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Self-Medication Information Sources and Trustworthiness: A Quantitative Assessment of Dir Lower, Khyber Pakhtunkhwa (KP), Pakistan

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Abstract: This study investigates the primary sources of information used by individuals for self-medication and evaluate their perceived trustworthiness, thereby providing insights into the influence of information sources on self-medication behavior and health decision-making. Adopting Quantitative Methodology and Cross-sectional Design, data was collected from individuals frequently engaging in self-medication for common health issues such as headaches, colds, allergies, or minor injuries. Stratified Random Sampling yielded a sample size of 366 respondents from a pool of 75,00 patients across Dir Lower seven tehsil hospitals. A structured interview schedule facilitated data collection, covering demographics, self-medication practices, information sources, trustworthiness perceptions, and health outcomes. Analysis involved SPSS for frequency and percentage as a descriptive and Chi-square Test for inferential statistics. The study shows that people prefer getting health information from both informal (family and friends) and formal (healthcare professionals and the internet) sources. Trust in these sources varies depending on how credible they seem. People are willing to self-medicate, especially for certain conditions, influenced by factors like limited healthcare access, trust in self-medication sources, and cultural beliefs. Many respondents are confident in finding and understanding health information for self-medication. This research underscores the importance of cultural and social factors in healthcare decisions, highlighting the need for tailored interventions and education programs to address local dynamics in Dir Lower, KP, Pakistan.

Keywords: Self-medication, Cross-sectional Design, Headaches, Colds, allergies and Stratified Random Sampling

1.Introduction

Self-medication, the practice of individuals diagnosing and treating their own health conditions with over-thecounter (OTC) medications and other remedies, has become increasingly prevalent worldwide and it represents a complex interplay of personal health decision-making, access to healthcare resources, and the availability of

information (Shaghaghi, Asadi, & Allahverdipour, 2014). Self-medication, while offering convenience and autonomy to individuals, also carries potential risks, including incorrect self-diagnosis, improper medication use, and adverse health outcomes (ALBashtawy, Batiha, Tawalbeh, Tubaishat, & Al-Azzam, 2015). The trustworthiness of information sources guiding self-medication choices plays a pivotal role in mitigating or exacerbating these risks (Gillani, Hussain, Imran, Chang, Yang, & Fang, 2017). This research embarks on a quantitative assessment focused on the district of Dir Lower in Khyber Pakhtunkhwa (KP), Pakistan, to investigate the critical nexus between self-medication practices, information sources, and the perceived trustworthiness of these sources. Dir Lower, a region characterized by its diverse population, presents a compelling case study to unravel the dynamics of self-medication within a complex healthcare landscape.

1.1.1 Background and Rationale

The practice of self-medication has gained prominence in Pakistan, as it has in many other countries, with individuals resorting to self-diagnosis and self-treatment for common health issues such as headaches, colds, allergies, and minor injuries (Aziz, Masood, Yousaf, Saleem, Ye, & Fang, 2018). Factors driving this phenomenon in Pakistan include limited access to healthcare facilities, the cost of medical consultations, and cultural norms that encourage self-reliance in healthcare decision-making (Aqeel, Shabbir, Basharat, Bukhari, Mobin, Shahid, & Waqar, 2014). One of the pivotal determinants influencing self-medication behavior is the choice of information sources where individuals often turn to various sources, including the internet, family, friends, and healthcare providers, to seek guidance on self-treatment (Gillani et al., 2017). The perceived trustworthiness of these sources profoundly influences the selection of remedies and the manner in which they are administered (Hussain, Malik, F., Hameed, Ahmad, & Riaz, 2010). In the context of Dir Lower, where healthcare resources and practices may differ from urban centers, understanding the prevalence of self-medication, the sources of information consulted, and the trust individuals place in these sources is of paramount importance (ALBashtawy et at., 2015). This quantitative assessment aims to provide empirical insights into the self-medication landscape within this region, shedding light on both the extent of self-medication and the factors shaping it.

1.1.2 Objective of the Study

To quantitatively assess the primary sources of information used by individuals for self-medication and evaluate their perceived trustworthiness, thereby providing insights into the influence of information sources on self-medication behavior and health decision-making.

1.1.3 Hypotheses of the Study

Hypothesis 1: Trust in formal sources for self-medication information is positively correlated with trustworthiness.

Hypothesis 2: Trust in informal sources for self-medication information is influenced by information-seeking behavior and health literacy.

Hypothesis 4: Frequency of self-medication is positively associated with trust in certain information sources.

1.1.4 Significance of the Study

This research holds substantial significance for various stakeholders, including policymakers, healthcare providers, and the general population of Dir Lower. By quantifying self-medication practices and understanding the trustworthiness attributed to information sources, it provides a foundation for informed decision-making in healthcare policy development. It also enables healthcare providers to tailor their guidance to align with the information sources most commonly utilized by their patients, ultimately enhancing patient outcomes and safety. Furthermore, the study contributes to the existing body of knowledge on self-medication by examining these practices within a distinct cultural and geographic context, providing valuable insights into the broader landscape of healthcare in Pakistan. It also underscores the importance of promoting responsible self-medication practices and enhancing the reliability of information sources for individuals in Dir Lower.

