|  |  |  |
| --- | --- | --- |
| **Sex - % (n)** | | |
| Female | 59.52% (n=322/541) |
| Male | 40.48% (n=219/541) |
| **Citizenship - % (n)** | | |
| Emirati | 16.27% (n=88/541) |
| Non-Arab | 19.78% (n=107/541) |
| Other Arab | 63.96% (n=346/541) |
| **Occupation - % (n)** | | |
| Physician | 69.87% (n=378/541) |
| Pharmacist | 10.72% (n=58/541) |
| Dentist | 9.98% (n=54/541) |
| Nurse | 6.65% (n=36/541) |
| Other HCP | 2.77% (n=15/541) |
| **Health Authority - % (n)** | | |
| DHA | 31.98% (n=173/541) |
| DOH/HAAD/SEHA | 23.66% (n=128/541) |
| EHS | 44.36% (n=240/541) |
| **Workplace - % (n)** | | |
| Government hospital | 61.74% (n=334/541) |
| Private clinic/hospital | 23.48% (n=127/541) |
| Primary healthcare | 9.8% (n=53/541) |
| Other | 4.99% (n=27/541) |
| **Total Years of Practice - % (n)** | | |
| Entry level | 46.03% (n=249/541) |
| Mid-level | 26.8% (n=145/541) |
| Senior level | 27.17% (n=147/541) |
| **Number of patients seen in a week - % (n)** | | |
| 1 to 19 | 27.54% (n=149/541) |
| 20 to 49 | 39.56% (n=214/541) |
| 50 and above | 32.9% (n=178/541) |
| **Have you received the COVID-19 vaccine? - % (n)** | | |
| No | 2.4% (n=13/541) |
| Yes, 1 dose/2 doses | 34.94% (n=189/541) |
| Yes, 3 doses | 37.71% (n=204/541) |
| Yes, 4 doses or more | 24.95% (n=135/541) |
| **Have you received the influenza vaccine last year?- % (n)** | | |
| Yes | 47.87% (n=259/541) |
| No | 52.13% (n=282/541) |

