‘online counselling’ with reference to the supporting/organising universities country origin for the research.

Table 2. Country of publication’s researcher

Country	Frequency (f)	Percentage (%)
USA	39	38.6
UK	11	10.9
Australia	10	9.9
Germany	6	5.9
Nigeria	6	5.9
Undefined	6	5.9
Canada	3	2.9
India	3	2.9
Ireland	3	2.9
Malaysia	3	2.9
Netherland	3	2.9
Austria	2	1.9
Japan	2	1.9
Turkey	2	1.9
Finland	1	0.9
Greece	1	0.9
Total	101	100

Table 2 demonstrates that USA Universities (38.6%), UK (%10.9) and Australian Universities (9.9%) takes the lead among the countries that have studied online counselling with publication. Most countries, including Turkey, either has one or two publications for this category.

Distribution of the number of research articles on ‘online counselling’ with reference to the number of researcher worked in the research team.

Table 3. Research team constructions

Number of researcher in the research team	Frequency (f)	Percentage (%)
1	11	20.0
2	19	34.5
3	14	25.4
4	6	10.9
5	3	5.4
Above 5	2	3.6
Total	55	100

In Table 3, distribution of the groups based on the number of researcher in teams is demonstrated. As it can be seen, two-membered (34.5%) and three-membered (25.4%) teams are most common while solo membered teams (20%) follow the line.

Distribution of the number of research articles on ‘online counselling’ with reference to the supporting/organising universities country origin for only single person authored research.

Table 4. Single authored publications

Publication from	Frequency (f)	f/Country total ratio (%)
USA	4	22.0
Turkey	2	100.0
Ireland	1	50.0
India	1	50.0
Malaysia	1	50.0
UK	1	33.3
Canada	1	25.0
Total	11	330,3

Table 4 shows the distribution of the single membered research on online counselling based on the country of the researching university. As can be seen, although only 11 studies out of 55 in total used solo research teams for these studies, Turkey is the only country that haven’t used multiple researchers in teams.

Distribution of the number of research articles on ‘online counselling’ with reference to the application area.

Table 5. Application area

Application area	Frequency (f)	Percentage (%)
A Analysing Online Counselling (OC)	15	27.7
Medical health and OC	10	18.5
Student views on OC	5	9.2
Psychological health and OC	4	7.4
Comparing and rating for OC	3	5.5
Using email for OC	3	5.5
Ethics and OC	3	5.5
Counselor views on OC	2	3.7
Therapy and OC	2	3.7
Counselling psychology	2	3.7
Literature review on OC	2	3.7
Personality and gender issues with OC	1	1.8
System development on OC	1	1.8
Family and friend factors in OC	1	1.8
Total	54	100

Distribution of the study numbers based on the application area is demonstrated in Table 5. As it can be seen from the table, ‘Analysing online counselling’ (27.7%) and ‘Medical health and OC’ (18.5%) are the mostly studied application areas with publication. While areas such as ‘System development on OC’ and areas involving ‘factor analysis for OC’ only remains at (1.8%).

Distribution of the number of research articles on ‘online counselling’ with reference to the research model used.

Table 6. Research model

Research model	Frequency (f)	Percentage (%)
Literature Review	19	35.8
Survey	10	18.8
Experimental	8	15.1
Web chat, interview and e-mail	5	9.4
Case Study	3	5.6
OC Service Scale use	3	5.6
Mixed	2	3.7
OC Scale Development	1	1.8
Conversation analysis	1	1.8
Semi-structured interview	1	1.8
Total	53	100

Table 6 demonstrates the distribution of the number of study published based on the used research models. As it can be seen, while ‘Literature Review’ (35.8%), ‘Surveys’ (18.8%) and ‘Experimental’ (15.1%) are the most frequently used models; models such as ‘Online counselling scale development’ (1.8%) and ‘interview’ (1.8%) are not preferred much. But models using multiple research models (e.g., ‘web chat, interview and E-mail’ (9.4%) has a better increasing trend.

Distribution of the number of research articles on ‘online counselling’ with reference to the source published.

