Psychosocial Impact of COVID-19 Pandemic on Children of Healthcare Workers at a Private Tertiary Hospital in Manila Aged 6-16 years old Using the Pediatric Symptoms Checklist-35

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BACKGROUND

The COVID-19 pandemic led to a public health emergency. People around the globe adjusted and complied with the health protocols implemented. These changes may pose a great risk of behavioral and psychosocial problems for adolescents and children. The Pediatric Symptoms Checklist (PSC)–35 is one of the validated psychosocial screening tools that helps identify emotional, cognitive and behavior problems in children, and was used in this study.

This study was conducted three years post-pandemic to assess and identify the psychosocial impact of the COVID-19 pandemic on children of health care workers at a tertiary hospital in Manila so that timely intervention can be conveyed. It aims to identify the possible risks and evaluate the psychosocial well-being of our children, as well as what factors contributes to their mental health, most especially in the time of pandemic. Furthermore, this study aims to gain a better understanding of the implications of the pandemic in our younger generation.

OBJECTIVES

General Objective

This study aims to determine the psychosocial impact of COVID-19 pandemic on children of healthcare workers aged 6-16 years old using the Pediatric Symptoms Checklist (PSC)-35 at a tertiary hospital in Manila from June 2023 to September 2023.

Specific Objectives

1. To describe the demographic and clinical profile of subjects as to: age, gender, grade level at present, sibling rank, parental highest educational attainment, parental occupation, exposure to confirmed COVID-19 infection in the family, history of confirmed COVID 19 infections in the child, number of people in the household, presence of co-morbidity in the parents, and presence of co-morbidity in the child as professionally evaluated by a health professional.

2. To determine the prevalence of subjects who are at risk of psychosocial dysfunction using the PSC-35.

3. To determine the association of subjects at risk for psychosocial dysfunction using the PSC-35 of the subjects in relation to: age, gender, child's school level at present, sibling rank, parental age and gender, parental highest educational attainment, parental occupation, annual family income, exposure to confined COVID-19 in the family, history of confirmed COVID-19 infection in the child, number of people in the household, presence of co-morbidity in the parents and presence of co-morbidity in the child.

METHODOLOGY

This is a cross-sectional analytic study. Demographic and clinical data were collected and PSC -35 were administered from June 2023-September 2023 to the participants in a tertiary hospital in Manila, Philippines.

Inclusion Criteria

This study included healthcare workers in a private tertiary hospital who have children aged 6-16 years old and who have provided written consent to be included in the study.

Exclusion Criteria

This study excluded children with conditions of cognitive and communicative impairments, chronic and serious illnesses, as elaborated in the definition of terms and previously diagnosed and treated mental health conditions

Health care workers who are parents with the conditions previously stated have also been excluded. These exclusion criteria was established in respondents during screening of subjects using profesional evaluation or certification.

Sample size

The computed sample size was 339 subjects calculated using Slovin's formula for determining the minimum sample size:

$$n = \frac{N}{1 + N(e)^2}$$

N = population size of health care workers (2200)
e = sampling error (0.05)
n = required sample size

Convenience sampling was used in choosing eligible subjects and was screened based on the inclusion criteria stated above.

METHODOLOGY

Procedure

This research protocol was submitted to and approved by the Research Ethical Review Board (RERB) of the said hospital. After obtaining approval by the RERB, a letter of request for approval, along with a copy of the research protocol, was sent to the Office of the Medical Director and Department of Pediatrics for approval prior to conducting the research. Moreover, a letter of request for the list of health care workers with children aged 6-16 years old, along with the consent forms in English and Tagalog templates, was sent to the Medical Society Association, Nursing Service Department and Human Resources Department. Inquiry regarding if the staff have children aged 6-16 years old was done prior to giving the questionnaire to confirm if they may be part of the study.

Data collection

This questionnaire-based survey was conducted from June to September 2023. It was filled up in a face-to-face setting by healthcare workers who work in a private tertiary hospital and who have children aged 6-16 years old. Said healthcare worker answered the questionnaire for approximately 5-10 minutes.

The first part included the baseline information that includes each child's age, gender, place of residence, school level at present, sibling rank, parental highest educational attainment, parental occupation, socioeconomic status, exposure to confirmed COVID-19 in the family, history of confirmed COVID 19 infections in the family, number of people in the household, presence of co-morbidity in parents and presence of co-morbidity in the child.

The second part involved the PSC-35 for the assessment of Psychosocial well-being. The checklist was completed by the parent or guardian of the subjects. It was administered and scored in 5-7 minutes. The possibility of unreturned or unanswered questionnaires has been considered and was excluded in the study.

METHODOLOGY

Instrument Used: The Pediatric Symptoms Checklist (PSC) -35

This study used the validated English and Filipino translated PSC -35 questionnaire among children of health care workers at a private tertiary hospital aged 6-16 years old. This age group was known to be vulnerable to behavioral problems. PSC-35 is a screening tool designed to improve the recognition of psychosocial problems in children. It has been demonstrated to have a sensitivity of 0.95, a specificity of 0.68, and a Cronbach alpha score of 0.89, indicating high internal consistency. It consists of 35 questions that are rated and scored as "Never (Hindi)" 0, "Sometimes (Paminsan-minsan)" 1, and "Often (Madalas)" 2. These questions describe a series of signs and symptoms related to impairments in cognitive, emotional, and/or behavioral well-being in children, and is designed to alert for a need for further investigation . The total score was calculated by adding the score of each individual items. A score of 0 to 70 will be obtained. A cut off score of 28 or higher indicates a high possibility psychosocial impairment and warrants a suggestion to seek further evaluation by a qualified health or mental health professionals. If one to three items are left blank, a score of 0 is implied and if there are four or more items unanswered, the questionnaire is considered invalid.

