REVIEW PAPER

Factors affecting HIV/AIDS prevention behaviors among barbers: a systematic study

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Abstract

Introduction: Barbers are one of the groups who are likely to develop acquired immune deficiency syndrome (AIDS). Using ordinary barber's tools and failing to adhere to cleanliness requirements can lead to spreading of the illness. The purpose of this study was to investigate the factors affecting human immunodeficiency virus (HIV)/AIDS prevention behaviors among barbers.

Material and methods: The current study was a systematic review. We performed a search of Persian and English articles in Science Direct, PubMed, Google Scholar, SID, and Magiran databases, published from 2000 to 2023. Out of 70 articles assessed, 24 publications were selected, which were relevant to the study objective. Key words used were "AIDS/ HIV," "Prevention," "Salon Workers," "Hairdressers," "Barbers," and "Knowledge."

Results: Based on the findings, the effective factors in AIDS prevention behaviors in barbers were classified into five categories: 1) information, knowledge, and attitude; 2) education and empowerment; 3) perceived sensitivity and intensity; 4) perceived benefits; and 5) the influence of media and people.

Conclusions: According to the outcomes of the study, it is feasible to improve HIV/AIDS preventive behaviors among barbers by raising knowledge, attitude, perceived susceptibility, perceived sensitivity, and perceived advantages toward AIDS with effective planning, which eventually will prevent the spread of HIV/AIDS.

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Key words: factors, prevention, HIV/AIDS, barbers, behaviors, systematic review.

Introduction

Acquired immune deficiency syndrome (AIDS) is a worldwide epidemic caused by the retrovirus, human immunodeficiency virus (HIV), which is one of the occupational hazards in high-risk professions. It affects all systems of the body, and makes the organs vulnerable to opportunistic infections, weight loss, and ultimately death [1]. AIDS is a disease that affects not only the physical health, but also the mental and social conditions of patients due to unfavorable attitudes in society, discrimination, and stigma, especially in developing countries [2].

Since the beginning of the epidemic, 85.6 million people have been infected with HIV, about 39 million people died of HIV in 2022, and 630,000 people died from HIV-related

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illnesses worldwide in 2022 [3]. Some countries have succeeded in curbing this epidemic, but in developing countries, the spread of this epidemic continues. HIV/AIDS is a hidden epidemic in the Middle East, where Iran is one of three countries with two-thirds of new infections; in 2018, AIDS reached a total of 11,000 new infections [4]. According to the report of the Ministry of Health, Treatment, and Medical Education, the number of HIV-infected people and the total number of registered AIDS cases since the beginning was 45,877, of which 21,975 deaths were recorded and 5,576 people were referred to healthcare centers to receive treatments. Out of all the cases of this disease, 81% were males, and 19% were females [5].

Knowledge of AIDS and its transmission modes is an essential step in HIV/AIDS prevention [6]. Barbers constitute a professional group with high-risk of HIV transmission and control [7]. Moreover, barbershops are one of the public places where attention is paid to the issues of personal hygiene, because failure to comply with health standards is leading to the spread of diseases, including various infections and HIV [8]. Many studies emphasized the importance of adhering to infection control standards, such as proper hand washing [9, 10], gloves use [11, 12], disposable razors [13], disinfection, and sterilization of all equipment used in barbershops before and after each client's services as well as proper disposal of related waste [7, 14].

It is important to address the effective factors in HIV transmission. The implementation of HIV prevention measures, such as sterilization of barbering equipment, was impeded by social and structural factors, including income insecurity, pressure, and demands from clients. These exogenous factors interacted with individual behavioral aspect, such as fatigue, delay in restocking disinfectants, to create an environmental risk for HIV transmission in barbershops [15]. Barbering, involving the use of clippers, blades, and other skin-piercing equipment, poses a risk of HIV infection and transmission, when unsterile and contaminated equipment is used [16, 17].

In a qualitative study, participants recognized the risk of HIV transmission through accidental skin cuts, which were assumed elevated in terms of particular hairstyles, styling procedures, and beard-shaving [15]. In another study, a total of 203 hair salon owners and apprentices knew about HIV/AIDS, and 79.3% of them defined it as a sexually transmitted infection. Most of them have worn gloves and aprons before hairstyling gestures, and sharp instruments were disinfected before their use. However, alcohol was the disinfectant most commonly used by majority of them [18]. According to the above-mentioned factors, it becomes significantly important to identify the factors related to the prevention of HIV/AIDS transmission in barbers, so that the necessary interventions can be executed in this area to decrease their exposure to HIV/AIDS and possible transmission. On the other hand, no systematic study was performed to summarize and draw conclusions from the research already conducted in this field. The purpose of this study was to investigate the factors affecting HIV/AIDS prevention behaviors among barbers.

