

The Influence of *Tepuk Tebak* Games as Occupational Health and Safety Education on the Knowledge Level of Hair Salon Workers and Customers

Muhammad Ditra Rizallihadi^{1*}, Elma Nurul Amalia¹, Sharon Oktriyani¹, Sifa Sabani Dimas¹, Harisha Fadil²

¹Department of Public Health, Faculty of Medicine, Universitas Negeri Semarang, Indonesia

²Western Australia School of Mines, Faculty of Science and Engineering, Curtin University, Australia

*Correspondence to: muhammadditrazo@gmail.com

Abstract: Working in a hair salon involves exposure to various potential hazards, such as harmful chemicals from hair care products, the risk of injury from sharp tools, and non-ergonomic working postures. These issues can be addressed by enhancing workers' knowledge of occupational safety and health practices by providing education using available educational media. This study aims to analyze the impact of implementing educational media in the form of games on increasing knowledge among salon workers and clients using salon services. The research method used is a pre-experimental study with a single-group pre-test and post-test design. The data obtained comes from two types of sources: primary data and secondary data. Primary data were collected through interviews and direct field observations using a questionnaire as the research instrument, while secondary data were obtained through a literature review. The study showed a significant increase in workers' knowledge after being educated through games. The average knowledge score of workers increased from 45 (pre-test) to 97.5 (post-test). Similarly, salon clients' knowledge also significantly increased from an average score of 67.76 (pre-test) to 93.16 (post-test), with a p-value (<0.001).

Keywords: knowledge, games, education, salon

INTRODUCTION

Occupational Safety and Health (OSH) is an important aspect that needs attention in various work sectors, including informal sectors like hair salons. A salon is a type of business that deals with care services ranging from hair, nails, face, and more. In a hair salon, salon workers perform tasks such as washing and cutting hair, coloring hair, curling and straightening hair, and providing creambath treatments or keratin hair treatments, among others (Audina et al., 2017). Although working in a hair salon may appear less risky than in other industries, salon workers and clients are still exposed to various potential hazards, such as harmful chemicals from hair care products, the risk of injury from sharp tools, and non-ergonomic working postures. While working in a hair salon, workers may face the risk of workplace accidents or illnesses due to their jobs. The hair salon work environment presents various potential hazards that can affect the safety and health of workers, including physical, biological, chemical, mechanical, ergonomic, and psychosocial hazards. Salon workers are a profession with a high level of exposure to chemicals used during their work in the salon (Haerani & Kartini, 2023). These chemicals or substances may be irritative, posing a risk of skin disorders such as contact dermatitis if the exposure occurs repeatedly over a long period of time. Therefore, understanding and applying OSH principles is crucial for protecting workers' and clients' health and safety.

Workplace accidents can be influenced by two factors: unsafe actions and unsafe conditions. Unsafe actions are dangerous acts by humans or workers influenced by internal factors such as unsafe attitudes and behaviors, lack of knowledge and skills, decreased concentration, lack of work motivation, fatigue, and boredom (Monalisa et al., 2022). Meanwhile, risk factors affecting unsafe environmental conditions may include ineffective personal protective equipment, hazardous materials, and poorly functioning tools or machines that can endanger workers (Irzal, 2016). Data from the International Labour Organization in 2018 showed that each year, about 380,000 workers, or 13.7% of 2.78 million workers, die due to workplace accidents or occupational diseases (ILO, 2018). Additionally, more than 374 million people suffer from injuries, wounds, or illnesses each year due to workplace accidents. One of the factors influencing workplace accidents is the level of knowledge. Good knowledge will enhance workers' understanding and awareness, helping to implement an OSH culture in the workplace. Knowledge can shape an individual's behavior and result in a positive attitude toward responding to hazards in the work environment (Rudyarti, 2017).

The high rate of workplace accidents needs to be reduced. One effective approach to achieving this goal is increasing workers' knowledge about occupational safety and health. This can be done through education as an effort to prevent workplace accidents. Education aims to improve workers' knowledge, attitudes, and awareness.

Education provided can cover occupational safety and health, including potential hazards that may occur and how to control those hazards. With a better understanding of potential hazards in the work environment and appropriate preventive measures, workers can be more vigilant and proactive in protecting themselves and their colleagues from accident risks. The target of education is not only workers but also their families, prospective workers, business owners, customers, or other people visiting the salon. This is done so that the entire community has good awareness and knowledge, showing concern for safety and health at the workplace.