Table 7. Documents by source

Source	Frequency (f)	Leading top (5)
Counselling Psychologist	8	1
British Journal of Guidance	5	2
Counselling and Psychotherapy	3	3
Journal of Technology in Human Services	3	3
Psychotherapeutic	3	3
Total		

In Table 7, the distribution of the published articles related with ‘online counselling’ with reference to the source of publication is demonstrated. As seen, the leading top publishers for this area are ‘Counselling Psychologist’ and ‘British Journal of Guidance’ as expected.

Distribution of the number of research articles on ‘online counselling’ with reference to the author

Table 8. Documents by author

Author	Frequency (f)	Leading top (10)
Kraus, R.	5	1
Mallen, M.J.	5	1
Vogel, D.L.	5	1
Alemi, F.	3	2
Anthony, K.	3	2
Campbell, M.A.	3	2
Hanley, T.	3	2
Harge, A.	3	2
Richards, D.	3	2
Day, S.X.	3	2
Total		

As it can be seen from Table 8 which demonstrates the top 10 writers on this subject; the leaders are Kraus, Mallen, and Vogel, with an increasing number of followers (such as Alemi, Campbell) with near publications.

Distribution of the number of research articles on ‘online counselling’ with reference to the affiliation.

Table 9. Documents by affiliation

Affiliation	Frequency (f)	Leading top (10)
Farleigh Dickenson University	5	1
Iowa State University	5	1
Queensland University of Technology	5	1
Obafemi Awolowo University	4	2
University of Manchester	3	3
Trinity College Dublin	3	3
George Mason University	3	3
University of Queensland	3	3
University Kebangsaan Malaysia	2	4
Total		

In Table 9, the distribution of research articles on ‘online counselling’ is demonstrated with reference to the affiliation. Because of the reason that many universities exist which affiliated only one single document on this topic; only the top 10 are displayed. As expected, USA, UK Universities takes the lead, interestingly followed by Nigeria (Obafemi Awolowo), Irish (Trinity College) and Malaysian (Kebangsaan) universities.

Distribution of the number of research articles on ‘online counselling’ with reference to the document type.

Table 10. Documents by type

Document type	Frequency (f)	Leading top (10)
Article	56	7.1
Book Chapter	22	22.4
Review	10	105.2
Conference Paper	7	7.1
Book	1	1
Article in press	1	1
Letter	1	1
Total	98	100

Table 10 demonstrates that articles are the most preferred document type (57.1%) on ‘online-counselling’, followed by book chapters (22.4%) and reviews (10.2%). And conference papers are very limited (7.1%) when compared with the articles.

Distribution of the number of research articles on ‘online counselling’ with reference to the subject area.

Table 11. Documents by subject area

Subject area	Frequency (f)	Percentage (%)
Psychology	51	52.0
Social Sciences	33	33.7
Medicine	29	29.6
Computer Science	13	13.3
Arts and Humanities	3	3.1

Business, Management and Acc.	3	3.1
Nursing	3	3.1
Engineering	2	2.0
Health Professions	2	2.0
Biochemistry, Genetics and Mol.	1	1.0
Decision Sciences	1	1.0
Economics	1	1.0
Total		100

Distribution of the study numbers based on the subject area is demonstrated in Table 11. As it can be seen from the table, 'Psychology' (52%), Social Sciences (33.7%), Medicine (29.6%) and Computer Science (13.3%) are the mostly studied subject areas with publication.

4. Discussion

Today, online technologies are getting to be used increasingly with various disciplines of education (Abramauskiene, 2016; Bicen & Uzunboylu, 2013). More applications are seen aiming to integrate the use of new information and communication technology (ICT) tools for better teaching, pedagogy and counselling activity practice. We may see a similar progression path in the educational departments of the universities. A demand for more research and project work is valid today for various departments of universities with the Computers and Information Technology Departments. Since 'online' communication is among the leading phenomenon for ICT integration to any area of education, it will not be a surprise to guess that 'online counselling' will be among the major titles that may receive more attention for research in the near future for developing universities.

Keeping in mind this reality, the results showed that there is a clear increase in the number of research studies established related with OC between the years 2000 and 2017. The research done by the researchers from USA universities (39) takes the lead, just followed by the UK (11) and Australian universities (10). Despite the fact that the research carried out on OC by the researchers from Turkish Universities surpluses many other countries, the number of studies implemented by Turkish university researchers on OC was only two.