Material and methods

The current study was a systematic review that addressed specific clinical issues and subjects. Data was collected through a search of scientific Persian and English databases, including Science Direct, PubMed, Google Scholar, SID, and Magiran, for articles published from 2000 to 2023. Key words used were "AIDS/HIV," "Prevention," "Salon Workers," "Hairdressers," "Barbers," and "Knowledge." By using systematic review, the evidence can be properly analyzed and evaluated [19]. The main benefit of a systematic review is that the "weight of the data" prevents the author's own opinion and prejudice from being applied [20]. Therefore, it shows the results of multiple major studies using procedures that minimize bias and errors [21].

Inclusion criteria were papers published in renowned scientific journals, written in Farsi or English and access to full-texts of these articles. There were no limitations on the admission of studies based on the design of research performed in the search for articles. Exclusion criteria were not having access to the entire text of publication, letters to editors, non-authoritative journals, and articles presented as posters at conferences.

Initial search found 12,600 items (Table 1), of which 11,032 were deleted as duplicates. Following inclusion and exclusion criteria, the number of articles was reduced to 70, and a total of 48 publications on the researched subject were

Table 1. Search strategies

Row	Databases	Articles	Searching strategies
1.	Google Scholar	8,538	Title-Abs-Key (Salon Workers OR Barbers) AND Prevention AND AIDS OR HIV (English)
2.	PubMed	712	Title-Abs-Key (Salon Workers OR Barbers OR Hairdressers) AND Prevention AND AIDS OR HIV (English)
3.	Science Direct	566	Title-Abs-Key (Salon Workers OR Hairdressers) AND (Prevention Or Knowledge) AND AIDS OR HIV (English)
4.	SID	1,224	Title-Abs-Key (Salon Workers OR Barbers) AND Prevention AND AIDS OR HIV (Persian)
5.	Magiran	1,560	Title-Abs-Key (Salon Workers OR Hairdressers) AND (Prevention Or Knowledge) AND AIDS OR HIV (Persian)