Workers can be educated using various techniques, including game-based educational tools that can help convey messages effectively. Research conducted by Sasgia Nofrihensi found that providing educational interventions through games can enhance knowledge (Nofrihensi, et al., 2023). One innovative and engaging educational method is through interactive games, such as the game *Tepuk Tebak*. In this study, education was provided through the game *Tepuk Tebak*, a development of the game "*Kata Emak*". This game was adapted to create a card game related to potential hazards that may occur while working in a salon. This study aims to analyze the effectiveness of the *Tepuk Tebak* game as an educational medium in increasing the knowledge of salon workers and clients who have visited hair salons about potential hazards as well as occupational safety and health in hair salons.

METHODS

The variables in this study are as follows: independent variable: implementation of interactive educational media in the form of a game; dependent variable: level of knowledge regarding occupational safety and health in the workplace. The subjects of this study were 40 individuals, consisting of 2 salon workers and 38 salon clients in the vicinity of Universitas Negeri Semarang, who were generally unaware of industrial toxicology. The research method used in this study is a pre-experimental study with a single-group pre-test and post-test design. Rasyid (2020) argues that in experimental research, it is unnecessary to involve two groups of subjects; it is also possible to involve more than two groups or even just one group if all subjects are given the same treatment... In pre-experimental research, the researcher uses existing groups without the need for random assignment of research subjects (pp. 85-86). Since this study involved only one group receiving the treatment without a control group, the selection of subjects did not go through randomization. This research aims to determine the effect of the intervention/treatment on the subjects' characteristics after the experiment through pre- and post-treatment measurements; the chosen method is the pre-experimental one-group pre-test and post-test design.

The data obtained in this study comes from two types of sources: primary and secondary data. The primary data for this research were collected through interviews with salon workers and direct field observations using a questionnaire as the research instrument. The primary data includes work process data; tools, machines, and materials used in the salon; the identity of respondents (workers and customers); and pre-test and post-test results (workers and customers), which will be used to measure the increase in knowledge levels. Secondary data were obtained through a literature review, examining published documents such as previous research on similar topics and other reference sources. This approach was necessary because the salon where this study was conducted is an informal business with an inefficient reporting system, making it difficult for the researcher to rely solely on documents from the business. The statistical analysis used in this study includes a normality test to determine the normality of the data, followed by the Wilcoxon test to observe the effect of the game media on the knowledge of workers and clients.

The game "*Tepuk Tebak*" serves as an educational medium to enhance the knowledge of research subjects regarding occupational safety and health in the workplace. The game consists of the following elements: a minimum of 2 and a maximum of 5 players, with an additional person acting as the referee. The referee distributes the cards to the players, checks the correctness of the answers using an answer sheet, and acts as the timekeeper. Game cards contain hazard factors divided into five types: physical, chemical, biological, psychosocial, and ergonomic hazards. These game cards are distributed to all players. The question cards feature inquiries about workplace hazards and accidents in the salon; for instance, a sample question, "What type of hazard is it if a worker bends over for too long while cutting hair?" The correct answer is: "Ergonomic hazard", indicated. The question cards are assigned points, and the main goal of the game is to collect as many points as possible by correctly answering the questions after slapping the cards.

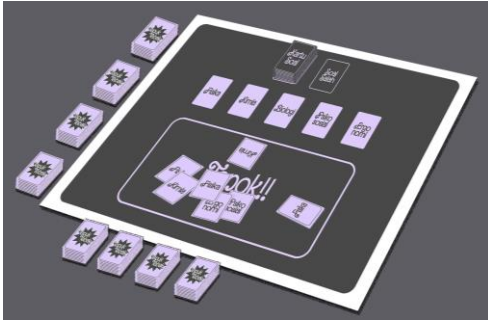


Figure 1. Tepuk Tebak Board Game



Figure 2. Workers Playing Games Tepuk Tebak



Figure 3. Customers Playing Games Tepuk Tebak

The "Tepuk Tebak" game is played as follows: (1) Players decide who will be the referee. (2) Players determine the order of play by doing a *hompimpa* (a traditional Indonesian game for determining order). (3) The referee distributes the game cards to each player until all cards are distributed. (4) The first player places their first card on the game board, flipping the card while stating the hazard factor shown on the game board. (5) If the game card matches the stated hazard factor, all players must rush to slap the card on the game board. (6) The fastest player to slap the card gets to pick a question card and answer the question on it. (7) The referee checks the correctness of the answer using the answer sheet. (8) If the player answers correctly, they keep the question card and earn points. (9) If the player fails to answer correctly, the question card is returned to the game board. (10) The game ends when all the question cards on the game board are used up. (11) The referee then counts the points to determine the winner of the game.

RESULT AND DISCUSSION

Research on Salon Workers

The research results on salon workers were conducted using descriptive analysis on two workers at Salon X in Semarang City.