1.2 Review of Literature

The process of reviewing literature for the topic "Self-Medication Information Sources and Trustworthiness: A Quantitative Assessment of Dir Lower, Khyber Pakhtunkhwa (KP), Pakistan" involves a systematic exploration

of existing research, studies, and relevant publications. To begin, an extensive search is conducted through academic databases, scholarly journals, and reliable online sources to identify articles, papers, and reports related to self-medication practices and information sources in the specified region. This comprehensive analysis of the existing body of knowledge serves as a foundation for the research study, helping to contextualize and shape the research questions, hypotheses, and methodology to provide meaningful contributions to the field.

1.2.1 Self-Medication

The conceptual understanding of self-medication encompasses a multifaceted perspective on individuals' autonomous healthcare behaviors. At its core, self-medication refers to the practice where individuals, without the direct involvement of healthcare professionals, make decisions to treat their ailments (Shaghaghi et al., 2014). Self-medication can range from managing minor ailments, such as headaches or common colds, to more complex health conditions and it involves the assessment of symptoms, selection of appropriate treatments, and the monitoring of outcomes (Ahmad, Patel, I., Mohanta, & Balkrishnan, 2014). However, the concept also raises critical issues related to the responsible use of medications, potential risks, and the need for reliable sources of health information. (Ali, Ahmed, Sonekhi, Fayyaz, Zainulabdin, & Jindani, 2016). Understanding self-medication is essential for healthcare providers, policymakers, and individuals alike, as it informs discussions about patient empowerment, healthcare access, and the responsible utilization of healthcare resources (Akhtar, Heydon, & Norris, 2022).

1.2.2 Socio Economic Dynamics Influencing Self-medication

Socio-economic factors play a pivotal role in influencing self-medication practices, where individuals' economic status, educational background, and social circumstances significantly impact their decisions regarding self-treatment (Shaghaghi et al., 2014). Low-income or limited financial resources may hinder their ability to consult healthcare professionals or purchase prescription medications, leading to a greater reliance on non-prescription drugs or home remedies (Ahmad et al., 2014). Furthermore, individuals with higher educational attainment may be more informed about health-related matters and, therefore, more likely to make informed decisions regarding self-medication (Mushtaq, Gul, & Naz, 2017). Cultural beliefs and social norms within specific socio-economic groups can also shape attitudes toward self-medication (Gillani et al., 2017). Additionally, disparities in healthcare access, including geographic limitations and healthcare infrastructure, can intensify self-medication practices, particularly in remote or underserved areas. (Mushtaq, Gul, & Naz, 2017). Therefore, a comprehensive understanding of self-medication must consider the complex interplay of socio-economic factors, as they not only influence self-treatment behaviors but also have broader implications for healthcare equity and access (Khan, Khan, Ullah, Ullah, & Bahadar, 2023).

1.2.3 Potential Menace within Self-medication

Self-medication, while offering convenience and autonomy in managing minor health issues, carries inherent potential risks that necessitate careful consideration (Bennadi, 2013). Self-medication One of the primary concerns is the possibility of misdiagnosis or inadequate assessment of health conditions, which can lead to incorrect treatment choices (Abdullah, Khan, Shah, & Ullah, 2023). Self-medication also poses the risk of adverse drug interactions, where individuals may unknowingly combine medications that can interact negatively, potentially causing harm (Mushtaq et al., 2017). Furthermore, overuse or misuse of over-the-counter drugs can lead to side effects or the development of drug resistance, particularly in the case of antibiotics and there's also the risk of delayed or inadequate treatment for serious health conditions when individuals rely solely on self-medication and avoid seeking professional medical advice (Khan, Maheen, Alamgeer, Mahmood, Sarfraz, Ashraf, & Malik, 2014). Moreover, the accessibility of healthcare information on the internet and from various sources may result in the uptake of unreliable or misleading information, leading to inappropriate treatment decisions (Hanif, Ashar, Rabnawaz, & Yasmeen, 2016).

1.2.4 Potential Benefits of Self-Medication

Self-medication offers several potential benefits when practiced responsibly, it empowers individuals to take charge of their health and well-being, promoting self-care and independence (ALBashtawy et al., 2015). For

minor, well-understood health issues like common colds, headaches, or allergies, self-medication can provide timely relief without the need for a healthcare provider's intervention, thus saving time and resources (Naqvi, Ahmad, Qadeer, Khan, Nadir, & Alim, 2016). It can also enhance access to healthcare, particularly in remote or underserved areas where healthcare facilities may be scarce or distant and self-medication often results in quicker symptom relief, improving individuals' overall quality of life (Bennadi et al., 2013). Additionally, it can alleviate the burden on healthcare systems by reducing the demand for medical consultations for minor ailments and choices can be made based on personal preferences, such as selecting natural remedies or specific brands (Malik, Tahir, Jabbar, Ahmed, & Hussain, 2020).

1.3 Methodology

The research methodology employed for the study titled "Self-Medication Information Sources and Trustworthiness: A Quantitative Assessment of Dir Lower KP, Pakistan" follows a systematic approach to gather and analyze data, aiming to address the research question. It adopts a Cross-sectional Design, which involves data collection at a specific point in time. This design is particularly well-suited for evaluating the prevalence of self-medication practices, as well as examining information sources and perceptions of trustworthiness.

