

Effectiveness of COVID Counseling Provided By Health Care Providers in the Primary Healthcare COVID-19 Assessment Centers in Dubai

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ABSTRACT

Background: The COVID-19 pandemic has highlighted the critical role of effective communication in healthcare, especially in primary care settings. This study focuses on evaluating the effectiveness of COVID-19 counseling provided by healthcare providers in primary healthcare centers in Dubai.

Methods: A cross-sectional, prospective observational study was conducted over a period of three months, encompassing a diverse sample of 100 patients who had experienced COVID-19. Data were collected through telephone interviews, online surveys and on-site questionnaires, focusing on patients' awareness of COVID-19 protocols and their satisfaction with the counseling received.

Results: The findings revealed a high level of patient awareness regarding testing frequency, symptoms and self-isolation protocols. A significant proportion of patients [81%] reported satisfaction with the counseling received. However, gaps were identified in communication regarding the proper disposal of masks and gloves and disinfection practices at home. An association was found between vaccination status and the type of information received.

Conclusion: The study demonstrates the effectiveness of COVID-19 counseling in Dubai's primary healthcare centers, underscoring the importance of comprehensive communication strategies in healthcare settings.

Keywords

COVID-19, Healthcare, Primary care physicians,

Introduction

The outbreak of the novel coronavirus COVID-19, declared a public health emergency of international concern by the World Health Organization [WHO] on January 30, 2020, rapidly escalated into a global pandemic [1,2]. This unprecedented health crisis has posed significant challenges worldwide, particularly in the field of primary healthcare [3]. Primary care physicians (PCPs) and nurses, serving as frontline responders, are tasked with managing the surge of suspected COVID-19 cases, a responsibility that extends beyond clinical treatment to include the effective communication of critical health information [4,5].

In Dubai the response of health authorities to this pandemic, especially in primary healthcare COVID-19 assessment centers, has been both inspiring and complex. The novel nature of COVID-19 has necessitated an adaptive approach in healthcare communication, especially in the absence of a pre-established national or international framework for pandemic communication [6,7]. This situation underscores the importance of exploring the methods and effectiveness of health communication in these challenging times. Effective communication between healthcare providers and patients is crucial for managing public health crises [8-10]. It not only facilitates accurate information dissemination but also plays a vital role in shaping public perception and behavior towards health advisories. In the context of a pandemic, where misinformation can lead to increased fear, distrust and resistance the role of healthcare providers in conveying clear, concise and accurate information becomes even more critical [11,12].

This study aims to assess the effectiveness of COVID-19 counseling provided by healthcare providers in the primary healthcare COVID-19 assessment centers in Dubai. It seeks to understand the impact of different communication methods on patient perception and response thereby informing the development of a standardized communication tool for primary care settings. Such a tool is anticipated to enhance the therapeutic relationship between healthcare providers and patients, ultimately contributing to more effective pandemic response initiatives.

By focusing on a specific yet critical aspect of pandemic management, this research aims to provide insights that could be beneficial for healthcare systems globally, especially in improving communication strategies in the face of health emergencies.

Methods

Study Design

This cross-sectional, **prospective** observational study evaluates the effectiveness of COVID-19 counseling provided by healthcare providers in primary healthcare COVID-19 assessment centers in Dubai. The observation period covers three months, starting from 1st July 2021 to 1st September 2021.

Participants

The study includes 100 patients, approximating 10% of suspected COVID-19 patients attending primary healthcare centers (PHCs) in the Dubai Health Authority during a two-month period. The study involves adults aged 18 to 60 years diagnosed with COVID-19 and receiving outpatient care. It excludes patients with severe COVID-19 symptoms requiring hospital admission.

Data Collection

Participants are approached through telephone interviews, online surveys and on-site questionnaires. The data collection instrument is a questionnaire focusing on the COVID-19 care communication or counseling received and patients' perceptions of it. This questionnaire, having undergone internal validation, covers the content and clarity of information provided the modes of communication like telephone, face-to-face, leaflets and online information sheets and patients' emotional and cognitive responses to the communication, including fear, distrust, resistance and awareness.

