3D Multimedia E-Book Based on Mobile Learning Basic Competency of Artistic Hair Coloring

Murni Astuti[1]*, Siti Hajar Thaitami[2] iD

[1,2] Program Studi Pariwisata dan Perhotelan Universitas Negeri Padang, Indonesia
*Corresponding author: murniastuti@fpp.unp.ac.id

Abstrak

Masalah penelitian adalah rendahnya pemahaman siswa pada mata pelajaran tata rambut dan pewarnaan yang berdampak pada hasil belajar siswa. Tujuan penelitian ini adalah untuk mengembangkan media pembelajaran berbasis e-book pada materi pokok penerapan ganda. pewarnaan rambut di SMK. Jenis penelitian ini adalah penelitian dan pengembangan dengan menggunakan model 4-D. Populasi dalam penelitian ini adalah siswa kelas XI KC II SMK yang berjumlah 32 orang. Teknik pengumpulan data menggunakan angket validitas dan kepraktisan. Teknik analisis data adalah dengan menghitung skor penilaian media e-book dari angket yang diberikan dan dikategorikan sesuai dengan interpretasi yang diperoleh. Hasil penelitian validasi media adalah 0,89 (kategori sangat valid) dan validasi materi 0,82 (kategori sangat valid). Hasil kepraktisan tanggapan siswa sebesar 86,07% (kategori sangat praktis) dan dari tanggapan guru sebesar 87,2 (kategori sangat praktis). Pembelajaran berbasis e-book dapat dikatakan valid dan praktis untuk digunakan sebagai bahan ajar di kelas pada mata pelajaran mencukur dan mewarnai rambut untuk meningkatkan hasil belajar siswa

Kata kunci: Pengembangan, Multimedia E-Book, Pemangkasan dan Pewarnaan Rambut

Abstract

The problem of research is the low understanding of students in the subject of hair trimming and coloring which has an impact on student learning outcomes. The purpose of this study was to develop an e-book-based learning media on the subject matter of double application hair coloring at SMK. This type of research is research and development using a 4-D model. The population of this research is the students of class XI KC II SMK totaling 32 people. The data collection technique used a validity and practicality questionnaire. The data analysis technique is by calculating the score of the e-book media assessment from the questionnaire given and categorized according to the interpretation obtained. The results of the media validation study were 0.89 (very valid category) and 0.82 material validation (very valid category). The results of the practicality of student responses were 86.07% (very practical category) and from the teacher's response of 87.2 (very practical category). E-book-based learning can be said to be valid and practical to be used as teaching materials in the classroom on hair trimming and coloring subjects to improve student learning outcomes.

Keywords: Development, Multimedia, E book, Hair Trimming and Coloring.

1. INTRODUCTION

Technological developments occur so fast, that it demands that all of us must be able to keep up with the times if we don't want to be left behind (Gupta & Wilemon, 1990; Teece, 1986). Likewise in the world of education is something important for human life, because education can affect the quality of life (Winters, 2011; Yaghoubi et al., 2012). So that the main purpose of the learning process is to require students to succeed in applying the abilities they have acquired in general theory and practicum in particular, in accordance with the objectives of the SMK itself, namely to produce skilled workers in their fields (Biggs, 1999; Dolmans et al., 2005). Learning is an important part of the educational process. Previous research stated that learning is a process of interaction between the components of the learning system (Bontis et al., 2002; Daryanto, 2012). A good learning occurs when the process of good educative communication occurs between students and educators as well as between students themselves. In the teaching and learning process the presence of the media has a fairly important meaning, in that case the ambiguity of the materials conveyed can be

helped by presenting the media as an intermediary for the complexity of the material delivered (Kern, 2014; Trianasari et al., 2022). The business world or the industrial world is one of the important elements in the world of employment. So there needs to be an adjustment between the world of business/industry and the world of education as a source of labor income (Nilasari, 2018; Ta'rifin, 2018). The abilities/skills needed by the business world are: a) Have a good attitude towards work; b) Have the ability to adapt and learn; c) Able to cooperate with other people; d) On time; e) Have good communication skills and f) have a good attitude for example always be friendly to clients (Kang & Ritzhaupt, 2015; Savanevičienė et al., 2008).