1.3.1 Theoretical Framework

In this study we used theoretical framework as a Health Information Seeking and Processing (HISP) model or theory. This framework focuses on how individuals actively seek, acquire, and use health-related information to make informed decisions about their health and healthcare. It has evolved collaboratively across various disciplines and involves scholars such as Donald O. Case, Teresa L. Thompson, Ester de Groot, Linda Neuhauser, and Susan E. Morgan, among others. The Health Information Seeking and Processing (HISP) model can be applied to self-medication regarding information sources and trustworthiness. Individuals actively seek information on health conditions, such as over-the-counter medications and remedies, with varying behaviors influenced by symptom severity and past experiences. Common sources include pharmacists, online resources, healthcare professionals, and personal networks. Trust is vital, evaluated based on factors like credibility, relevance, personal experience, and consistency. Trust in pharmacists and healthcare professionals is often driven by their expertise, while the trustworthiness of online sources varies. This research should delve into the information-seeking behaviors of individuals when they self-medicate, analyzing factors influencing their choices, such as symptom severity and past experiences. Additionally, it should assess the trustworthiness of various information sources used for self-medication and explore how this trust impacts the safety and effectiveness of self-medication practices. Ultimately, such research can inform the development of targeted interventions aimed at guiding individuals toward reliable sources, enhancing their ability to assess trustworthiness, and promoting safer and more informed self-medication decisions.

1.3.2 Conceptual Framework

Self-Medication Information Sources and Trustworthiness					
Mediating Variables	Dependent Variables				
1)Information Trustworthiness	Trust in Information Sources				
3)Information-Seeking 4)Behavior	Lead Frequency of Self-				
Health Literacy	Medication				
	Self-Medication Information Sources Mediating Variables 1)Information Trustworthiness 3)Information-Seeking 4)Behavior Health Literacy				

1.3.3 Population

According to the Pakistan Bureau of Statistics (PBS) population census data from 2023, the total population of Dir Lower district in Khyber Pakhtunkhwa (KP) was approximately 1,650,183. Please note that population figures can change over time due to factors such as births, deaths, and migration, so it's advisable to consult more recent data for the most up-to-date population estimates.

1.3.4 Respondents

The potential respondents for this study are individuals who engage in frequent self-medication practices for common health issues. These health issues typically include ailments such as headaches, colds, allergies, or minor injuries.

1.3.5 Sampling Procedure and Sample Size

When conducting research within a specific patient group known for frequent self-medication practices for common health issues like headaches, colds, allergies, or minor injuries. In this study, we opted for Stratified Random Sampling as our preferred method. Initially, we collaborated with the Khyber Pakhtunkhwa (KP) Health Departments to establish a comprehensive sample frame, which involved identifying and gathering records from seven tehsil hospitals in Dir Lower: Adenzai, Lal Qila, Blambat, Khall, Munda, Samarbagh, and Timargara. From these tehsil hospitals, we specifically extracted official patient records of individuals who frequently engaged in self-medication for common health issues. Our efforts yielded a total of 75,00 such patients across the seven tehsils. Lastly, we employed Sekaran's sample criteria to determine a final sample size of 366 individuals from the initial pool of 75,000 patients.

1.3.6 Tools for Data Collection

To quantitatively assess self-medication information sources and their trustworthiness in Dir Lower, KP, Pakistan, we've designed a structured interview schedule as our primary data collection tool. This schedule contains closed-ended questions for efficient quantitative data gathering, covering key areas such as respondents' demographics (including age, gender, education, income), self-medication practices (common health issues, frequency, and types of medications used), information sources for self-medication (internet, advice from family and friends, healthcare providers), perceived trustworthiness of these sources, and any health issues or complications resulting from self-medication. Prior to administering the schedule to the target population, a pilot test will be conducted on a small group to identify and address any issues related to wording, clarity, or comprehension, ensuring the questionnaire's effectiveness and reliability for data collection.

1.3.7 Procedure of Analysis

This study employs SPSS (Statistical Package for the Social Sciences) for data analysis, a widely recognized statistical software commonly used in the social sciences. Descriptive statistics were utilized to analyze the data in terms of frequency and percentage, while inferential statistics involved the application of the Chi-square Test.

1.4 Analysis And Discussion

Data analysis provided outlines a research study conducted in the region of Dir Lower, Khyber Pakhtunkhwa (KP), Pakistan, which focuses on the topic of "Self-Medication Information Sources and Trustworthiness." Let's break down the data and discuss its elements, including the application of data methods.

1.4.1 Table No. 01: Frequency and Percentage of Self-Medication Information Sources and Trustworthiness

The provided data in table comprises results from a survey or questionnaire focused on self-medication practices, information sources, source trustworthiness, confidence in health-related information acquisition for self-medication, and factors influencing self-medication decisions. Regarding self-medication practices, a notable proportion of respondents strongly agree that they self-medicate for common issues like headaches (55.46%), fever/cold/flu (54.37%), pain (57.38%), and gastrointestinal problems (59.02%). A similar observation was noted in the study of Arain, Shahnaz, Anwar, & Anwar, (2021), self-medication is a common practice for minor health issues that many individuals encounter in their daily lives where health conditions often include ailments like headaches, colds, allergies, and minor injuries and these relatively common and non-severe health problems, people often opt for self-medication as a convenient and accessible way to alleviate their symptoms.

Informal sources, such as family, friends, or traditional healers, are favored by a significant portion (31.42%) for self-medication information, while formal sources like healthcare professionals and websites are preferred by others (35.25%). The study of Mumtaz, Jahangeer, Mujtaba, Zafar, & Adnan, (2011), also reveal that when seeking information about self-medication, individuals typically turn to a variety of sources to guide their

decisions where these sources can be broadly categorized into two main groups: Formal sources include healthcare professionals, pharmacists, television/radio advertisements, and internet resources like reputable medical websites and informal sources encompass advice from family members, friends, and traditional healers, drawing on personal experiences and cultural knowledge where the choice between formal and informal sources often depends on factors like accessibility, trust, and the perceived reliability of the information.