Table 1. Demographics and baseline characteristics of participating healthcare professionals; HCP: Healthcare professional; DHA: Dubai Health Authority; EHS: Emirates Health Services; DOH/HAAD/SEHA: Department of Health.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **To what extent are you CONFIDENT about your knowledge of the following:** | | | | | | | | | | | | | |
|  | **Very unconfident** | | **Somewhat unconfident** | | | | | **Somewhat confident** | | | **Very confident** | | |
| *Vaccine usage and efficacy.* | 4.62% (n=25/541) | | 11.09% (n=60/541) | | | | | 48.8% (n=264/541) | | | 35.49% (n=192/541) | | |
| *Vaccine safety.* | 3.33% (n=18/541) | | 12.57% (n=68/541) | | | | | 48.43% (n=262/541) | | | 35.67% (n=193/541) | | |
| *Role of adjuvants.* | 7.95% (n=43/541) | | 25.32% (n=137/541) | | | | | 47.13% (n=255/541) | | | 19.59% (n=106/541) | | |
| **How much you AGREE with the following statements regarding pediatric vaccination:** | | | | | | | | | | | | | |
|  | | | | | **Strongly disagree** | | **Disagree** | | | **Agree** | | | **Strongly agree** |
| *Vaccines are an important part of preventive care in my practice.* | | | | | 5.18% (n=28/541) | | 6.47% (n=35/541) | | | 34.94% (n=189/541) | | | 53.42% (n=289/541) |
| *Giving a strong recommendation for a vaccination impacts my patients' acceptance.* | | | | | 3.88% (n=21/541) | | 5.18% (n=28/541) | | | 52.31% (n=283/541) | | | 38.63% (n=209/541) |
| *I prefer to wait for broad community experience before recommending new vaccines.* | | | | | 3.14% (n=17/541) | | 11.09% (n=60/541) | | | 60.26% (n=326/541) | | | 25.51% (n=138/541) |
| *I am responsible for educating parents on vaccines and the diseases they prevent.* | | | | | 4.25% (n=23/541) | | 9.24% (n=50/541) | | | 46.03% (n=249/541) | | | 40.48% (n=219/541) |
| *Vaccines recommended by the ministry of health are very useful.* | | | | | 2.03% (n=11/541) | | 3.14% (n=17/541) | | | 50.83% (n=275/541) | | | 43.99% (n=238/541) |
| *There is often a lack of time for advising about vaccines.* | | | | | 2.77% (n=15/541) | | 28.47% (n=154/541) | | | 52.50% (n=284/541) | | | 16.27% (n=88/541) |
| **Based on your knowledge, what is the likelihood of the following vaccine-associated complications:** | | | | | | | | | | | | | |
|  | | **Very unlikely** | | **Unlikely** | | **I don't know** | | | **Likely** | | | **Very likely** | |
| *Influenza Vaccine and Guillain-Barré syndrome* | | 29.76% (n=161/541) | | 33.09% (n=179/541) | | 20.52% (n=111/541) | | | 12.94% (n=70/541) | | | 3.7% (n=20/541) | |
| *Hepatitis B Vaccine and Guillain-Barré syndrome* | | 32.9% (n=178/541) | | 32.35% (n=175/541) | | 21.44% (n=116/541) | | | 10.91% (n=59/541) | | | 2.4% (n=13/541) | |
| *Hepatitis B Vaccine and Multiple Sclerosis* | | 33.64% (n=182/541) | | 33.46% (n=181/541) | | 20.52% (n=111/541) | | | 9.8% (n=53/541) | | | 2.59% (n=14/541) | |
| *Aluminum Adjuvants and Alzheimer Disease* | | 17.74% (n=96/541) | | 25.51% (n=138/541) | | 38.82% (n=210/541) | | | 14.42% (n=78/541) | | | 3.51% (n=19/541) | |
| *Vaccines with Adjuvants and Long-Term Complications* | | 19.96% (n=108/541) | | 27.91% (n=151/541) | | 31.05% (n=168/541) | | | 18.3% (n=99/541) | | | 2.77% (n=15/541) | |
| *Measles Vaccine and Autism Disorder* | | 48.8% (n=264/541) | | 24.21% (n=131/541) | | 14.05% (n=76/541) | | | 10.17% (n=55/541) | | | 2.77% (n=15/541) | |

Table 2. HCPs general vaccine knowledge and attitudes.

|  |  |  |  |
| --- | --- | --- | --- |
| **What are the five most important factors to you personally when it comes to recommending a vaccine? % (n)** | | **What is your main source of information about vaccines recommendation and their safety? % (n)** | |
| I do not directly deal with pediatric vaccines in my practice | 47.5% (n=257/541) | Medical experience | 58.23% (n=315/541) |
| Vaccine safety | 47.87% (n=259/541) | International guidelines | 56.56% (n=306/541) |
| Vaccine effectiveness | 45.84% (n=248/541) | Local guidelines | 44.73% (n=242/541) |
| Possibility to eradicate disease with vaccination | 45.47% (n=246/541) | Journals and medical websites | 36.23% (n=196/541) |
| Severity/lethality of the prevented disease | 41.40% (n=224/541) | Colleagues experience and advice | 34.94% (n=189/541) |
| Incidence of disease | 40.48% (n=219/541) | Vaccine manufacturers | 13.31% (n=72/541) |
| Inclusion of vaccine in the official immunization schedule | 28.84% (n=156/541) | Experience of family and friends | 12.94% (n=70/541) |
| Individual health-risk profile of the child | 24.95% (n=135/541) | Social media | 11.83% (n=64/541) |
| Personal experience with the disease | 13.12% (n=71/541) | Other | 1.66% (n=9/541) |
| Vaccine cost | 11.46% (n=62/541) | I am not keen on information about vaccinations | 7.58% (n=41/541) |
| Other | 1.48% (n=8/541) |
| **How have YOUR attitudes to vaccination changed during the COVID-19 pandemic? % (n)** | | **How have your PATIENTS' attitudes to vaccination changed during the COVID-19 pandemic? % (n)** | |
| More negative | 11.09% (n=60/541) | More negative | 30.5% (n=165/541) |
| Neutral | 51.39% (n=278/541) | Neutral | 46.58% (n=252/541) |
| More positive | 37.52% (n=203/541) | More positive | 22.92% (n=124/541) |
| **How many patients in your practice had a vaccine preventable disease (OTHER THAN COVID-19) in the last year? % (n)** | | | |
| None | | 17.56% (n=95/541) | |
| Few cases | | 40.11% (n=217/541) | |
| Tens of cases | | 27.54% (n=149/541) | |
| Hundreds of cases and more | | 14.79% (n=80/541) | |
| **Have you received any training to address vaccine hesitancy among parents? % (n)** | | **How interested would you be in receiving training in techniques that help address and resolve vaccine hesitancy concerns among parents? % (n)** | |
| Yes | 28.1% (n=152/541) |
| No | 71.9% (n=389/541) | Not interested at all | 7.02% (n=38/541) |
| More positive | 37.52% (n=203/541) | Slightly interested | 9.98% (n=54/541) |
| **Do you believe such training should be part of university education? % (n)** | | Neutral | 26.8% (n=145/541) |
| No | 5.91% (n=32/541) | Interested | 35.86% (n=194/541) |
| Maybe | 21.07% (n=114/541) | Very interested | 20.33% (n=110/541) |
| Yes | 73.01% (n=395/541) |  |  |