The use of appropriate learning media will be very helpful in the learning process. Learning media are learning resources other than teachers as distributors or liaisons for teaching messages that are held and or created in a planned manner by teachers or educators (Hendratno et al., 2022; Nasution et al., 2022). However, in its implementation, not many teachers make maximum use of learning media. Teachers are required to be more creative in creating a learning atmosphere in order to motivate students to be active, creative, and innovative. Learning media are everything related to software and hardware that can be used to convey the content of teaching materials from learning resources to learning (individual/group), which can stimulate thoughts, feelings, attention, and interest in learning in such a way that the learning process (inside/ outside the classroom) to be more effective (Elpira & Ghufron, 2015; Soliu & Elisha, 2019). Efforts that can be made by teachers to achieve ideal learning, one of which is by using a variety of varied learning media that can be used so that students are able or able to understand the material that has been conveyed, one of the media that is often used for practical subjects during learning is through e-book learning media. Where the e-book learning media is one of the multimedia that can be used by teachers in the teaching and learning process (Adam & Suprapto, 2019; Muqarrobin & Kuswanto, 2016). The use of e-book media is expected to encourage students' interest and understanding during the learning process because in its use students not only listen to explanations of the material presented by the teacher with lectures but students are also invited to see directly with e-book media so that students easily understand the material and will not feel bored listening to the presentation of the material because the material presented is interesting on e-book shows, because so far the learning media used by teachers are less varied.

Based on the results of the researchers' observations while conducting Educational Field Practices in August-December 2021 at SMK N 6 Padang City, especially in the beauty department in the subject of Trimming and Hair Coloring in class XI the use of learning media used in the teaching and learning process uses the lecture method. Based on the author's interview with the teacher of hair trimming and coloring subjects on September 29, 2021 at SMK N 6 Padang City, the syllabus made by the teacher in the subject of hair trimming and coloring consists of 8 basic competencies. This can be seen from the scores of students' practice results at KD 3.8 Based on the Grade XI students' skill score on KD 3.8 applying double hair color ombre technique application, it can be seen that there are still many student scores who do not reach the KKM, (75) out of 32 students in class XI KC2 only 15 students who have grades according to and above the KKM, besides that there are also some students who have grades below the KKM. under KKM for not carrying out the task of practicing ombre technique hair coloring. So, it can be concluded that the value of students who do not reach the KKM is more than 50%. One of the efforts that can be made by teachers to improve students' understanding of basic competencies (KD) 3.8 Applying Double hair coloring applications with the ombre technique in the learning process is to develop media in the form of a learning e-book, where the learning e-book that will be created contains a combination of theory with an e-book tutorial for hair coloring practice,

the application of the complete ombre technique. The double application of ombre hair coloring is a difficult subject because students are required to be able to use bleach and choose the right color before applying it to the hair.

Previous research stated that to produce interesting media, learning e-books can be packaged in multimedia (Lee et al., 2019; Rasmussen, 2018). Learning e-book media can be used to deliver learning materials in a shorter time without reducing the study material of learning materials (Huang, 2013; Morgan, 2013). Meanwhile, according to previous research stated that the use of e-books can be very helpful in the learning process that displays a lot of movement (Kao et al., 2019; Martin & Quan-Haase, 2013). With the development of this learning e-book media, it is expected to improve learning outcomes, interest, and enthusiasm for new learning for students. The purpose of this study was to develop an e-book-based learning media on the subject matter of double application hair coloring at SMK Negeri 6 Padang.

2. METHODS

This type of research is research and development (Research and Development) with a 4D model to produce teaching media in the form of an e-book containing hair coloring material with the Double Application of the Ombre Technique. The place of research is SMKN 6 Padang City, and the subject of the product trial of the research is class XIKC2 students of SMKN 6 Padang City in the 2021 academic year, totaling 32 students. The data collection technique used a validity and practicality questionnaire. The data analysis technique is by calculating the score of the e-book media assessment from the questionnaire given and categorized according to the interpretation obtained. The instrument used in data collection in this study was a questionnaire (questionnaire). The questionnaire used in this study is a questionnaire in the form of an attitude scale, namely the Likert scale.