Trust levels vary, with informal sources being very trustworthy for some (34.43%) but not trustworthy for others (24.86%), whereas formal sources are generally trusted, with 29.78% finding them very trustworthy. The finding of the study Yasmin, Asghar, Naeem, Najeeb, H., Nauman, Ahsan, & Khattak, (2022), also suggested that The trustworthiness of information obtained for self-medication is a critical consideration for individuals seeking to manage their health effectively. It hinges on the credibility and reliability of the information sources. Trust can vary widely depending on whether the information is sourced from formal channels like healthcare professionals, where it is often regarded as highly trustworthy, or from informal sources such as family, friends, or traditional healers, which may be viewed with varying degrees of skepticism.

Respondents display confidence in finding and comprehending health-related self-medication information, with 53.28% feeling very confident and 39.62% feeling quite confident. As similar observation was noted in the study of Arain, et al., (2021), confidence in one's ability to find and comprehend health-related information for self-medication is a pivotal factor in healthcare decision-making where this confidence reflects an individual's self-assurance in navigating the complex landscape of health information and those who rate themselves as highly confident generally feel capable of effectively searching for reliable sources, understanding medical terminology, and making informed choices about self-medication while conversely, individuals with lower confidence levels may be more hesitant and reliant on external guidance.

Influential factors include a lack of access to healthcare facilities (50.00% find it very influential), trust in selfmedication sources (48.91% find it very influential), and cultural beliefs/traditions (48.91% find them very influential). An analogical finding was noted in the study of Chaudhry, Azhar, Jamshed, Ahmed, Khan, Saeed, & Rasheed, A. (2022), the influence level of various factors on a patient's decision to practice self-medication plays a crucial role in healthcare choices, such as limited access to healthcare facilities, trust in self-medication sources, and cultural beliefs significantly shape an individual's inclination towards self-medication where patients in areas with restricted access to medical care may resort to self-medication out of necessity, whereas trust in self-medication sources, including informal advice or formal healthcare guidance, can sway their choices.

Table No. 01: Frequency and Percentage of Self-Medication Information Sources and Trustworthiness

Please specify the health condition for which you practice self-medication on a scale from 1 to 5, where:

Strongly Disagree - I would never self-medicate for minor health issue.

Disagree - I am hesitant to self-medicate for minor health issue.

Neutral - I am open to the idea of self-medicating for minor health issue.

Agree - I am likely to self-medicate for minor health issue.

Strongly Agree - I always self-medicate for minor health issue.

Strongry rigide - i arways sen medicate for minor nearth issue.									
Statement	01	02	03	04	05				
You practice self-medication when you feel	4 /	11 /	3	145 /	203 /				
Headache	1.09%	3.01%	/0.82%	39.62%	55.46%				
You practice self-medication when you feel	6 /	9 /	1 /	152 /	199 /				
Fever /Cold/Flu	1.64%	2.46%	0.27%	41.53%	54.37%				