According to the results, it is seen that teams made-up with 2–3 researchers are most preferred team structures then others, while solo membered research teams are still popular. It is interesting to note that, while with 39 studies the leading OC research country USA's universities preferred single authored studies as only as 22% of its total; all studies by the researchers on OC from Turkish Universities (2) is established totally with solo researchers (100%).

'Analysing Online Counselling' (15) and 'Medical Health and OC' (10) oriented research studies are the most worked on application areas. Furthermore, the results showed that 'Literature Review' (19), 'Surveys' (10) and 'Experimental' (8) studies are the mostly preferred research models used for OC research.

5. Conclusion

As a conclusion, the following recommendations can be made based on the results of this study:

- The need for motivating and supporting multidisciplinary research for online counselling in the world today keeps its validity. Similar as the recommendations for a need of more research studies using mixed methods on 'learning through digital technology' in language education as expressed

by Sert and Boynuegeri (2016) and online guidance basis and applications (O-NET) used to share information between schools, teachers, students and parents (Prasertcharoensuk & Tapkhwa, 2016; Yaman & Eryigit, 2016); more studies related with 'online counselling' should be conducted, especially in developing countries. Additionally, the reasons for the booming total research number achieved for the years 2005, 2011 and 2012 may be further investigated.

- It appears that there is a lack in the number of studies on 'system development for online-counselling' and 'factor analysis' application areas familiar with Ozturk, Eyikara and Baykara (2016)'s study for nursing students. These research areas may need to receive more attention in terms of increasing the literature for advanced research. Also, similar research studies of 'scale development' like Tugun (2016)'s, 'mixed' and 'interview' research models need to be enhanced and receive more attention from the researchers. This may also help to deepen the knowledge of evaluating the effectiveness of online counselling which still involves many debates and oppositions (face-to-face counselling against online counselling).
- Considering the increase in the number of research studies established in the developed countries for online counselling, the results which can be driven from Table. 4 also indicates that there is a need for supporting team constructions with more than one members on 'online counselling' for the research studies from the Turkish Universities. This may help motivate Turkish researchers in this area to create additional basis for improving collaboration between university departments, universities and support new enhanced multidisciplinary project work.

6. Limitations

- This study is limited to the articles published in SCOPUS database index only, which were open-access, related with online counselling or e-counselling within the years 2000–2017.
- This study is limited to the criteria indicated in the sub-aims of the study.

References

- Abramauskiene, J. (2016). The characteristics of applying computer technologies in the process of musical education. *Global Journal of Information Technology: Emerging Technologies*, 5(2), 95–100. doi: 10.18844/gjit.v5i2.199
- Akhisan, U., Yurtay, N., Yurtay, Y. & Esitti, F. (2016). Sosyal sorumluluk projelerinde gorme engelliler icin yeni yaklasimlar: Bir E-ticaret sitesi kullanilabilirliigi. *International Journal of Innovative Research in Education*, 3(2), 50–54. doi: 10.18844/ijire.v3i2.996
- Baglama, B. (2016). Evaluating the usefulness of DSM in diagnosing mental health problems: a review of the literature. *Global Journal of Psychology Research: New Trends and Issues*, 6(1), 46–51. doi: 10.18844/gjpr.v6i1.475
- Bagriyanik, S. & Karahoca, A. (2016). Personal learning environments: a big data perspective. *Global Journal of Computer Sciences: Theory and Research*, 6(2), 36–46. doi: 10.18844/gjcs.v6i2.1474
- Bicen, H., Ozdamli, F. & Uzunboylu, H. (2014). Online and blended learning approach on instructional multimedia development courses in teacher education. *Interactive Learning Environments*, 22(4), 529–548.
- Bicen, H. & Uzunboylu, H. (2013). The use of social networking sites in education: a case study of facebook. *Journal of Universal Computer Science*, 19(5), 658–671.
- Bradley, L. (2015). The mobile language learner—use of technology in language learning. *Journal of Universal Computer Science*, 21(10), 1269–1282.
- Ballesteros, J. L. & Hilliard, R. C. (2015). U.S.-Based Latina/O college students' attitudes toward online counseling. *International Journal for the Advancement of Counselling*, 38, 269–285. doi: 10.1007/s10447-016-9271-x
- Celik, B. & Uzunboylu, H. (2015). High school students' attitudes towards distance education: comparative study. *Procedia-Social and Behavioral Sciences*, 197, 292–297.