Table 3. HCPs vaccination practices, sources of information, and training needs.

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **General Vaccine Hesitancy Predictors – Binary Logistic Regression (LR)** | | | | | | | | | |
| **Model Terms** | |  | **95% CI for OR** | **SE** | | **z-Statistic** | **P value** | |
| **Intercept ()** | | **0.014** | **0.005 - 0.037** | **0.486** | | **-8.753** | **<0.0005** | |
| **Occupation (P value: 0.002)** | Physician | - | - | - | - | | - | |
| **Dentist** | **5.714** | **1.846 - 17.690** | **0.577** | **3.022** | | **0.003** | |
| **Nurse** | **4.571** | **1.076 - 19.434** | **0.738** | **2.058** | | **0.040** | |
| **Pharmacist** | **4.229** | **1.315 - 13.599** | **0.596** | **2.420** | | **0.016** | |
| Other HCP | 4.538 | 0.840 - 24.508 | 0.861 | 1.758 | | 0.079 | |
| **Total Years of Practice (P value: 0.008)** | Entry level | - | - | - | - | | - | |
| **Mid level** | **3.183** | **1.188 - 8.534** | **0.503** | **2.302** | | **0.021** | |
| Senior level | 0.942 | 0.244 - 3.647 | 0.690 | -0.086 | | 0.932 | |
| **Log-Likelihood:**  **-87.283** | **Log-Likelihood of Null Model:**  **-98.228** | | **Log-Likelihood Ratio P value: 0.001** | | | | |

Table 4: The results of the logistic regression modeling general vaccine hesitancy and its determinants. P values for the bivariate Chi-square tests are below each variable below Rows with significant p values are bolded. OR: odds ratio; CI: confidence interval; SE: standard error

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Figure 1. The distribution of responses for the physician-targeted Vaccine Hesitancy Scale (VHS).

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Figure 2. HCPs were asked to what extent they AGREE that it is very useful to vaccinate children against the following illness; please note that the vaccines are mentioned in the brackets.