Table 1. Frequency Distribution of Respondent Characteristics

Characteristics	Category	Frequency (n)	Percentage (%)
Age	39	1	50%
	34	1	50%
Gender	Female	1	50%
	Male	1	50%

Based on Table 1. The respondents are 39 and 34 years old, and the gender distribution is one female and one male.

Table 2. Analysis of Workers' Knowledge Levels Before and After Intervention Using Educational Games

Variable	Mean	n	SD
Pre-test	45	2	7,071068

Post-test	97,5	2	3,535534
-----------	------	---	----------

The test results indicate that workers' average level of knowledge regarding hazards in the salon before being provided with education through the “Tepuk Tebak” game was 45, while the average level of knowledge among workers after being provided with education through the game was 97.5. The increase in workers' average knowledge level shows an improvement in knowledge after being provided with education through the “Tepuk Tebak” game.

Research on Salon Customers

The research results on the level of knowledge of hair salon customers before and after being provided with education using the "Tepuk Tebak" game show a change as presented in the following table:

Table 3. Measurement Results of Customers' Knowledge Level Before Being Provided with Education Using the "Tepuk Tebak" Game

Variable	Mean	n	SD
Pre-test	67,76	38	10,571

Based on Table 3. The average level of knowledge among hair salon customers regarding safety and health before being provided with education through the "Tepuk Tebak" game is 67.76.

Table 4. After Being Provided with Education Using the "Tepuk Tebak" Game

Variable	Median	n	Minimum	Maximum
Post-test	95,00	38	75	100

Based on Table 4. It shows that the median value of customers' knowledge level regarding safety and health in the hair salon after being provided with education through the "Tepuk Tebak" game is 95.

The initial data analysis was conducted using a normality test to determine whether the data in the study follows a normal distribution.

Variable	Sample size (n)	P-value	Data conclusions
Pre-test	38	0.420	Normal
Post-test	38	0.000	Non-normal

Based on the table above, the p-value for the pretest indicates a value of 0.420, which means the data is normally distributed. In contrast, the p-value for the post-test result shows a value of <0.001, indicating that the data is not normally distributed. Based on the normality test results, one of the data sets is not normally distributed. Therefore, the hypothesis test used is the Wilcoxon test.

Table 5. Analysis of Hair Salon Customers' Knowledge Levels Before and After Being Educated Using Tepuk Tebak Game

Variable	N	Sig. (2-tailed)
----------	---	-----------------

Before and after providing education through games	38	0.000
---	-----------	--------------

The statistical test results show that the average knowledge level of hair salon customers regarding safety and health in the hair salon before and after being educated using the *Tepuk Tebak* Game has increased. The knowledge score of customers before education using the *Tepuk Tebak* Game was 67.76, while the knowledge score after education using the *Tepuk Tebak* Game was 93.16. The increase in the knowledge score of customers after education using the *Tepuk Tebak* Game was 41.24 with a p-value of <0.001 , indicating a significant influence of providing education using the *Tepuk Tebak* Game on the improvement of knowledge among hair salon customers.

Based on the analysis, there is an increase in knowledge among hair salon workers and customers after being provided with education on safety and health in hair salons through the "*Tepuk Tebak*" game. This research is supported by previous studies regarding the use of game media in education, which positively impacts increasing knowledge among teenagers. This medium is more readily accepted among teenagers because gaming is an everyday activity for them. The use of unique and engaging game media makes it comfortable for individuals to use, thus facilitating effective knowledge dissemination (Zakiya & Kurniasari, 2021).

Furthermore, this study is supported by research conducted by Nabillah (2022), which demonstrates the influence of health promotion using Card Game media on the knowledge and attitudes of students regarding health protocols in SDN 18, Bengkulu City. Another study on welders also showed differences in workers' knowledge regarding occupational health and safety hazards and prevention before and after receiving education using flip charts (Bajuri, 2014).

The increase in knowledge among workers and customers at one hair salon in Semarang City is attributed to education using game media, which makes hair salon workers and customers more relaxed and comfortable receiving the provided material. During the education process for both hair salon workers, the workers showed great enthusiasm while playing the "*Tepuk Tebak*" game, especially in collecting as many points as possible and competing to quickly get questions by tapping the game cards. This has a positive impact because workers and salon customers gain new knowledge from the correct or incorrect questions, as the researcher will explain the correct answers after the questions are answered.

CONCLUSION

This study analyzes the influence of the "*Tepuk Tebak*" game as an interactive educational medium based on games on occupational safety and health knowledge among workers and customers at a hair salon located in Semarang City. Descriptive analysis results show that two salon workers, aged 39 and 34, consist of one female and one male. The research found a significant increase in workers' knowledge after education. The average knowledge score of workers increased from 45 (pre-test) to 97.5 (post-test). Similarly, salon customer knowledge also significantly increased from an average score of 67.76 (pre-test) to 93.16 (post-test), with a p-value $< \alpha$, which is 0.000, indicating a significant effect.