No personal or identifying information is collected from participants. The collected data are stored securely, with access restricted to the research team only.

Data Analysis

The analysis of the collected data aims to fulfill the study objectives. It involves a content analysis to assess the type and relevance of information communicated, a perceptual analysis to evaluate patients' views on different communication methods and a response analysis to understand patients' emotional and behavioral responses to the counseling.

Statistical methods quantify the effectiveness of communication and identify correlations between communication methods and patient responses. The analysis also includes a thematic approach to understand the nuances of patient perceptions and experiences.

Ethical Considerations

The study protocol receives approval from the relevant ethical review board. Informed consent is obtained from all participants, ensuring adherence to the principles of confidentiality and privacy.

Results

The study conducted in the Primary Health Care centers of the Dubai Health Authority provides insightful findings regarding the effectiveness of COVID-19 counseling. The results are detailed in terms of demographic characteristics, COVID-19 related characteristics, responses to healthcare counseling and the association between COVID-19 vaccination and various responses.

The demographic analysis [Table 1] reveals a diverse age distribution among the respondents. The largest group is those aged 30-39 years, constituting 39% of the total, followed by the 40-49 years age group at 29%. The gender distribution is nearly equal, with males representing 51% of the respondents as in figure 1. A significant majority, 80%, are non-local, indicating a

considerable presence of individuals from outside the local area. As indicated in Table 2, all participants in the study have experienced a COVID-19 infection. Among them, 60% have received the COVID-19 vaccine, while the remaining 40% have not. A notable 77% of respondents are aware of the testing frequency and 93% are informed about common COVID-19 symptoms in Table 3. Instructions on symptom management at home are conveyed to 84% of the respondents and 77% are informed about red flag symptoms requiring immediate medical attention. Additionally, 89% are given instructions on self-isolation. However, only 53% receive information on the proper disposal of used face masks and gloves and an equal percentage are informed about the disinfection of their home and surroundings as given in table 3. The comfort level with the counseling received is high, with 81% of respondents expressing satisfaction.

Table 4 presents the results of a binary logistic regression analysis exploring the relationship between COVID-19 vaccination and responses related to infection control measures, counseling and testing. Key findings include a positive association between being vaccinated and being informed about red flag symptoms [Exp[B] = 2.299] and self-isolation details [Exp[B] = 1.557]. Conversely, a negative association is observed between being vaccinated and being informed about the duration of quarantine [Exp [B] = 0.382] and comfort with the counseling received [Exp[B] = 0.628] as in Table 4.

Figure 1: Distribution according to demographic characteristics.

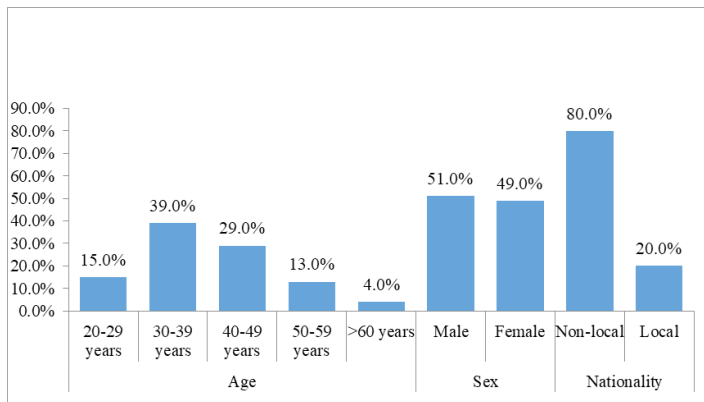


Table 1: Distribution according to demographic characteristics.

| Characteristics | Frequency (%) | |
|-----------------|---------------|------------|
| Age | 20-29 years | 15 (15%) |
| | 30-39 years | 39 (39.0%) |
| | 40-49 years | 29 (29.0%) |
| | 50-59 years | 13 (13.0%) |
| | >60 years | 4 (4.0%) |
| Sex | Male | 51 (51.0%) |
| | Female | 49 (49.0%) |
| Nationality | Non-local | 80 (80.0%) |
| | Local | 20 (20.0%) |