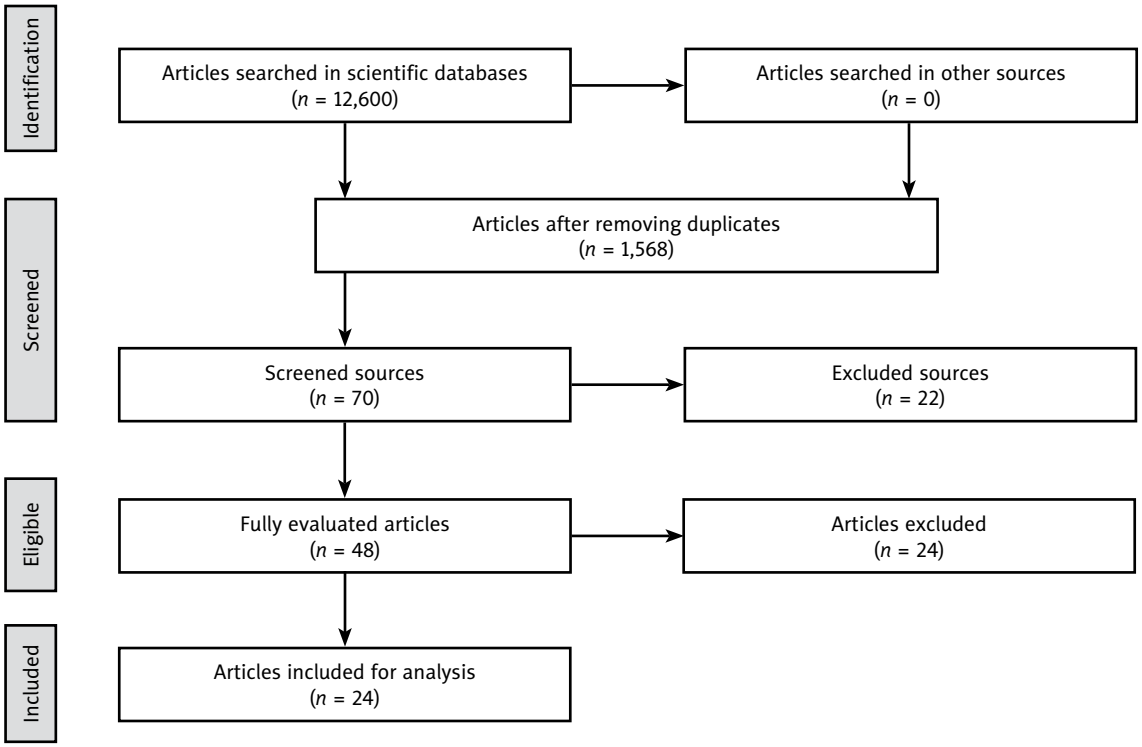

Figure 1. The process of articles selection

selected and analyzed. Three researchers with experience in investigating systematic reviews evaluated the selected articles for key words in title, abstract, introduction, methodology, and results, in addition to discussion and supporting resources to strengthen the research methodology, ensure the quality of articles, and avoid potential biases. Finally, the analysis included 24 publications (Figure 1) [4, 13, 15, 16, 18, 22-40]. All the references of the 24 articles were accessed to obtain more articles in the field.

The Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) [1] 2020 checklist was employed in this study to help systematic reviewers transparently report the purpose of a review, methodology, and results. The PRISMA 2020 is a 27-item checklist that benefits authors, editors, and peer reviewers of systematic reviews as well as other readers, including guidelines' developers, policy-makers, healthcare providers, patients, and other stakeholders [19].

Results

In the study, a total of 24 articles published from 2000 to 2023 were included for analysis. These were three studies from Nigeria, eleven from Iran, two from Pakistan, three from Ethiopia, and one each from Ghana, Turkey, India, Iraq, and Togo. The sample size for these articles ranged from 16 to 628. Nelson's [15] study had the smallest sample size of 16 cases, whereas Kerkez's [32] investigation had the biggest sample size of 628. The research's goal, location, type of study, and findings were examined individually (Table 2).

The study results were classified into five categories: 1) information, knowledge, and attitude; 2) education and empowerment; 3) perceived sensitivity and intensity; 4) perceived advantages; and 5) the effect of media and people (Table 3).

Discussion

This study was conducted to assess the beneficial factors in the prevention of HIV/AIDS among barbers by analyzing previously published research in this field. Several studies indicate that education, knowledge, and attitude are beneficial factors in the prevention of HIV/AIDS in barbers [18, 22, 39]. Hairdressers must understand the importance of transmission and prevention of HIV/AIDS, hence they need to be educated on potential factors and modes of HIV/AIDS transmission, including using disposable needles and contact with patients' liquids. It is important to understand preventative measures, such as wearing shields and avoiding contact with bodily fluids, i.e., blood or sweat. Furthermore, barbers' positive attitudes about preventing HIV/AIDS might have a significant influence; they need to inform customers that their health and safety are of concern to them, and all possible procedures to maintain safety of clients' health and prevent transmission of HIV/AIDS are followed. This positive approach could improve consumers' trust in barbers, and encourage them to adhere to hygiene and AIDS prevention recommendations.

Table 2. Characteristics of the studies included

Subject	Authors [Ref.]	Place and year of publication	Type of study	Number of sample	Factors affecting HIV/ AIDS prevention
Evaluation of knowledge, attitude, and behavior of beauty salon workers toward AIDS in Songhor	Mohammadi [4]	Kermanshah, Iran, 2023	Descriptive study	150	- Television and radio - Training programs
Knowledge, attitude, and sources of information about HIV/AIDS among barbers in Ibadan, Nigeria	Adesoro [22]	Ibadan, Nigeria, 2009	Cross-sectional	372	- Mass-media (television and radio) - Relevant information (person-to-person contact)
To assess the knowledge, attitude, and practices of barbers regarding HIV and HCV transmission in the Peshawar Region	Habibullah [13]	Peshawar, 2022	Cross-sectional	70	- Adequate knowledge
Knowledge, attitude, and performance of barbers about AIDS prevention	Mahmoudi [23]	Gorgan, Iran, 2000	Descriptive	150	- Poor knowledge - Trained in hygienic behaviors
Knowledge, attitudes, and prevention practices regarding HIV/AIDS among barbers in Ho Municipality, Ghana	Quarm [16]	Ghana, 2021	Cross-sectional	121 males	- Inadequate knowledge - Poor prevention practices - Programmed-aimed approach
Evaluation of knowledge and practice of hairdressers in women's beauty salons in Isfahan about hepatitis B, hepatitis C, and AIDS in 2010 and 2011	Ataei [24]	Isfahan, Iran, 2013	Cross-sectional	281 females	- Continuous teaching programs
Evaluation of knowledge and practice of hairdressers in men's beauty salons in Isfahan about hepatitis B, hepatitis C, and AIDS in 2010 and 2011	Ataei [25]	Iran, 2012	Cross-sectional	240 males	- Knowledge - Education level - Working history
Knowledge and practices of barbers regarding HIV transmission in Karachi: a cross-sectional study	Bawany [26]	Karachi, Pakistan, 2014	Cross-sectional	300	- Inadequate knowledge
To assess the knowledge and attitude of barbers toward HIV/ AIDS infection	Karami [27]	Zanjan, Iran, 2015	Cross-sectional	375	- Level of knowledge and education
Evaluation of the factors associated with AIDS prevention performance among hairdressers based on the theory of planned behavior	Naghibi [28]	Sari, Iran, 2021	Cross-sectional	275	- Knowledge, attitude, and performance - Behavioral intention - Subjective norms - Perceived behavioral control - Educational programs
HIV prevention perception among barbers according to the health belief model	Solhi [29]	Tehran, Iran, 2014	Cross-sectional	104 males	- Education
Evaluation of the factors associated with AIDS prevention performance among male barbers based on the health belief model in Fasa	Khani Jeihooni [30]	Fasa, Iran, 2017	Cross-sectional	220 males	- Raising knowledge - Perceived sensitivity - Perceived benefits
HIV prevention perception among barbers according to the health belief model: A case study from Marand	Solhi [31]	Marand, Iran, 2014	Cross-sectional	104 males	- Perceived benefits - Education - Perceived susceptibility - Educational interventions