**Extra results (in case you need them). You may organize them and include the below two tables also as supplementary if you want.**

The % with VHS score > 50% is 4.44% (n=24)

VHS Cronbach alpha = 0.66

|  |  |  |  |
| --- | --- | --- | --- |
| **Statement** | **Not hesitant** | **Unsure** | **Hesitant** |
| **Childhood vaccines are important for children's health.** | 94.45% (n=511/541) | 2.4% (n=13/541) | 3.14% (n=17/541) |
| **Childhood vaccines are effective.** | 95.56% (n=517/541) | 1.29% (n=7/541) | 3.14% (n=17/541) |
| **Having children vaccinated is important for the health of others in the community.** | 94.27% (n=510/541) | 3.33% (n=18/541) | 2.4% (n=13/541) |
| **All childhood vaccines offered by the government programme in the community are beneficial.** | 87.25% (n=472/541) | 9.43% (n=51/541) | 3.33% (n=18/541) |
| **New vaccines carry more risks than older vaccines.** | 26.99% (n=146/541) | 35.3% (n=191/541) | 37.71% (n=204/541) |
| **The information I receive about vaccines from the vaccine program is reliable and trustworthy.** | 78.74% (n=426/541) | 17.56% (n=95/541) | 3.7% (n=20/541) |
| **Getting vaccines is a good way to protect children from disease.** | 94.27% (n=510/541) | 2.96% (n=16/541) | 2.77% (n=15/541) |
| **"Generally I promote what my health authority/clinical guidelines recommend about vaccines for children."** | 86.69% (n=469/541) | 6.28% (n=34/541) | 7.02% (n=38/541) |
| **I am concerned about serious adverse effects of vaccines.** | 24.4% (n=132/541) | 17.93% (n=97/541) | 57.67% (n=312/541) |
| **Children does/do not need vaccines for diseases that are not common anymore.** | 48.8% (n=264/541) | 19.22% (n=104/541) | 31.98% (n=173/541) |

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|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Disease (Vaccine)** | **Strongly disagree** | **Somewhat disagree** | **Somewhat agree** | **Strongly agree** |
| **Diphtheria, Pertussis, Tetanus, (DTaP/Tdap)** | 2.77% (n=15/541) | 3.14% (n=17/541) | 17.01% (n=92/541) | 77.08% (n=417/541) |
| **Pneumococcus (PCV13)** | 2.59% (n=14/541) | 5.91% (n=32/541) | 22.74% (n=123/541) | 68.76% (n=372/541) |
| **Meningococcus (MCV4)** | 1.85% (n=10/541) | 3.88% (n=21/541) | 26.8% (n=145/541) | 67.47% (n=365/541) |
| **Chickenpox (varicella)** | 2.4% (n=13/541) | 8.87% (n=48/541) | 19.78% (n=107/541) | 68.95% (n=373/541) |
| **Hemophilus Influenza b(Hib)** | 2.03% (n=11/541) | 4.44% (n=24/541) | 23.11% (n=125/541) | 70.43% (n=381/541) |
| **Tuberculosis (BCG)** | 2.59% (n=14/541) | 9.06% (n=49/541) | 20.15% (n=109/541) | 68.21% (n=369/541) |
| **Polio (IPV/OPV)** | 2.59% (n=14/541) | 5.36% (n=29/541) | 16.08% (n=87/541) | 75.97% (n=411/541) |
| **Measles, Mumps, Rubella (MMR)** | 2.77% (n=15/541) | 2.22% (n=12/541) | 13.68% (n=74/541) | 81.33% (n=440/541) |
| **Hepatitis A** | 4.62% (n=25/541) | 9.24% (n=50/541) | 35.86% (n=194/541) | 50.28% (n=272/541) |
| **Hepatitis B** | 2.22% (n=12/541) | 3.33% (n=18/541) | 19.96% (n=108/541) | 74.49% (n=403/541) |
| **Rotavirus** | 4.25% (n=23/541) | 6.84% (n=37/541) | 30.31% (n=164/541) | 58.6% (n=317/541) |
| **Seasonal influenza vaccine** | 5.18% (n=28/541) | 15.9% (n=86/541) | 34.2% (n=185/541) | 44.73% (n=242/541) |
| **Human Papillomavirus (HPV9/HPV4)** | 3.7% (n=20/541) | 8.5% (n=46/541) | 29.02% (n=157/541) | 58.78% (n=318/541) |

For BV analysis, the screenshot below shows the results >> all were Chi-Squared. Only occupation and Years of Practice were significant. Results of MV are in Table 4 above.

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