3. RESULTS AND DISCUSSION

Result
Data Validity Analysis
Table 1. Validation Results by Media Experts on Learning Media E-book Based Learning

No	Aspect of assessment	Validation value	Category
1.	Media quality	0,90	Very valid
2.	Use of Language	0,85	Very valid
3.	Media Layout	0,94	Very valid
	Average	**0,89**	**Very valid**

Based on the Table 1, it is known that the average score of the e-book media assessment obtained from the media quality aspect is 0.90 with a very valid category, the language use aspect is 0.85 with a very valid category and the media layout aspect is 0.94 with very valid category and obtained an overall average of 0.89 which is included in the very valid category. After validating the e-book tutorial-based learning media, there are still revisions according to the suggestions from the validator.

Based on the Table 2, it is known that the average score of the e-book material assessment obtained from the quality aspect of the material is 0.89 with a very valid category and the material usefulness aspect is 0.75 with a valid category. After the validity of the e-book material, there is a revision from the validator. The results of data analysis as a whole obtained an average score of 0.82 with a very valid category.

Table 2. Results of Validation by Material Experts on Learning Media Based on E-book Tutorial

No	Aspect of assessment	Validation value	Category
1.	Material Quality	0.89	Very valid
2.	Material Benefit	0.75	Valid
	Average	**0.82**	**Very valid**

Practical Data Analysis

Table 3. Practical Results of E-book Media with Beauty Cosmetology Students SMK N 6 Padang

No	Aspect of assessment	Validation value	Category
1.	Appearance	85.83%	Very practical
2.	Operation	85.67%	Very practical
3.	Benefits	86.71%	Very practical
	Average	**86.07%**	**Very practical**

Based on the Table 3, the practicality of e-book media based on student responses from the Beauty Department from the appearance aspect got a score of 85.83% in the Very practical category, the operational aspect with a value of 85.67% in the Very practical category, and the usability aspect got a score of 86.71 % with category Very practical. Overall, the average score for the practicality test from students is 86.07% with very practical criteria. From this assessment, it shows that every aspect of the learning e-book has been practically used in learning.

Table 4. Practical Results of E-book Media with Beauty Cosmetology Teachers SMK N 6 Padang

No	Aspect of assessment	Validation value	Category
1.	Student interest	95.50%	Very practical
2.	Process of using	90.00%	Very practical
3.	Increased student activity	79.16%	practical
4.	Efficiency of time used	87.50%	Very practical
	Average	**87.20%**	**Very practical**

Based on the Table 4, it can be seen that the practicality of the e-book media based on the beauty management teacher's response from the aspect of student interest got a score of 96.5% with a very practical category, the process aspect of its use with a value of 90% with a very practical category, the aspect of increasing student activity got a score of 79 .16% in the practical category and the aspect of time efficiency used obtained a value of 87.5% in the Very practical category. Overall, the average score for the practicality test from the teacher is 87.2% with very practical criteria. From this assessment, it shows that every aspect of the learning e-book has been practically used in learning.

Test the Effectiveness of Students' Understanding

Table 5. Results of the Effectiveness of Students' Understanding of Video Media with Beauty Teachers at SMK N 6 Padang

Klasifikation	Category	F	%
81-100%	Very Worthy	20	100
61-80%	Worthy	0	0

Klasifikation	Category	F	%
41-60%	Decent enough	0	0
21-40%	Not feasible	0	0
0-20%	Very Inappropriate	0	0
Σ		20	**100**

Product Revision

From the testing of media experts and material experts, it was found that the learning e-book media on the subject of hair trimming and coloring is very valid and can be used with revisions according to suggestions by the validator. The revision was carried out after receiving input and suggestions from the validator. The revised video media was then given to teachers and students for practicality and effectiveness tests in order to find out the practicality and effectiveness of the learning video media that had been developed.

Media Display of Double Application Hair Coloring Learning E Book

This learning e-book consists of an opening section that contains the title of the e-book and an opening for starting learning. For more details can be seen in the Figure 1.
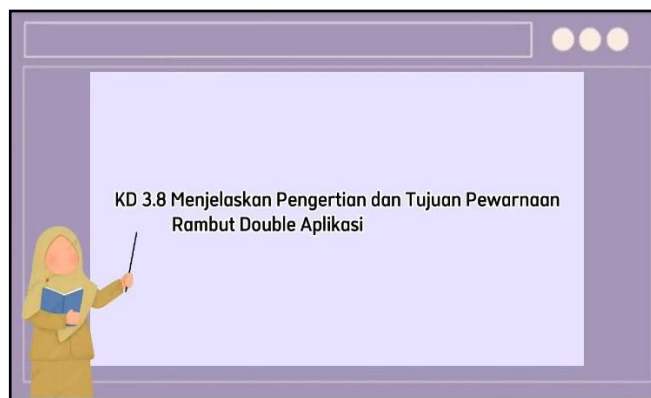