You practice self-medication when you feel	3	10/	2	141 /	210 /			
Pain (e.g., muscle pain, joint pain)	/0.82%	2.73%	/0.55%	38.52%	57.38%			
You practice self-medication when you feel	7 /	8 /	4 /	131	216			
Gastrointestinal issues (e.g., diarrhea)	1.91%	2.19%	1.09%	/35.79%	/59.02%			
Please indicate the sources from which you usually get information about self-medication by selecting								
a rating from 1 to 5 for each source, where:				•	Ŭ			
Strongly Prefer Formal Sources								
Prefer Formal Sources								
Neutral (No Preference)								
Prefer Informal Sources								
Strongly Prefer Informal Sources								
Statement	01	02	03	04	05			
Informal Sources e.g. Family, friends or	86 /	52 /	4 /	109/	115			
Traditional healers	23.50%	14.21%	1.09%	29.78%	/31.42%			
Formal Sources e.g. Television/radio,	98/	129/	7	47	91/			
Healthcare professionals, Pharmacists or	26.78%	35.25%	/1.91%	/12.84%	24.86%			
Internet/websites								
Please rate the trustworthiness of the information	on you rec	eive for se	lf-medicat	ion advice	on a scale			
from 1 to 5, where:								
Not Trustworthy								
Somewhat Not Trustworthy								
Neutral								
Somewhat Trustworthy								
Very Trustworthy								
Very Trustworthy								
Very Trustworthy Statement	01	02	03	04	05			
Very Trustworthy Statement Informal Sources e.g. Family, friends or	01 91 /	02 47	03 2	04 101/	05 126/			
Very Trustworthy Statement Informal Sources e.g. Family, friends or Traditional healers	01 91 / 24.86%	02 47 /12.84%	03 2 /0.55%	04 101/ 27.60%	05 126/ 34.43%			
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Very Trustworthy Statement Informal Sources e.g. Family, friends or Traditional healers Formal Sources e.g. Television/radio, Healthcare professionals, Pharmacists or Internet/websites Please rate your confidence in your ability to fin medication on a scale from 1 to 5, where: Not Confident Slightly Confident Moderately Confident Quite Confident Very Confident Statement Self-Confident Over Self-Medication Information	01 91 / 24.86% 109 / 29.78% and and und 01 9 /2.46% he followin	02 47 /12.84% 121 /33.06% lerstand hea lerstand hea 02 10 /2.73% ng factors o	03 2 /0.55% 3 /0.82% Ilth-related 03 4 /1.09% n a patient	04 101/ 27.60% 53 / 14.48% 1 information 04 145 / 39.62% 's decision to be a constructed of the second se	05 126/ 34.43% 85 / 23.22% n for self- 05 195 / 53.28% to practice			
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Very Trustworthy Statement Informal Sources e.g. Family, friends or Traditional healers Formal Sources e.g. Television/radio, Healthcare professionals, Pharmacists or Internet/websites Please rate your confidence in your ability to fin medication on a scale from 1 to 5, where: Not Confident Slightly Confident Moderately Confident Quite Confident Very Confident Statement Self-Confident Please rate the importance or influence level of t self-medication on a scale from 1 to 5, where: Not Influential	01 91 / 24.86% 109 / 29.78% and and und 01 9 /2.46% he followin	02 47 /12.84% 121 /33.06% lerstand hea lerstand hea 02 10 /2.73% ng factors o	03 2 /0.55% 3 /0.82% lth-related 03 4 /1.09% n a patient	04 101/ 27.60% 53 / 14.48% 1 information 04 145 / 39.62% 2's decision for the second	05 126/ 34.43% 85 / 23.22% n for self- 05 195 / 53.28% to practice			
Very Trustworthy Statement Informal Sources e.g. Family, friends or Traditional healers Formal Sources e.g. Television/radio, Healthcare professionals, Pharmacists or Internet/websites Please rate your confidence in your ability to fin medication on a scale from 1 to 5, where: Not Confident Slightly Confident Moderately Confident Quite Confident Very Confident Statement Self-Confident Over Self-Medication Information Please rate the importance or influence level of t self-medication on a scale from 1 to 5, where: Not Influential Slightly Influential Medicated of the statement	01 91 / 24.86% 109 / 29.78% and and und 01 9 /2.46% he followin	02 47 /12.84% 121 /33.06% lerstand hea 02 10 /2.73% ng factors o	03 2 /0.55% 3 /0.82% lth-related 03 4 /1.09% n a patient	04 101/ 27.60% 53 / 14.48% 1 information 04 145 / 39.62% 's decision to	05 126/ 34.43% 85 / 23.22% n for self- 05 195 / 53.28% to practice			
Very Trustworthy Statement Informal Sources e.g. Family, friends or Traditional healers Formal Sources e.g. Television/radio, Healthcare professionals, Pharmacists or Internet/websites Please rate your confidence in your ability to fin medication on a scale from 1 to 5, where: Not Confident Slightly Confident Moderately Confident Quite Confident Very Confident Statement Self-Confident Over Self-Medication Information Please rate the importance or influence level of t self-medication on a scale from 1 to 5, where: Not Influential Slightly Influential Moderately Influential Over Very Confident	01 91 / 24.86% 109 / 29.78% and and und 01 9 /2.46% he followin	02 47 /12.84% 121 /33.06% lerstand hea lerstand hea 02 10 /2.73% ng factors o	03 2 /0.55% 3 /0.82% Ilth-related 03 4 /1.09% n a patient	04 101/ 27.60% 53 / 14.48% 1 information 04 145 / 39.62% C's decision to	05 126/ 34.43% 85 / 23.22% n for self- 05 195 / 53.28% to practice			
Very Trustworthy Statement Informal Sources e.g. Family, friends or Traditional healers Formal Sources e.g. Television/radio, Healthcare professionals, Pharmacists or Internet/websites Please rate your confidence in your ability to fin medication on a scale from 1 to 5, where: Not Confident Slightly Confident Moderately Confident Very Confident Statement Self-Confident Over Self-Medication Information Please rate the importance or influence level of t self-medication on a scale from 1 to 5, where: Not Influential Slightly Influential Quite Influential Very Lefbertial	01 91 / 24.86% 109 / 29.78% and and und 01 9 /2.46% he followin	02 47 /12.84% 121 /33.06% lerstand hea lerstand hea 10 /2.73% ng factors o	03 2 /0.55% 3 /0.82% ilth-related 03 4 /1.09% n a patient	04 101/ 27.60% 53 / 14.48% 1 information 04 145 / 39.62% 5's decision for the second	05 126/ 34.43% 85 / 23.22% n for self- 05 195 / 53.28% to practice			

Statement	01	02	03	04	05
Lack of access to healthcare facilities	9	15	8	150	183
	/2.46%.	/4.10%	/2.19%	/40.98%	/50.00%
Trust in self-medication sources	11 /	14	6 /	157 /	179
	3.01%	/3.83%	1.64%	42.90%	48.91%
Cultural beliefs/traditions	11	14	6	157	179
	/3.01%	/3.83%	/1.64%.	/42.90%	/48.91%

1.4.2 Table No. 02: Individuals' Attitudes Concerning Various Health Conditions and Their Trust Information Sources for Self-Medication

This table presents data on individuals' attitudes and behaviors regarding self-medication for various health conditions, along with their trust in different sources of self-medication information. Notably, there is a highly significant relationship (P=.000) between attitudes toward self-medication and specific health issues such as Headache, Fever/Cold/Flu, Pain (e.g., muscle or joint pain), and Gastrointestinal issues (e.g., diarrhea). The chi-squared values (x2) vary, with values of 65.475 for Headache, 79.409 for Fever/Cold/Flu, 41.701 for Pain, and 52.707 for Gastrointestinal issues. Trust in information sources for self-medication exhibits substantial variation as well. Informal sources like family, friends, and traditional healers are generally considered untrustworthy, showing high significance (P=.000) and a chi-squared value of 49.531. In contrast, trust in formal sources, including healthcare professionals and internet sources, demonstrates a lower level of significance (P=.154) with a chi-squared value of 21.682. Statistical analyses reveal significant associations between specific health conditions, attitudes toward self-medication tendencies and their trust in information sources, emphasizing variations based on both the specific health condition and the information source.

