ASSESSMENT OF KNOWLEDGE BELIEVES AND MYTHS REGARDING THE USE OF MASK IN COVID-19 OUTBREAK IN KARACHI PAKISTAN

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Objective: To assess the general perspective of population their believes and myths regarding the pandemic outbreak and use of mask as precautionary measures.

Methods: A Cross-sectional observational study conducted from January-June 2020, among the general population of Karachi. Total 470 participant age range of 18-60 years were included in the study. Data was analyzed by SPSS version 21.0, for descriptive statistics. Correlation between variables was assess by Kruskal Wallis Test, spearman rank correlation was established to assess the significant correlation between Knowledge, myths and practices.

Result: Out of 470 respondents, 74.31% were male and 25.69% of female. More than half of respondents aged between 51 to 70 years i.e. 53.92%. While 21.76% respondents were categorized in illiterate category. The mean rank score for knowledge, myths and practices were 217.95±2.1, myths score was 236.07±2.1, 241.12±2.1 respectively. The spearman rank correlation was established between knowledge myths and practices, a significant correlation was established by Knowledge-myths (r= 0.0176, p= 0.015), knowledge-practices (r= 0.0174, p= 0.001) however myths-practices (r= 0.0170, p< 0.001). Believes and myths related to the mask was concerned i.e. 56.1 were using N-95 masks, 89% respondents reused the masks, 59.1% used the mask between 2 to 5 times. Wearing mask is not a precautionary measure was mainly found as a myth in respondents i.e. 78.7%. 67.2% respondents had myths about unnecessary use of mask. The study highlighted the non-optimal behavior and practice with regards to the use of preventive measure including the use of mask in the pandemic outbreak.

INTRODUCTION

COVID-19 was first reported in Wuhan, China, in December 2019⁰. On March 11, 2020, COVID-19 was declared as pandemic by World health organization (WHO) World Health², and by March 17, 2020, there were more than 200,000 confirmed cases and over 8000 reported deaths from COVID-19 worldwide³⁴. Coronavirus (COVID-19) is an infectious disease that has become common pandemic worldwide recently in 2019 in a very short time. The infection has taken the 80% of countries of world in short time, created hardships and challenges⁵. COVID-19 has been decreed as deadly infection and speeded like wildfire in different nations. The coronaviruses are the group of related viruses which leads to infections/diseases in birds and mammals. The group can cause the respiratory tracts infections in humans and can be lethal illness and sometimes fetal. The mild illnesses include the symptoms like common cough and cold, predominantly like rhinoviruses, whereas the lethal infections can cause the MERS, SARS and COVID-19⁶. The assessment of
knowledge, and believes regarding the most recent pandemic is important to find, since the findings can be informative for public in this short time span, the response of people can vary from person to person. The COVID-19 epidemic has affected the population around the globe, and had strong impact on the behavior and practices of general populations. The major concern of general population is stay safe during the epidemic breakout, yet half of them misunderstood and became victim of myths and misleading thoughts. The epidemic has greatly influenced the understanding and news of media, hence the misperceptions during the epidemic was observed most commonly. In the past reported studies, the general populations believe and perceptions has been reportedly affected by the pandemics, either influenza, SARS. The pandemic outbreaks has always been a condition that effects the daily life of general population hence proved to be a frightening condition. The assessment of populations’ knowledge and perception is not an easy task in the quick prevailing outbreaks of virus. The objective of study was to assess the myths and believes regarding the use of mask during pandemic outbreaks.

MATERIALS AND METHODS

A cross-sectional observational study was conducted for the period of 6 months starting from January- June 2020 among the general population of Karachi regarding the believes and myths of recent pandemic outbreak and use of mask as preventive measure. A total 470 questionnaires were filled from participants willing to participate in the study. Data was collected through convenient sampling technique on a self-structured questionnaire after obtaining consent from participants willing to participate in the study. Participants with age range of 18-60 years were included in the study. Respondents were requested to complete the questionnaire, and confidentiality of data was assured. Questionnaire was constructed based on required variables and validated before collection of data. Questionnaire was divided into 3 parts, Part-A included the demographic details of participants, Part-B to assess the knowledge and perception however part-C to assess the myths and practices of participants related to the masks. Data was analyzed by SPSS version 22.0, for descriptive statistics (Frequencies, mean, median standard deviation), the correlations between demographic and myths was assess by applying Kruskal Wallis Test. Spearman rank correlation was established at 95% confidence interval to assess the significant correlation between Knowledge, myths and practices of respondents.