Table 2: Distribution according to COVID-19 infection and Vaccination.

| Variable | | Frequency | Percent |
|----------------------|-----|-----------|---------|
| Covid-19 infection | Yes | 100 | 100.0% |
| | No | 0 | 0.0% |
| Covid-19 vaccination | Yes | 60 | 60.0% |
| | No | 40 | 40.0% |

Table 3: Responses of Respondents.

| Question | Yes | | No | |
|--|-----|-------|----|-----|
| | n | % | n | % |
| Covid-19 infection related: (Covid19 Testing Quarantine and isolation: Symptom management: Investigation results) | | | | |
| Are you aware how often the test has to be done and when others have to do it? | 77 | 77.0% | 23 | 23% |
| You were told about common Covid symptoms like cough, colds, fever, diarrhea, body pains | 93 | 93.0% | 7 | 07% |
| You were told how to manage the symptoms like cough, fever and shortness of breath at home | 84 | 84.0% | 16 | 16% |
| You were told about the red flag symptoms like shortness of breath, dizziness, high grade fever needing medical help | 77 | 77.0% | 23 | 23% |
| You were informed the details of how to self-isolate | 89 | 89.0% | 11 | 11% |
| You were told how long you have to quarantine | 91 | 91.0% | 9 | 09% |
| Investigation results were explained in detail | 82 | 82.0% | 18 | 18% |
| You were asked to inform your contacts to test | 75 | 75.0% | 25 | 25% |
| Follow up appointment was explained | 67 | 67.0% | 33 | 33% |
| Hand hygiene and proper use of face mask was explained. | 82 | 82.0% | 18 | 18% |
| Infection control measures | | | | |
| Social distancing of 2m was explained. | 85 | 85.0% | 15 | 15% |
| Proper disposal of used face mask and gloves explained. | 53 | 53.0% | 47 | 47% |
| Disinfection of home and surroundings were explained. | 53 | 53.0% | 47 | 47% |
| You were comfortable to the counselling you received | 81 | 81.0% | 19 | 19% |
| Patient Reactions to counselling | | | | |
| You need more support in managing symptoms | 51 | 51.0% | 49 | 49% |
| You need information on red flag symptoms | 56 | 56.0% | 44 | 44% |
| You trust the information given to you by your healthcare provider | 96 | 96.0% | 4 | 04% |
| You are confused on how to handle the COVID infection | 22 | 22.0% | 78 | 78% |

Discussion

The results of our study in the primary healthcare centers of Dubai provide crucial insights into the effectiveness of COVID-19 counseling during a critical phase of the pandemic. When these findings are juxtaposed with recent global research, a comprehensive picture of pandemic-era healthcare communication emerges.

Our study's high levels of patient awareness and satisfaction align with the findings from a study on teleconsultations in primary care by Alborno et al. [13]. That study found that telephone and video

Table 4: Binary logistic regression Showing association between Covid- vaccination and responses related to Infection control measures, Patient Reactions to counselling and Covid19 Testing Quarantine and isolation.