 Table No. 02: Individuals' Attitudes Concerning Various Health Conditions and Their Trust Information

 Sources for Self-Medication

Pleas	Please specify the health condition for which you practice self-medication										
S. No	Statemen t	Attitudes	Strongly disagree	Disagree	Neutral	Strongly agree	Agree	Totals	Sta tist ic		
1	You practice	Strongly disagreed	11 (28.6%)	21 (52.4%)	5 (19.0%)	0 (0.0%)	0 (0.0%)	37 (100.0%)	x2= 65.		
	self- medicatio	Disagree	53 (21.5%)	91 (36.7%)	61 (24.7%)	34 (13.9%)	7 (3.2%)	246 (100.0%)	475 P= 00		
	you feel Headache	Neutral	4 (29.4%)	4 (29.4%)	2 (17.6%)	0 (0.0%)	2 (23.4%)	12 (100.0)	0		
		Agree	6 (11.7%)	18 (31.7%)	14 (25.0%)	16 (30.0)	1(1.7%)	55 (100.0)			
		Strongly agree	0 (0.0%)	1 (7.1%)	3 (42.9%)	3 (28.6)	2 (21.4%)	9 (100.0%)			
2	You practice	Strongly disagreed	13 (28.8%)	13 (26.9%)	14 (28.8%)	3 (7.7%)	3 (7.7%)	47 (100.0)	x2= 79.		
	self- medicatio	Disagree	1 (2.1%)	11 (27.1%)	15 (33.3%)	12 (27.1%)	4 (10.4%)	43 (100.0%)	409 P=		

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	n whon	Noutrol	3(6.0%)	12	16	20(362)	1(3.40%)	53	00
	II when	Ineutiai	5 (0.9%)	(24.10/)	(20, 20')	20 (30.2)	1 (3.4%)	(100.00)	.00
	you leel	•	1.6	(24.1%)	(29.3%)	10 (5 70()	$2 \langle 0, 10 \rangle$	(100.0%)	0
	Fever	Agree	46	8/	41	10 (5.7%)	3 (2.1%)		
	/Cold/Flu	~ 1	(24.5%)	(45.8%)	(21.9%)		1 (2 0 0 ())	00.0%)	-
		Strongly	10	9 (29.4%)	3 (11.8%)	6 (23.5%)	1 (2.9%)	29	
		agree	(32.4%)					(100.0%)	
3	You	Strongly	20	46	41	34	6 (4.6%)	147	x2=
	practice	disagreed	(13.8%)	(30.9%)	(27.6%)	(23.0%)		(100.0%)	41.
	self-								701
	medicatio	Disagree	38	58	31	15	8 (5.8%)	150	P=
	n when		(25.2%)	(38.1%)	(20.6%)	(10.3%)		(100.0%)	.00
	you feel								0
	Pain (e.g.,	Neutral	5 (20.0%)	15	4 (23.3%)	1 (3.3%)	0 (0.0%)	25	
	muscle			(53.3%)				(100.0%)	
	pain, joint	Agree	9 (32,3%)	14	2 (16 1%)	1 (3.2%)	0(0.0%)	26	-
	pain)	rigice) (32.370)	(48.4%)	2 (10.170)	1 (3.270)	0 (0.070)	(100.0%)	
				(+0.+70)				(100.070)	
		Strongly	1 (12.5%)	1 (12.5%)	7 (50.0%)	2 (25.0%)	0 (0.0%)	11	
		agree						(100.0%)	
4	You	Strongly	28	35	19	4 (6.6%)	0 (0.0%)	86	x2=
	practice	disagreed	(31.9%)	(39.6%)	(22.0%)			(100.0%)	52.
	self-	Disagree	41	82	52	28	14 (6 8%)	217	707
	medicatio	21048100	(18.9%)	(37.4%)	(23.9%)	(13.1%)	1 (0.070)	(100.0%)	P=
	n when		(10.570)	(37.170)	(23.570)	(13.170)		(100.070)	.00
	you feel	Neutral	4 (10.2%)	11	11	17	1 (2.0%)	44	0
	Gastroint			(24.5%)	(24.5%)	(38.8%)		(100.0%)	
	estinal			× ,	× ,	× ,		· · · ·	
	issues	Agree	1 (22.2%)	1 (11.1%)	1 (55.6%)	1 (11.1%)	0 (0.0%)	4	
	(e.g.,	C	, , , , , , , , , , , , , , , , , , ,				, , , , , , , , , , , , , , , , , , ,	(100.0%)	
	diarrhea							× ,	
		Strongly	0 (0.0%)	5 (53.8%)	2 (30.8%)	1 (15.4%)	0 (0.0%)	8	
		agree						(100.0%)	
Pleas	e rate the tru	stworthiness o	f the informa	tion you rece	eive from the	following so	urces for self	-medication	
5	Statomon	Attitudos	Not	Not	Not	Not	Not		
5	statemen	Attitudes	Trustwort	Trustwort	Trustwort	Trustwort	Trustwort	Totala	
	L		hu	hustwort	hustwort	hustwort	hustwort	Totals	
	Informal	Nat	пу	пу	пу	пу	пу	21	2
	fillormal	INOL Transformers (1)	1 (7 70()	1	8	7	4	21	XZ
	Sources	I rustworth	1(7.7%)	(7.7%	(34.6%	(30.8%	(19.2%)	(100.0%	=
	e.g.	У		`			` ´ ´)	49.
	Family,	Somewhat	17				10	254	531
	Triends or	Not	47	93	62	42	10	(100.0%	P=
	Tradition	Trustworth	(18.5%	((36.3%	(24.3%	(26.6%)	(4.2%)	.00
	al healers	У						,	0