RESULTS AND DISCUSSION

Results

Out of total 470 respondents 74.3% (n=349) were males, and 25.6% (n=121) were females, 31.2% (n=146) were single and 68.8% (n=324) were married. Data was collected randomly and 13.1% (n=61) respondents were 18-30 years old, 32.9% (n=155) were 31-50 years old, 53.9% (n=254) were 51-70 years old. To evaluate the respondent’s knowledge regarding the pandemic education level was assessed as shown in table 1. To assess the knowledge of participants questionnaire was constructed with different statements to which the correct knowledge was depicted by 56.7% (n=266), whereas 16% (n=75) did not know the correct answer. 54.1% (n=254) was given in response to mode of transmission for COVID-19, 39.4% (n=185) responded incorrectly whereas 6.5% (n=30) did not know. The prevention of infection and knowledge was responded correctly by 51.6% (n=242), responded incorrectly by 18.7% (n=88), whereas 29.7% (n=139) did not know about it. The statement of “Wearing Face mask can prevent the chances of infections” was correctly responded by 45.9% (n=215), incorrectly by 17.2% (n=81) however 16% (n=75) did not know the correct answer.

The 41.7% (n=191) responded correctly to the purpose of metal strip in surgical mask by 41.7% (n=191), incorrectly by 29.3% (n=137), comparison of cloth mask and surgical mask was responded correctly by 30.8% (n=144), incorrectly by 45.8% (n=215), whereas 23.4% (n=109), as shown in table 2.

To assess the believes and myths, believes regarding the use of mask was assess in the survey, the basic question was recommended mask by general populations, N-95 was
suggested by 56.1% (n= 263), surgical mask was recommended by 34.2% (n= 161) whereas cloth mask was suggested by 34.2% (n= 161).

89% (n= 418) respondents were wearing mask, whereas 11.3% (n= 53) respondents stated they repeats the use of mask 1-2 times, 59.1% (n= 277) 2-5 times, whereas 29.6% (n= 139). 67.2% (n= 316) accepted the use of mask as myth and unnecessary, whereas 32.8% (n= 154) disagreed with the statement. 86.7% (n= 407) respondents agreed that only older patients should wear the mask/gloves, as shown in the table 3.

The practices of respondents were assessed regarding the use of mask, 27.2% (n= 127) were wearing mask correctly, 12.8% (n= 60) were wearing mask with wrong side. 20.8% (n= 98) did not wear mask with the correct way. During the interview and data collection 14.2% (n= 67) were observed for touching their mask, 12.3% (n= 58) were not feeling comfortable with masks. The practices of respondents with mask is represented in table 4 and figure 1.

**Table 1: Demographic details of participants.**

| Individualities         | n (%)                  | K-Score Mean Rank ± 2.1 | p-value | M-Score Mean Rank ± 2.1 | p-value | P-score Mean Rank ± 2.1 | p-value | p-value of <0.05 was considered as significant; K-Wallis H test, K-Score= average score of knowledge, M-score= Average score for myths, P-Score=average score of practices. |
|-------------------------|------------------------|-------------------------|---------|-------------------------|---------|-------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Gender                  |                        |                         |         |                         |         |                         |         |                                                                                                                                                                                                    |
| Male                    | 349 (74.31%)           | 245.11                  | 0.33    | 234.81                  | 0.021   | 214.11                  | 0.280   |                                                                                                                                                                                                    |
| Female                  | 121 (25.69%)           | 216.91                  |         | 255.23                  |          | 265.23                  |         |                                                                                                                                                                                                    |
| Marital Status          |                        |                         |         |                         |         |                         |         |                                                                                                                                                                                                    |
| Single                  | 146 (31.2%)            | 234.34                  | 0.00    | 233.78                  | 0.001   | 233.81                  | 0.161   |                                                                                                                                                                                                    |
| Married                 | 324 (68.8%)            | 216.34                  |         | 261.56                  |          | 265.45                  |         |                                                                                                                                                                                                    |
| Age                     |                        |                         |         |                         |         |                         |         |                                                                                                                                                                                                    |
| 18-30 years             | 61 (13.13%)            | 245.78                  | 0.214   | 217.66                  | 0.217   | 214.67                  | 0.421   |                                                                                                                                                                                                    |
| 31-50 years             | 155 (32.94%)           | 231.87                  |         | 194.03                  |          | 294.43                  |         |                                                                                                                                                                                                    |
| 51- 70years             | 254 (53.92%)           | 278.67                  |         | 236.12                  |          | 211.34                  |         |                                                                                                                                                                                                    |
| Literacy                |                        |                         |         |                         |         |                         |         |                                                                                                                                                                                                    |
| Illiterate              | 10 (21.76%)            | 182.34                  | 0.024   | 278.33                  | 0.081   | 231.56                  | 0.001   |                                                                                                                                                                                                    |
| Matriculation           | 169 (35.9%)            | 267.22                  |         | 213.56                  |          | 189.33                  |         |                                                                                                                                                                                                    |
| Intermediate            | 140 (29.8%)            | 234.56                  |         | 234.45                  |          | 294.43                  |         |                                                                                                                                                                                                    |
| University              | 59 (12.54%)            | 276.23                  |         | 237.34                  |          | 266.12                  |         |                                                                                                                                                                                                    |
Table 2: Knowledge and perception of respondents.