| | B | S.E. | Exp(B) | 95% C.I. for EXP(B) | |
|--|--------|-------|--------|---------------------|--------|
| | | | | Lower | Upper |
| Are you aware of details like venue, appointments about Covid testing | 0.101 | 0.932 | 1.107 | 0.178 | 6.873 |
| Are you aware how often the test has to be done and when others have to do it? | 0.735 | 0.649 | 2.085 | 0.584 | 7.442 |
| You were told about common covid symptoms like cough, colds, fever, diarrhea, body pains | 0.298 | 1.034 | 1.348 | 0.177 | 10.232 |
| You were told how to manage the symptoms like cough, fever and shortness of breath at home | -0.713 | 0.760 | 0.490 | 0.110 | 2.173 |
| You were told about the red flag symptoms like shortness of breath, dizziness, high grade fever needing medical help | 0.832 | 0.623 | 2.299 | 0.678 | 7.794 |
| You were informed the details of how to self-isolate | 0.443 | 0.848 | 1.557 | 0.295 | 8.208 |
| You were told how long you have to quarantine | -0.962 | 0.878 | 0.382 | 0.068 | 2.136 |
| Investigation results were explained in detail | 0.538 | 0.717 | 1.713 | 0.420 | 6.987 |
| You were asked to inform your contacts to test | -0.376 | 0.572 | 0.686 | 0.224 | 2.106 |
| Follow up appointment was explained | 0.380 | 0.524 | 1.463 | 0.523 | 4.088 |
| Hand hygiene and proper use of face mask was explained. | 0.865 | 0.717 | 2.376 | 0.583 | 9.686 |
| Social distancing of 2m was explained. | -1.215 | 0.711 | 0.297 | 0.074 | 1.195 |
| Proper disposal of used face mask and gloves explained. | -0.119 | 0.595 | 0.888 | 0.277 | 2.848 |
| Disinfection of home and surroundings were explained. | 0.130 | 0.561 | 1.138 | 0.379 | 3.419 |
| You were comfortable to the counselling you received | -0.465 | 0.650 | 0.628 | 0.176 | 2.248 |
| You need more support in managing symptoms | -0.109 | 0.496 | 0.897 | 0.339 | 2.373 |
| You need information on red flag symptoms | 0.319 | 0.504 | 1.376 | 0.512 | 3.697 |
| You trust the information given to you by your healthcare provider | -0.354 | 1.205 | 0.702 | 0.066 | 7.442 |
| You are confused on how to handle the COVID infection | 0.460 | 0.643 | 1.584 | 0.449 | 5.586 |
| Constant | -0.232 | 0.797 | 0.793 | | |

Table 5: Preferred mode of communication.

| Gender | Age groups | No. of participants (N=100) | Preferred mode of communication (Like hart scale 1 least preferred and 5 most preferred) | | | |
|---------|------------|-----------------------------|--|----------------|--------------|-------------------|
| | | | Onsite | Telephone call | Tele consult | WhatsApp messages |
| Males | 20-40yrs | 17 | 3 | 4 | 4 | 5 |
| | 40-60yrs | 16 | 4 | 5 | 2 | 3 |
| | >60yrs | 17 | 5 | 3 | 2 | 3 |
| Females | 20-40yrs | 18 | 4 | 3 | 4 | 5 |
| | 40-60yrs | 16 | 3 | 5 | 3 | 4 |
| | >60yrs | 16 | 5 | 3 | 2 | 3 |

consultations were as effective as face-to-face visits in primary care, which also aligns with study by Pogorzelska et al. [14]. The high patient satisfaction and effectiveness of these remote consultations parallel the comfort level with counseling [81%] observed in our study.

Despite overall effectiveness in certain areas of COVID-19 communication, our study reveals significant deficiencies. One notable area is the limited dissemination of information regarding the proper disposal of face masks and gloves, and home disinfection, where only 53% of respondents reported receiving adequate information. This gap is critical, considering the importance of these measures in controlling the spread of the virus.

In contrast, the areas addressed more efficiently in our study include the communication of common COVID-19 symptoms and testing frequency, where high awareness levels [93% and 77%, respectively] were noted. This success could be attributed to the structured and repetitive nature of such information, which is easier to standardize and disseminate across diverse populations.

The impact of the pandemic on communication, especially non-verbal cues as identified in a study focusing on nurses in critical and emergency care settings in Poland [15], offers a contrasting perspective to our findings. While our study showed high levels of effective communication in counseling the Poland study highlights the deterioration of non-verbal communication due to the use of Personal Protective Equipment and initial fears of infection. This aspect underlines the multifaceted challenges healthcare providers face in maintaining effective communication, stressing the need for comprehensive training that encompasses both verbal and non-verbal aspects.

Our study's emphasis on effective verbal communication and the high satisfaction rates mirror global trends in healthcare during the pandemic [16]. However the noted deficiencies in areas such as information dissemination about the disposal of face masks and gloves indicate a need for more detailed and holistic communication strategies. Regarding areas of dissatisfaction reported by clients, it is evident that while the overall satisfaction with the counseling received was high [81%], there were notable concerns. Key areas of dissatisfaction included the lack of detailed

information on symptom management at home and understanding of red flag symptoms, with only 51% and 56% satisfaction, respectively. This indicates a disconnect between the information provided and the specific needs or expectations of the clients, highlighting the importance of personalized and patient-centered communication strategies in healthcare. There's a clear need for continuous evolution in communication strategies, especially in multicultural and dynamic settings like Dubai.