Table 2. Cont.

Subject	Authors [Ref.]	Place and year of publication	Type of study	Number of sample	Factors affecting HIV/ AIDS prevention
Evaluation of AIDS and hepatitis B knowledge and job satisfaction among hairdressers and barbers in Turkey	Kerkez [32]	Turkey, 2022	Cross-sectional	628	- Performance training - Gloves and gowns wearing
Knowledge, attitudes, and risk of HIV, HBV, and HCV infections in hairdressers of Palermo City (South Italy)	Amodio [33]	Italy, 2009	Cross-sectional	105	- Knowledge - Media campaigns - Educational materials
Assessment on knowledge, attitude, and practice with regard to the transmission and prevention of HIV/ AIDS among barbers and beauty salon workers in Hossana Town, South Ethiopia	Ayano Wakjira [34]	South Ethiopia, 2017	Cross-sectional	81	- Good knowledge - Positive attitude - Usage of gloves, - Religion, income, age, and mass-media influence - Training, supportive supervision, and peer education
Potential risk of HIV transmission in barbering practice in Ethiopia: from public health and microbiological perspectives	Biadgelegn [35]	South Ethiopia, 2012	Cross-sectional	123	- Health strategies: health education, training, supervision, and monitoring
Knowledge, attitudes, and practices of hairdressing salon staff on HIV infection in Lome, Togo	Teclessou [18]	Lome, Togo, 2019	Descriptive study	203	- Good knowledge - Disinfection - Barbers' behavior - Blood exposure
Situating HIV risk in barbershops: Accounts of knowledge and practices from barbers in Nigeria	Nelson [15]	Nigeria, 2022	Qualitative data	16	- Social and structural factors - Individual-behavioral - Risk environment
Effectiveness of planned health teaching on knowledge regarding HIV/AIDS among barbers	Kalal [36]	India, 2021	Descriptive cross-sectional study	60	- Education - Health teaching - Impact of media on knowledge
HIV/AIDS knowledge of people who work in barbershops and beauty salons at Al-Nasiriya City in Iraq	Abd RK [37]	Iraq, 2020	Cross-sectional	107	- Good knowledge - Health strategies - Preventive measures - Disposal of sharp equipment - Interventions programs
Knowledge, attitudes, and practices among barbers in south-western Ethiopia	Zewudie [38]	Ethiopia, 2002	Cross-sectional	102	- Sterilization and disinfection - Knowledge - Lack of health education - Information (sterilization, transmission)
A study to determine and compare the knowledge and practice of male and female hairdressers about AIDS and ways to illness prevention	Sodeify [39]	Iran, 2007	Descriptive	55	- Transmission of infection - Knowledge and appropriate behavior - Proper training
Observations of barbers' activities in Oyo State Nigeria: Implications for HIV/AIDS transmission	Salami [40]	Nigeria, 2006	Cross-sectional	77 shops	- Commercial disinfection - Sterilization behavior - Media (TV or radio) - Electrical clipper - Training - Prevention procedures - Education and knowledge