		1							
		Neutral	6 (19.4%)	14 (41.7%)	10 (33.3%)	1 (5.6%)	0 (0.0%)	31 (100.0%)	
		Somewhat Trustworth y	15 (31.4%)	23 (47.1%)	6 (13.7%)	2 (7.8%)	0 (0.0%)	46 (100.0%)	
		Very Trustworth y	3 (41.7%	2 (33.3%	2 (25.0%	0 (0.0%)	0.(0.0%)	7 (100.0%)	
6	Formal Sources e.g.	Strongly disagreed	8 (34.6%)	7 (34.6%)	4 (19.2%)	2 (11.5%)	0 (0.0%)	21 (100.0%)	x2= 21. 682
	Televisio n/radio, Healthcar	Disagree	48 (17.8%)	94 (34.5%)	65 (24.0%)	48 (17.8%)	15 (5.8%)	270 (100.0%)	P= .15 4
	e professio nals,	Neutral	12 (23.2%)	24 (44.6%)	13 (26.8%)	2 (5.4%)	0 (0.0%)	49 (100.0%)	
	Pharmaci sts or Internet/w	Agree	2 (25.0%)	2 (25.0%)	2 (25.0%)	2 (25.0%	0 (0.0%)	8 (100.0%)	
	ebsites	Strongly agree	4 (26.3%)	5 (42.1%)	5 (31.6%)	0 (0.0%)	0 (0.0%)	14 (100.0%)	

1.4.3 Table No. 03: Individuals' Confidence for Health-Related Information and Influential Factors for Self-Medication

This chi-square table presents two sets of data. Firstly, it investigates individuals' confidence in their ability to locate and comprehend health-related information for self-medication. The results reveal a significant majority expressing lower levels of confidence, with only a small percentage indicating high confidence (P= .000). This finding signifies a substantial relationship between individuals' confidence levels and their attitudes toward self-medication, as indicated by a chi-squared value of 46.102. Secondly, it explores the impact of various factors on patients' decisions to engage in self-medication. Notably, the lack of access to healthcare facilities emerged as a significant influencing factor, with a substantial portion finding it quite or very influential (P= .001) and yielding a chi-squared value of 39.653. Similarly, trust in self-medication sources was considered moderately to quite influential by a significant portion of respondents (P= .001), with a chi-squared value of 41.144. Additionally, cultural beliefs and traditions played a substantial role, with many respondents considering them moderately to quite influential (P= .000) and resulting in a chi-squared value of 24.671. Overall, these findings underscore the importance of these factors in shaping attitudes toward self-medication and emphasize the interrelation between individuals' perceptions and the influence of these factors.

 Table No. 03: Individuals' Confidence for Health-Related Information and Influential Factors for Self-Medication

Please rate your confidence in your ability to find and understand health-related information for self-medication									
S.	Statemen	Attitude	Not	Not	Not	Not	Not	Total	