Analysis of Preferred Communication Methods

In analyzing the preferred modes of communication among patients in Dubai's primary healthcare centers, distinct preferences emerged across different age and gender groups, as given in table 5, which aligns with other studies [17,18]. These findings provide valuable insights for developing a patient-centric communication tool that could enhance the effectiveness of healthcare counseling, especially during challenging times like the COVID-19 pandemic.

Younger Males and Females [20-40 years]

For the younger demographic, particularly those between 20 and 40 years there is a clear trend towards digital communication channels. Males in this group show a strong preference for WhatsApp messages, rating it the highest on the Likert scale. Similarly, females in this age group also prefer WhatsApp messages, indicating a comfort level with digital and asynchronous communication forms. This preference is complemented by a high regard for tele consults, suggesting an openness to remote healthcare interactions. This trend aligns with global shifts towards telehealth and digital communication in healthcare, especially among younger populations who are generally more tech-savvy.

Middle-Aged Groups [40-60 years]

The middle-aged population, both males and females, demonstrates a preference for more traditional communication methods. Males in this group rate telephone calls highest, closely followed by onsite communication. Similarly, females in this age bracket show a strong preference for telephone calls. This indicates a comfort level with direct, synchronous forms of communication, where immediate feedback or interaction is possible. This preference might be attributed to their familiarity with traditional healthcare interactions and a possible lower propensity to adapt to newer digital communication methods.

Older Age Groups [>60 years]

For individuals above 60 years, onsite communication is paramount. This preference is particularly strong among both males and females in this age group, who rate it the highest. This trend underscores the importance of face-to-face interactions in building trust and understanding, especially for older patients who might rely more on personal interactions for reassurance and clarity. Telephone calls also hold moderate importance, suggesting that while direct contact is preferred there is still room for remote communication provided it is personal and direct, like a phone call.

Implications for Communication Tool Development

These findings suggest a need for a multi-modal communication

strategy in healthcare, particularly in a diverse and dynamic environment like Dubai. For younger patients, leveraging digital platforms like WhatsApp and teleconsultation services would enhance engagement and information dissemination. In contrast, for the middle-aged and older demographics, a focus on traditional methods like telephone calls and onsite meetings would be more effective.

The development of a preferred communication tool must therefore be adaptive, catering to the specific preferences of different patient groups. This approach not only aligns with the global trends in healthcare communication but also ensures that the diverse needs and comfort levels of patients are adequately met, enhancing the overall effectiveness of healthcare counseling.

In summary, this comparative analysis of communication preferences across different demographics provides a roadmap for developing a comprehensive and inclusive communication tool, tailored to meet the varied needs of patients in a multicultural setting like Dubai's primary healthcare system.

Limitations

This study, while insightful, has certain limitations. Firstly, its scope is confined to primary healthcare centers in Dubai, which may limit the generalizability of the findings to other regions or healthcare settings. Secondly, the study predominantly relies on self-reported data which can be subject to biases such as recall bias or the respondents' subjective interpretation of their experiences. Lastly, the focus on verbal communication aspects means that the study may not fully capture the complexities of non-verbal communication, a crucial component in patient-provider interactions, especially in a multicultural context.

Conclusion

The study conducted in Dubai's primary healthcare centers reveals significant insights into the effectiveness of COVID-19 counseling. The high levels of patient awareness and satisfaction with the counseling received suggest that the healthcare providers were largely successful in their communication efforts during this challenging period. Notably, the study underscores the importance of clear and effective communication strategies in managing public health crises, particularly in diverse and dynamic environments like Dubai. The findings contribute valuable perspectives to the ongoing global discourse on healthcare communication during pandemics, emphasizing the role of healthcare providers in disseminating crucial health information effectively.

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