Figure 1. Title Page Display

Figure 2. Display of Basic Competencies

Figure 2 shows the basic competence of double application hair coloring which consists of analyzing and doing double application coloring.
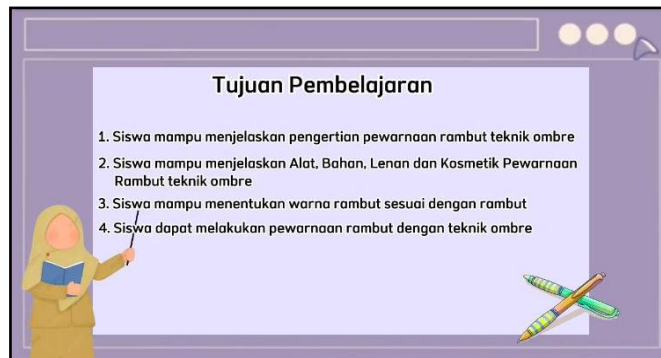
Figure 3. Display of Learning Objectives

In Figure 3, the learning objectives are shown so that students know what will be achieved in the basic competence of double application hair coloring.
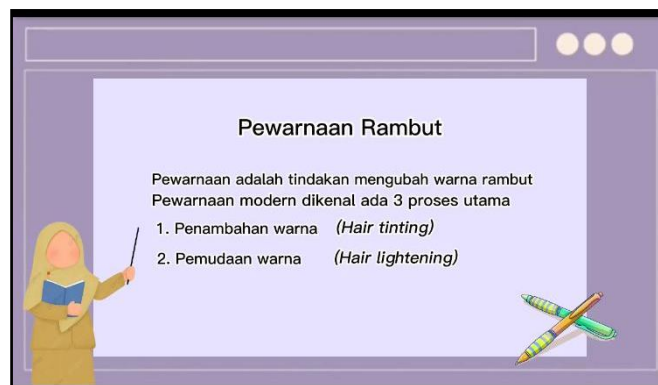

Figure 4. Display of Double Application Hair Coloring Material

In Figure 4, the basic application of double hair coloring material is displayed, the goal is for students to pay attention to the delivery of the next e-book, which is in the form of a double application hair coloring process, and in Figure 5 it is the submission of the closing e-book tutorial.

Figure 5. Display of Closing Submission in the Learning Process

Discussion

Test the validity of the learning e-book media using a questionnaire, consultation by showing the initial form of the media that was made. Several aspects were observed in testing

the validity of the learning media, namely the design of media and materials. In media design validation, an average score of 0.89 was obtained with a very valid category and for material validation, an average score of 0.82 was obtained with a very valid category. Based on the assessment of the validator, the learning e-book media is suitable for use with revisions according to suggestions for improvement. The degree of accuracy between the data that actually occurs on the object and the data collected by researchers to find the validity of an item, we correlate the item score with the total of these items (Sugiyono., 2016). The validity of the learning e-book media developed obtained from validator responses. The media and material validators consist of 7 people who are divided into 3 media expert validators lecturers from the lecturers of the Faculty of Tourism and Hospitality, Padang State University and 3 lecturers for material expert validators and 1 Beauty Teacher at SMK N 6 Padang. So it can be concluded that the learning e-book media on the basic competence of double hair coloring application seen from the design of the media and material is very valid. Previous research stated that if the instrument is valid, it means that the measuring instrument used to obtain the data is valid so that the instrument can be used to measure what should be measured (Riduwan, 2012). So, if the learning e-book media has been declared valid, then the media can be used in the learning process. So that the basic technique of hair curling tutorial e-book media is feasible to use in learning activities.