No	t		Confident	Confident	Confident	Confident	Confident		
1	Self-	Not	1	2	1	1	0 (0 00()	5	4
	Confident	Confident	(20.0%)	(40.0%)	(30.0%)	(10.0%)	0 (0.0%)	(100.0%)	6
	Over	Slightly	32	20	8	1 (2,00/)	1 (2.00/)	46 100 00/)	1.
	Self-	Confident	(33.3%)	(43.1%)	(19.6%)	1 (2.0%)	1 (2.0%)	40 100.0%)	1
	Medicatio	Moderately	17	15	8	5	5	50	0
	n	Confident	(32.7%)	(29.1%)	(16.4%)	(10.9%)	(10.9%)	(100.0%)	2
	Informati	Quite	32	90	61	48	8 (3 7%)	239	Р
	on	Confident	(13.5%)	(37.3%)	(25.4%)	(20.1%)	8 (3.770)	(100.0%)	=
		Very							
		Confident	7	5	106	0 (0.0%)	0 (0.0%)	19 (100.0%)	0
			(33.3%)	(25.0%)	(41.7%)	0 (0.070)	0 (0.070)	19 (1001070)	0
DI	1 •							·	10
Pleas	se rate the ir	nportance or	influence lev	vel of the fo	llowing facto	ors on a pat	ient's decisio	on to practice s	elf-
medi	cation:	A 44:4m da	Nat	Nat	Not	Not	Nat	1	<u> </u>
S. No	statemen	Attitude	INOL Influential	INOL Influential	INOL	INOL Influential	INOL Influential	Total	
1	Look of	Not	Influential	12			Influential	22	2
1	Lack Of	Inol	1 (5.3%)	15	(21.104)	(28.0%)	2 (7.9%)	(100.0%)	0
	healthcare	Slightly	16	(30.870)	(21.170)	(20.970)	11	(100.0%)	- 7
	facilities	Influential	(21.2%)	(32.7%)	(26.3%)	52 (14.7%)	(5.1%)	(100.0%)	. 5
	racintics	Moderately	(21.270)	(32.770)	(20.370)	(14.770)	(3.170)	(100.070)	6
		Influential	(50.0%)	(41.7%)	1 (8.3%)	0 (0.0%)	0 (0.0%)	(100.0%)	3
		Quite	17	38	19	11		86	P
		Influential	(19.8%)	(42.9%)	(22.0%)	(13.2%)	1 (2.2%)	(100.0%)	=
		Verv	(1).070)	(12.970)	(22:070)	(10.270)		(100.070)	1.
		Influential		3	5	1		9	0
			0 (0.0%)	(35.7%)	(50.0%)	(14.3%)	0 (0.0%)	(100.0%)	0
				, , ,	, ,	· · · ·		. , ,	1
2	Trust in	Not	0 (0 00()	5	2	4	0(0,00())	11	4
	self-	Influential	0 (0.0%)	(43.8%)	(18.8%)	(37.5%)	0(0.0%)	(100.0%)	1
	medicatio	Slightly	3	5	14	11	0. (0. 00())	33	1.
	n sources	Influential	(10.5%)	(15.8%)	(39.5%)	(34.2%)	0 (0.0%)	(100.0%)	1
		Moderately	1	3	1	1		× /	- 4
		Influential	(16.7%)	(50.0%)	(16.7%)	(16.7%)	0 (0.0%)	6 (100.0%)	4
		Ouite	61	108	61	33	15	178	P
		Influential	(21.9%)	(38.5%)	(21.9%)	(12.0%)	(5.7%)	(100.0%)	=
		Verv	(21.970)	(30.370)	(21.970)	(12.070)	(5.170)	(100.070)	· .
		Influential	10	13	11	2(7.3%)	0(0.0%)	37	0
		Innaontiai	(26.8%)	(34.1%)	(31.7%)	2(1.370)	0 (0.070)	(100.0%)	1
3	Culturel	Not	1	2	7	2		12	1
3	baliafa/tra	Inol Influential	1 (11.80/)	$\frac{2}{(17.60)}$	(52.0%)	$\frac{2}{(17.60)}$	0 (0.0%)	12 (100.00()	4
	ditions	Slightler	(11.0%)	(17.0%)	(32.9%)	(17.0%)		(100.0%)	
	unons	Slightly	7	10	2	0(0.004)	0(0.00%)	19	6
		mnuentiai	(33.3%)	(54.2%)	(12.5%)	0(0.0%)	0(0.0%)	(100.0%)	7
L									'

Moderately Influential	1 (6.7%)	4 (40.0%)	5 (53.3%)	0 (0.0%)	0 (0.0%)	10 (100.0%)	1 P =
Quite	61	101	60	52	15	290].
Influential	(21.4%)	(34.6%)	(20.7%)	(18.0%)	(5.4%)	(100.0%)	0
Strongly	3	13	11	1(3.0%)	0(0.0%)	27	0
agree	(12.1%)	(45.5%)	(39.4%)	1 (3.0%)	0(0.0%)	(100.0%)	0

1.5 Study Findings

Research findings on self-medication practices and attitudes reveal that many respondents are inclined to selfmedicate for various health conditions, especially for issues like Headache and Gastrointestinal problems, where a majority expressed a willingness to self-medicate. Respondents showed varying preferences for information sources, with some leaning towards informal sources like friends and family, while others favored formal sources such as healthcare professionals and the internet. Trust in these sources varied among respondents. Many respondents reported a high level of confidence in their ability to find and understand health-related information for self-medication. Factors influencing self-medication decisions, such as limited access to healthcare facilities, trust in self-medication sources, and cultural beliefs, were perceived as moderately to highly influential. These findings shed light on self-medication behaviors and their drivers among the surveyed individuals.

1.5.1 Conclusion

The study titled "Self-Medication Information Sources and Trustworthiness: A Quantitative Assessment of Dir Lower, Khyber Pakhtunkhwa (KP), Pakistan," provides valuable insights into self-medication practices and information sources in this specific region. It reveals a diversity of information sources, including informal sources like family and friends and formal sources such as healthcare professionals and the internet, influencing self-medication decisions. Notably, there is a preference for informal sources, underscoring the role of traditional knowledge and cultural beliefs. Trust in both informal and formal sources varies, highlighting the reliance on perceived credibility. Respondents express readiness for self-medication, particularly for conditions like headaches and gastrointestinal issues. Factors such as limited access to healthcare facilities, trust in selfmedication sources, and cultural beliefs significantly shape self-medication choices. Moreover, a substantial proportion of respondents are confident in their ability to access and comprehend health-related information for self-medication. In last, this research offers a comprehensive understanding of self-medication practices in Dir Lower, KP, Pakistan, emphasizing the influence of cultural and social factors and the need for tailored healthcare interventions and education programs to address local dynamics.

1.5.2 Recommendation

Based on the research in Dir Lower, Khyber Pakhtunkhwa (KP), Pakistan, recommendations include promoting healthcare literacy through educational campaigns, strengthening healthcare infrastructure to improve access to professionals, implementing quality assurance for online health sources, and providing cultural sensitivity training for healthcare professionals to enhance trust in formal healthcare sources. These actions aim to empower the local population with better information, reduce the reliance on self-medication, and foster safer healthcare practices while respecting cultural context.

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