| Knowledge and perception of respondents | Correct n (%) | Incorrect n (%) | Don’t know n (%) |
|----------------------------------------|---------------|----------------|-----------------|
| Most susceptible age group to COVID-19 outbreak | 266 (56.7%)* | 128 (27.1%) | 75 (16%) |
| Mode of transmission for COVID-19 infection | 254 (54.1%)** | 185 (39.4%)* | 30 (6.5%)** |
| The infection can be Prevented by precautions | 242 (51.6%) | 88 (18.7%) | 139 (29.7%) |
| Wearing Face mask can prevent the chances of infections | 215 (45.9%) | 179 (38.1%)* | 75 (16%)* |
| Personal hygiene/Hands washing is important factor in prevention | 246 (52.5%)* | 81 (17.2%)* | 142 (30.3%) |
| What is purpose of metal strip on surgical mask | 191 (41.7%) | 137 (29.3%)* | 136 (29%)** |
| Cloth mask is as effective as surgical/other | 144 (30.8%) | 215 (45.8%) | 109 (23.4%) |

*p value= 0.001, **p= <0.05.

Table 3: Believes and myths related to mask.

| Variables to assess the Believes of participants | n (%) | p-values |
|-----------------------------------------------|-------|----------|
| Which mask is recommended (according to respondents) | N-95 263 (56.1%) | 0.00 |
| | Surgical mask 161 (34.2) |
| | Cloth mask 46 (9.7%) |
| Do you reuse the mask | Yes 418 (89%) | 0.028 |
| | No 51 (11%) |
| How often you reuse the mask | 1-2 times 53 (11.3%) | 0.045 |
| | 2-5 times 277 (59.1%) |
| | 6-10 times 139 (29.6%) |
| Wearing mask is preventing me to get infected | Yes 101 (21.3%) | 0.001 |
| | No 369 (78.7%) |
| Use of mask is unnecessary/It’s a myth | Yes 316 (67.2%) | 0.022 |
| | No 154 (32.8%) |
| Mask has nothing to do with infection/wearing mask doesn’t matter | Yes 305 (64.9%) | 0.298 |
| | No 165 (35.1%) |
| Older patients should be advice for mask/gloves | Yes 407 (86.7%) | 0.067 |
| | No 63 (13.3%) |

Table 4: Practices of respondents regarding the mask.

| Practices of respondents with respect to Mask | n (%) |
|---------------------------------------------|-------|
| Wearing mask correctly | 127 (27.2%)** |
| Wearing mask with facing wrong side on | 60 (12.8%) |
| Not covering Nose, Mouth/Chin | 98 (20.8%)* |
| Not fixed properly | 21 (4.4%) |
| Removed mask while talking | 39 (8.3%) |
| Touching/setting mask | 67 (14.2%)* |
| Not feeling comfortable while wearing | 58 (12.3%) |

*p value <0.005, **<0.001.
Correlation between knowledge, myths and the practices of respondents.

| Variables         | Rho  | p-values |
|-------------------|------|----------|
| Knowledge + Myths | 0.0176 | 0.015    |
| Knowledge + Practices | 0.0174 | 0.001    |
| Myths + Practices | 0.0170 | <0.001   |