- Capri, B. (2017). The investigation of general self-efficacy beliefs and life satisfaction of the job and vocational counselor education candidates' in terms of socio-demographic variables. *New Trends and Issues Proceedings on Humanities and Social Sciences*, 3(3), 25–33. doi: 10.18844/gjhss.v3i3.1614
- Cook, J. E. & Doyle, C. (2002). Working alliance in online therapy as compared to face-to-face therapy: preliminary results. *Cyberpsychology and Behavior*, 5(2).
- Dowling, M. & Rickwood, D. (2016). Exploring hope and expectations in the youth mental health online counselling environment. *Computers in Human Behavior*, 55, 62–68.
- Ellis, R., Goodyear, P., Prosser, M. & O'Hara, A. (2006). How and what university students learn through online and face-to-face discussions: conceptions, intentions and approaches. *Journal of Computer Assisted Learning*.
- Karahoca, D. (2013). Meta-cognitive tool development for history teaching: investigating how software usability affects student achievements. *Journal of Universal Computer Science*, 19(5), 619–638.
- Kolog, E. A., Sutinen, E. & Ruoho, M. V. (2014). 'E-counselling implementation: Students' life stories and counselling technologies in perspective', *International Journal of Education and Development using Information and Communication Technology (IJEDICT)*, 10(3), 32–48.
- Lazo, C. M., Covacho, E. H. & Barosso, J. A. G. (2016). Applying inter-methodological concepts for enhancing media literacy competences. *Journal of Universal Computer Science*, 22(1), 37–54.
- Mallen, M. J., Vogel, D. L., Rochlen, A. B. & Day, S. X. (2005). Online counseling: reviewing the literature from a counseling psychology framework. *The Counseling Psychologist*, 33(6), 819–871. doi: 10.1177/0011000005278624
- Ozturk, D., Eyikara, E. & Baykara, Z. (2016). The opinions of nursing students regarding the first implementation of distance education. *World Journal on Educational Technology: Current Issues*, 9(2). doi: 10.18844/wjet.v9i2.542
- Prasertcharoensuk, T., Tapkhwa, N. (2016). Schools, parents, and community partnership enhancing students' learning achievement. *Contemporary Educational Researches Journal*, 6(1), 30–39. doi: 10.18844/cej.v6i1.593
- Richards, D. & Viganò, N. (2013). Online counseling: A narrative and critical review of the literature. *Journal Of Clinical Psychology*, 69(9), 994–1011. [C 2013 Wiley Periodicals, Inc. Published online in Wiley Online Library: wileyonlinelibrary.com/journal/jclp]. doi: 10.1002/jclp.21974.
- Sert, N. & Boynuegri, E. (2016). Digital technology use in ELT classrooms and self-directed learning. *World Journal on Educational Technology: Current Issues*, 8(1), 51–61.
- Sorakin, Y. & Uzunboylyu, H. (2017). Evaluation of content analysis of filial therapy studies. *Ponte*, 73(6), 334–344.
- Tugun, V. (2016). Validity and reliability dissertation of the scale used for determination of perceptions and attitudes of teacher's proficiency in tablet PC-supported education. *Cypriot Journal of Educational Sciences*, 11(2), 51–57. doi: 10.18844/cjes.v11i2.617
- Wright, J. (2002). Online counselling: learning from writing therapy. *British Journal of Guidance & Counselling*, 30(3), 285–298. doi: 10.1080/030698802100002326
- Yaman, G. & Eryigit, D. (2016). The most common cases and counseling approaches in school counseling. *Global Journal of Counseling and Guidance in Schools: Current Perspectives*, 6(3), 53–60. doi: 10.18844/gjgc.v6i3.1434
- Zamani, Z. A. (2000). *Computer technology and counseling, school of psychology and human development, faculty of social science and humanities*, Selangor, Malaysia: University Kebangsaan Malaysia
- Zamani, Z. A. (2009). 'Computer technology and counselling', school of psychology and human development'. *Faculty of Social Science and Humanities, IIEE*.