According to the studies, education and knowledge can play a significant role in decreasing the prevalence of AIDS among barbers. Educational programs may train individuals about prevention, diagnose, and AIDS treatment [18, 28, 34]. These programs include HIV viral education and prevention, early detection, and updating of HIV information. To prevent HIV/AIDS, hairdressers need to obtain periodic education on AIDS prevention means, and correct utilization of disinfectants and hygiene products. Barbers should gain insights on how to disinfect and sterilize barbershop cutting tools appropriately as well as how to maintain standards of personal hygiene, such as washing hands with soap and water, wearing gloves, using masks and disinfectants, and managing emergencies. In addition to education and information, health support groups may supply hairdressers with items, such as AIDS prevention leaflets, posters, and informative DVDs. These resources should be written in basic, understandable English to help stylists communicate with their customers.

Susceptibility and perceived sensitivity are significant elements in preventing diseases, which have been investigated in various research studies. According to some papers, patients' perceived sensitivity and severity of disease outcomes are significantly related to their level of selfcare [41]. Furthermore, research indicates that the perceived sensitivity and intensity of preventive measures may affect the prevention of coronavirus infection [42]. According to the research, the perceived sensitivity and susceptibility affect AIDS prevention [43, 44]. In terms of susceptibility and perceived sensitivity, hairdressers believe that they are at risk of HIV/AIDS, and being HIV/AIDS-infected means to experience social, occupational, and disease difficulties. They believe these hazards will promote the adoption of AIDS-preventative behavior.

According to research findings, perceived advantages are another beneficial factor in the prevention of HIV/AIDS among barbers. Perceived benefits refer to the advantages that hairdressers would experience as a result of following HIV/AIDS preventive measures. Several studies have found that perceived advantages are important in prevention behaviors [30, 31, 42]. Following hygiene guidelines, such as using gloves, masks, and disinfection equipment, can help hairdressers prevent the danger of contracting HIV virus, which is one of the perceived benefits for them. Customers will eventually feel more confident and reassured, knowing they are protected from getting this disease, which is another advantage they perceive. This may result in more loyal customers and a favorable effect on barber's profession.

Finally, the influence of mass-media and individuals is an effective factor in decreasing HIV/AIDS among barbers, supported by numerous studies' findings [22, 34]. The main sources of information on HIV/AIDS prevention are found in mass-media, including radio, television, the Internet, and social media, through which public knowledge on dangerous behaviors, preventative strategies, and significance of HIV/AIDS testing, can be indorsed. Advertising campaigns, radio and TV shows, publications, and other media may popularize healthy behaviors and solutions to stop the HIV virus from spreading. This could encourage barbers to implement preventative measures [40]. However, anybody can educate hairdressers by giving accurate information about HIV/AIDS prevention. Practitioners of healthy habits can also act as guides for others. Consumers who use the instruments at hair salon, employ proactive strategies, and avoid hazardous behaviors, can inspire others. In general, people's and media's influence is essential for HIV/AIDS prevention. The promotion of community's health combined with public knowledge, education, healthy habits, role modeling, and social support, can significantly increase the prevention of HIV/AIDS spreading.

Table 3. Beneficial factors in HIV/AIDS prevention among barbers based on the studies analyzed

Categories	Sub-categories
1. Information, knowledge, and attitude	Person-to-person contact Programed-aimed approach Inadequate knowledge Appropriate planning Bridge cognitive gaps Sterilization and disease transmission
2. Education and empowerment	Planned health teaching Training in hygienic behaviors Educational programs Educational interventions Performance training Positive attitude Disinfection of soiled equipment Health strategies Electrical clipper Behavioral intention
3. Perceived sensitivity and intensity	Perceived susceptibility Perceived sensitivity Perceived behavioral control
4. Perceived advantages	Perceived benefits regarding HIV/AIDS Perceived benefits Customer trust and attraction
5. Effect of media and people	Mass-media (television and radio) Subjective norms Health messages in media campaigns Religion, income, and age influence Effect of media on knowledge Prevention practices Social and structural factors

Conclusions

According to the results of the investigated studies, it is possible to improve HIV/AIDS prevention behaviors among barbers using appropriate planning regarding the increase of knowledge, attitude, perceived susceptibility, perceived sensitivity, and perceived benefits toward HIV/AIDS. Thus, for this purpose, various media whose role in the education

and prevention of AIDS in barbers has been emphasized, can be employed.

One of the limitations of the present study is the lack of access to the full-texts of some articles, for which the responsible authors were contacted and the full-texts were obtained.

Disclosures

1. Institutional review board statement: None.
2. Assistance with the article: None.
3. Financial support and sponsorship: None.
4. Conflicts of interest: None.

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