The assessment of the practicality of the learning e-book media was obtained from a practicality test questionnaire based on student responses as many as 32 students got an average score of 86.07% with a very practical category. The practicality test from the results of the responses of 2 teachers obtained an average score of 87.2% with a very practical category. Practicality is the use of learning media that has been developed. Previous research stated that practicality is the convenience that exists in the instrument, both in preparing, using, interpreting or obtaining results as well as convenience in storing (Agusta, 2022; Rahim et al., 2021). The level of achievement with the acquisition of 81%-100% with a very practical interpretation which means that the product is practical and suitable for use in learning (Riduwan, 2012). With the results that have been obtained from the responses of students and teachers, it can be concluded that this learning e-book is practical to be used as a learning medium to support the jobsheet media and textbooks given by the teacher. This learning e-book can answer students' questions about the application of double hair coloring processes that have been described in jobsheets and textbooks that can only be read but cannot see the implementation process.

4. CONCLUSION

The development of learning media on application double hair coloring subject uses a 4D model with a definition stage, Design stage, Development and Desseminate stage. The results of the study obtained a value for media design validation of 0.89 with a very valid category and for material validation 0.82 with a very valid category. The results of the research for the practicality test were seen from the student responses of 86.07% in the very practical category and the practicality value obtained from the teacher's response of 87.2% in the very practical category. The results obtained indicate that the media developed has been practically used in classroom learning activities.

5. REFERENCES

Adam, A. S., & Suprapto, N. (2019). One-Stop Physics E-Book Package Development for Senior High School Learning Media. *Int. J. Emerg. Technol. Learn*, *14*(19), 150–158.

Agusta, A. R. (2022). Development of Learning Outcomes Assessment Instruments Using

Computer Based Test (CBT). *Edumaspul: Jurnal Pendidikan*, *6*(1), 255–267. https://doi.org/10.33487/edumaspul.v6i1.3070.

Biggs, J. (1999). What the student does: Teaching for enhanced learning. *Higher Education Research & Development*, *18*(1), 57–75. https://doi.org/10.1080/0729436990180105

Bontis, N., Crossan, M. M., & Hulland, J. (2002). Managing an organizational learning system by aligning stocks and flows. *Journal of Management Studies*, *39*(4), 437–469. https://doi.org/10.1111/1467-6486.t01-1-00299.

Daryanto, M. R. (2012). *Model Pembelajaran Inovatif*. Gaya Media.

Dolmans, D. H., De Grave, W., Wolfhagen, I. H., & Van Der Vleuten, C. P. (2005). Problem-based learning: Future challenges for educational practice and research. *Medical Education*, *39*(7), 732–741. https://doi.org/10.1111/j.1365-2929.2005.02205.x.

Elpira, N., & Ghufron, A. (2015). Pengaruh penggunaan media powerpoint terhadap Minat dan hasil belajar ipa siswa kelas IV SD. *Jurnal Inovasi Teknologi Pendidikan*, *2*(1), 94–104. https://doi.org/10.21831/tp.v2i1.5207.

Gupta, A. K., & Wilemon, D. L. (1990). Accelerating the development of technology-based new products. *California Management Review*, *32*(2), 24–44. https://doi.org/10.2307/411666.

Hendratno, H., Yermiandhoko, Y., & Yasin, F. N. (2022). Development of Interactive Story Book For Ecoliteration Learning to Stimulate Reading Interest in Early Grade Students Elementary School. *IJORER: International Journal of Recent Educational Research*, *3*(1), 11–31. https://doi.org/10.46245/ijorer.v3i1.179.

Huang, H. C. (2013). E-reading and e-discussion: EFL learners' perceptions of an e-book reading program. *Computer Assisted Language Learning*, *26*(3), 258–281. https://doi.org/10.1080/09588221.2012.656313.

Kang, Y., & Ritzhaupt, A. D. (2015). A job announcement analysis of educational technology professional positions: Knowledge, skills, and abilities. *Journal of Educational Technology Systems*, *43*(3), 231–256. https://doi.org/10.1177/0047239515570572.

Kao, G. Y. M., Chiang, X. Z., & Foulsham, T. (2019). Reading behavior and the effect of embedded selfies in role-playing picture e-books: An eye-tracking investigation. *Computers & Education*, *136*, 99–112. https://doi.org/10.1016/j.compedu.2019.03.010.

Kern, R. (2014). Technology as Pharmakon: The promise and perils of the internet for foreign language education. *The Modern Language Journal*, *98*(1), 340–357. https://doi.org/10.1111/j.1540-4781.2014.12065.x.