Education through games makes the material easier to accept and understand, making learning more interactive and enjoyable. These results are consistent with previous research indicating that game-based educational media effectively improve knowledge. This improvement is also associated with the relaxed atmosphere and enthusiasm generated by the game, facilitating better understanding and retention of information.

Recommendations that can be drawn from this study regarding the improvement of occupational safety and health knowledge in the workplace, both for workers and customers/service users, for further researchers are to continue research to develop and test more interactive game-based educational media for various occupational safety and health topics and to implement them in worker populations in other industrial sectors.

Overall, this study asserts that game-based educational media is no less effective than conventional educational media in improving occupational safety and health knowledge in the workplace.

REFERENCES

- Agusmidah, Yurikosari, A., Ariyanti, Wijayanti, A., Santoso, B., Rahayu, D., Maryoso, D., Voss, G. H. van, Ismono, J., Kusumawardaya, M., Adi, M., Hartini, R., Hutabarat, R. F., Santoso, S., Tjandra, S., Darma, S. A., & Hilmy, U. (2012). Bab-Bab Tentang Hukum Perburuhan Indonesia. In Pustaka Larasan.
- Audina, D. V., Budiastuti, A., & Widodo, Y. A. (2017). Faktor penyebab terjadinya dermatitis kontak akibat kerja pada pekerja salon. *Jurnal Kedokteran Diponegoro*, suppl 6, S1–S11. <https://doi.org/10.14710/dmj.v6io.18801>
- Bajuri, Z. (2014). Intervensi Penyuluhan Menggunakan Media Lembar Balik Terhadap Peningkatan Pengetahuan Bahaya K3 dan Pencegahannya pada Pekerja Las di Ciputat Kelurahan Pisangan Tahun 2014. *UIN Syarif Hidayatullah*.
- Irzal. (2016). Dasar-dasar Kesehatan dan Keselamatan Kerja. Edisi I- Jakarta.Kencana.hal 33.
- ILO. (2018). Meningkatkan Keselamatan dan Kesehatan Pekerja Muda. Jakarta: ILO.
- Haerani, A. R., & Kartini, K. (2023). Pengetahuan tentang Keselamatan Kerja dan Perilaku Kesehatan Pekerja Salon Memengaruhi Kejadian Dermatitis Kontak: Sebuah Kajian. *ULIL ALBAB: Jurnal Ilmiah Multidisiplin*, 2(9), 4562-4571.
- Monalisa, U., Subakir, S., & Listiawati, R. (2022). Faktor-Faktor Yang Berhubungan Dengan Perilaku Tidak Aman Pada Pekerja Service Pt. Agung Automall Cabang Jambi. *Jurnal Inovasi Penelitian*, 2(10), 3391-3398.
- Mulyatiningsih, E. (2023). *Metode Penelitian Dasar untuk Penulisan Tugas Akhir di Perguruan Tinggi*.
- Nabillah, D. (2022). Pengaruh Media Card Games Terhadap Pengetahuan dan Sikap Siswa Tentang Protokol Kesehatan di SD Negeri 18 Kota Bengkulu. *Poltekkes Kemenkes Bengkulu*.
- Nofrihensi, S., Iswari, M., Nurhastuti, N., Kusumastuti, G., & Safaruddin, S. (2023). Efektivitas Game Edukasi Dalam Meningkatkan Kemampuan Mengenal Bangun Datar Pada Anak Tunagrahita Ringan Kelas IV. *Jurnal Penelitian Pendidikan Khusus*, 11(2), 130-135.
- Rasyid, F. (2022). *Metodologi Penelitian Kualitatif Dan Kuantitatif Teori, Metode, dan Praktek*. IAIN Kediri Press.
- Rudyarti, E. (2017). Hubungan pengetahuan keselamatan dan kesehatan kerja dan sikap penggunaan alat pelindung diri dengan kejadian kecelakaan kerja pada pengrajin pisau batik Krengseng di Desa Bangunjiwo Kabupaten Bantul. *Journal of Industrial Hygiene and Occupational Health*, 2(1), 31–43. <https://doi.org/10.21111/jihoh.v2i1.1227>
- Syafrida Hafni Sahir. (2021). *Metodologi Penelitian*. <https://repositori.uma.ac.id/handle/123456789/16455>
- Zakiya, R. S., & Kurniasari, R. (2021). Pengaruh Media Game Educandy Terhadap Pengetahuan Hipertensi Pada Remaja di Desa Telaga Murni. *Jurnal Gizi dan Kuliner*, 2(2). <https://doi.org/10.35706/giziku.v2i2.5932>