**Discussion**

The pandemic serious out break happened in the end of year 2019. To which the preventive measures were addressed by WHO to avoid uncontrolled infection outbreak\(^\text{10}\). However the general population had different reviews on it to assess the knowledge, believes and practices of population. Data was collected from general population, out of 470 respondent’s majority 74.3% were males, however 31.2% were female, due to the situation\(^\text{11,12}\). Data was collected randomly and without the gender and age boundaries, 13.1% respondents were 18-30 years old, since the questionnaires were distributed to the 18 years and above, 32.9% were 31-50 years old in a similar study, mode of transmission for COVID-19 was 39.4% (n= 185) responded incorrectly whereas 6.5% (n= 30) did not know\(^\text{13}\). The prevention of infection and knowledge was responded correctly by 51.6% (n= 242), responded incorrectly by 18.7% (n= 88), whereas 29.7% (n= 139) did not know about it. The use of mask is an important preventive barrier to reduce the risk of transmission of microorganism\(^\text{14}\). 56.1% suggested the correct mask, had enough knowledge, 67.2% considered the use of mask as myth\(^\text{15}\), and 64.9% did not believe in use of mask as preventive measure. The correlation was assessed in knowledge myths and their practices in use of mask\(^\text{16}\), highest value was obtained for the knowledge and false practices in use of mask\(^\text{17,18}\), since the pandemic was taken as myth and wearing mask was not considered important
Conclusion

The current outbreak of Covid-19 has given rise to development of various other risk factors, importantly the myths and beliefs regarding preventive measures had potentially affected the general population. The preventive measure has a strong influence on the pandemic situation, since the myths about curative and preventive measures are making the community over-complacent which resultantly leads to worsen the disease transmission. The uncertainty and insufficient knowledge of infection have cultural influence on the society can give rise to the potential risks. Considering the COVID-19 pandemic outbreak status, all possible and prompt steps should be taken and people should be guided to follow the precautionary measures. The appropriate authorities are directed to demystify the false believes and myths in due time.

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تقييم المعتقدات المعرفية والأساطير المتعلقة باستخدام الكمامات في كراشي باكستان COVID-19

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الهدف: تقييم المنظور العام للسكان ومعتقداتهم وأساطيرهم فيما يتعلق بتقشية الواجهة واستخدام الكمامة

الطرق: دراسة رصدية معقولة أجريت في الفترة من يناير إلى يونيو ۲۰۲۰ بين عامة سكان كراشي.

تم تضمين ۴۷۰ مشاركًا تتراوح أعمارهم بين ۲۰-۶۰ عامًا في الدراسة. تم تحليل البيانات بواسطة الإصدار ۲۱.۰ من SPSS لكشف الارتباط بين المتغيرات من خلال اختبار Kruskal Wallis وتم إنشاء ارتباط رتبة سبيرمان لتقرييم العلاقة المهمة بين المعرفة والأساطير والممارسات.

النتيجة: من بين ۴۷۰ مستجيب ۷۴.۳٪ ذكور و۲۵.۶۹٪ إناث. أكثر من نصف المستجيبين تتراوح أعمارهم بين ۵۱ إلى ۷۰ سنة ۵۳.۹٪. بينما صنف ۲۱.۷٪ من أفراد العينة في فئة الأمهين. كان متوسط درجات المعرفة والأساطير والممارسات ۲۱۷.۹۵ ± ۲.۱ ۲۱۷.۹۵ ± ۲.۱ على التوالي. تم إنشاء ارتباط رتبة سبيرمان بين المعرفة والأساطير والممارسات.

وقد تم إنشاء علاقة ارتباط كبرى بين أساطير – المعرفة (r=۰.۰۱۷۶، p=۰.۰۱۵) والممارسات – المعرفة (r=۰.۰۱۷۴، p=۰.۰۰۱) ومع ممارسات - الأساطير (r=۰.۰۱۷۰، p=۰.۰۰۱). وقد وجد أن المعتقدات وأساطير المتعلقة بالقناع كانت مقلقة، أي أن ۵۶.۹٪ كانوا يستخدمون أقنعة نوع-N و أعاد ۵۶.۹٪ من المشاركين استخدام الأقنعة، واستخدم ۵۹.۱٪ القناع بين ۲ إلى ۵ مرات، تم العثور على ارتداء القناع ليس تدبيرًا احترازيًا بشكل أساسي كخرافة لدى المستجيبين أي ۷۴.۴٪ و ۶۷.۲٪ لديهم خرافات حول الاستخدام غير الضروري للقناع. سلطت الدراسة الضوء على السلوك غير الأمثل والممارسة فيما يتعلق باستخدام التدابير الوقائية بما في ذلك استخدام القناع في نقش الواجهة.