Lee, C. H., Chen, C. H., & Trappey, A. J. (2019). A structural service innovation approach for designing smart product service systems: Case study of smart beauty service. *Advanced Engineering Informatics*, *40*, 154–167. https://doi.org/10.1016/j.aei.2019.04.006.

Martin, K., & Quan-Haase, A. (2013). Are e-books replacing print books? Tradition, serendipity, and opportunity in the adoption and use of e-books for historical research and teaching. *Journal of the American Society for Information Science and Technology*, *64*(5), 1016–1028. https://doi.org/10.1002/asi.22801.

Morgan, H. (2013). Multimodal children's e-books help young learners in reading. *Early Childhood Education Journal*, *41*(6), 477–483. https://doi.org/10.1007/s10643-013-0575-8.

Muqarrobin, T. F., & Kuswanto, H. (2016). Development of an android-based physics e-book to ease students' physics learning And its influence on their learning achievement. *American Journal of Engineering Research*, *5*(10), 223–229.

http://staffnew.uny.ac.id/upload/131656346/penelitian/Development of an android-based physics e.pdf.

Nasution, A. A., Harahap, B., Harahap, R. A., & Wahdi, N. (2022). Socialization of the Use of Multimedia as a Learning Tool to Improve the Skills of MAS Darul Ilmi Students. *International Journal of Community Service (IJCS)*, *1*(1), 48–61. https://doi.org/10.55299/ijcs.v1i1.88.

Nilasari, Y. (2018). Curriculum Development Based On INQF and Business/Industries Sector for Improvement Competency of Basic Pattern Making Students at Vocational High School. *IOP Conference Series: Materials Science and Engineering*, 012029.

Rahim, B., Usmeldi, U., & Karudin, A. (2021). Practicality Practicality of Development of Jigsaw Type of Cooperative Model Learning Module in Scientific Work Screening courses and Seminars. *Jurnal Teknologi Informasi Dan Pendidikan*, *14*(3), 251–256. https://doi.org/10.24036/jtip.v14i3.495.

Rasmussen, L. (2018). Parasocial interaction in the digital age: An examination of relationship building and the effectiveness of YouTube celebrities. *The Journal of Social Media in Society*, *7*(1), 280–294. https://www.thejsms.org/index.php/JSMS/article/view/364/167.

Riduwan. (2012). *Skala pengukuran variabel–variabel penelitian*. Alfabeta.

Savanevičienė, A., Stukaitė, D., & Šilingienė, V. (2008). Development of strategic individual competences. *Engineering Economics*, *58*(3). https://inzeko.ktu.lt/index.php/EE/article/view/11559/6240.

Soliu, S. A., & Elisha, D. (2019). Instructional Media Provisions and Utilization for Teaching-Effectiveness in Classrooms. *KIU Journal of Social Sciences*, *4*(4), 163–170. https://ijhumas.com/ojs/index.php/kiujoss/article/view/445/415.

Sugiyono. (2016). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. PT Alfabet.

Ta'rifin, A. (2018). Motivation and Management: Flexibility of the implementation of motivation theories in pesantren context. *HIKMATUNA*, *4*(1), 145–168. https://doi.org/10.28918/hikmatuna.v4i1.1265.

Teece, D. J. (1986). Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. *Research Policy*, *15*(6), 285–305. https://doi.org/10.1016/0048-7333(86)90027-2.

Trianasari, E., Yuniwati, I., & Suryantini, M. D. (2022). SEM-PLS Analysis of Factors Affecting the Effectiveness of English Course Online Learning during Covid-19 Pandemic. *Jo-ELT (Journal of English Language Teaching) Fakultas Pendidikan Bahasa & Seni Prodi Pendidikan Bahasa Inggris IKIP*, *9*(1), 83–94. https://doi.org/10.33394/jo-elt.v9i1.5228.

Winters, J. V. (2011). Human capital, higher education institutions, and quality of life. *Regional Science and Urban Economics*, *41*(5), 446–454. https://doi.org/10.1016/j.regsciurbeco.2011.03.001.

Yaghoubi, A., Tabrizi, J. S., Mirinazhad, M. M., Azami, S., Naghavi-Behzad, M., & Ghojazadeh, M. (2012). Quality of life in cardiovascular patients in Iran and factors affecting it: a systematic review. *Journal of Cardiovascular and Thoracic Research*, *4*(4), 95. https://doi.org/10.5681/jcvtr.2012.024.