Data Analysis

SPSS version 25 and Microsoft Excel was used in the analysis of data. Demographic and associated clinical data were described using descriptive statistics and presented in number and percent values. Frequency distribution tables were also employed to present the data gathered over the course of the study. Comparisons between categorical variables were performed using the Pearson chi-squared test with degrees of freedom, with significance defines as $p < 0.05$. All analyses were controlled for significant confounding variables according to demographic data collected.

Ethical Considerations

The protocol for this study adhered to ethical considerations and ethical principles set out in relevant guidelines including the WHO guidelines, Declaration of Helsinki, Data Privacy Act of 2012 and National Ethics Guidelines for Health Research. In accordance with the Data Safety, Privacy and Confidentiality, all of the participants' information will be kept confidential. All forms of identifiable information and data were given a code number.

METHODOLOGY AND RESULTS

For this research, a master list was provided which included all the code numbers and identifiable data. Only the principal investigator and key personnel for this research had access to this master list. The principal investigator and all key personnel have completed the Good Clinical Practice training on the responsible conduct on research with human data. This study was only initiated upon the approval of the RERB of the said hospital. A consent form in English and Tagalog format was filled up by the participants respectively prior the answering the questionnaires.

Respondents with children above scores of 28 were informed of the results and advised to seek further consult with a children's mental health specialist. This was done in a private and confidential setting.

RESULTS

Among the population of healthcare workers surveyed, 385 questionnaires were distributed. Of these, five responses were eliminated due to incomplete or unanswered forms. Eight responses were also removed due to subjects meeting exclusion criteria. This left a total of 372 responses included in the final analysis. Among these, 4.57% (n=17) scored 28 or higher on the PSC-35, indicating with increased risk of psychologic impairment and warranting further assessment.

Demographic profile of subjects

There was 51.6% males (n=192) and 48.4% females (n=180), a large proportion belonged to age group 12-16 years (35.8%, n=133). More than half of these are firstborns (51.1%, n=190), and a third of these are currently in junior high school (33.3%, n=124). Among the parents of the subjects who were included in the final analysis, 74.2% (n=276) were females and 25.8% (n=96) were males, predominantly in their 30s and 40s. Majority of the parents (69.6%, n= 259) are married. Parents were stratified according to level of education, as well as occupational group based on the Philippine Standard Occupational Classification (PSOC) published by the Philippine Statistics Authority (PSA). For both parents, the educational attainment was found to be at predominantly college graduate level (65.9%, n=245), while majority of occupation in the Professional group (41.1%, n=153). As for annual income, 41.1% (n=153) or majority of the respondents have a household income of 250,000 and above. Majority of the household have five individuals living together (23.9% n=5).

RESULTS

RESULTS

Clinical profile of subjects

Almost half of the respondents have households with a history of confirmed COVID-19 infections (48.9%, n=182), while over a third of the children assessed have a history of COVID-19 infection (36.0%, n=134). A total of 19.4% (n=72) parents have known comorbid conditions, with majority of them having hypertension and/or bronchial asthma 7.5% (n=28). Among the children, 5.4% (n=20) are known to have stable and well-controlled comorbid conditions; bronchial asthma (40%, n=15,) is the predominant comorbidity in these children.

Prevalence of risk of psychosocial impairment

Majority of the subjects or 95.43% (n=355) has a PSC-35 score of 28 and lower and were identified with no risk of psychosocial dysfunction. On the other hand, 4.57% (n=17) corresponds to children with PSC-35 score of 28 and higher and with increased risk of psychosocial impairment. Those respondents with children above scores of 28 were informed of the results privately and confidentially. They were also advised to seek further consult with a children's mental health specialist.

Occupations of parents with respect to hospital position

The majority of the parents work as a nurse corresponding to 34.7% (n=129) of the respondents followed by housekeeping staff (15.6%, n=58) then nursing aide (9.14%, n=34). A total of 4.57% (n=17) are at risk of psychosocial impairment scoring 28 or higher in PSC-35. The highest proportion is in the housekeeping staff (52.94%, n=9) succeeded by nurse (17.64% n=3), nursing aide (17.64%, n=3), accountant (5.88% n=1) and unit clerk (5.88%, n=1).

RESULTS

RESULTS

Association of subjects at risk for psychosocial impairment using the PSC– 35 of the subjects in relation to their demographic profile.

Majority of the subjects or 58.8 % (n= 10) identified to be at risk of psychosocial dysfunction are aged 12-16, females (70.6%, n=12). Most of these children are in junior high school (47.1%, n=8) and were firstborns. Most of their parents are predominantly aged 36-45 (23.5%, n=4) and married (47.1%, n=8). Educational attainment of mothers and fathers of children with risk of psychosocial dysfunction were college graduate (58.8%, n=10) and high school graduate (35.3%, n=6), respectively.

As mentioned earlier, occupations of their parents were stratified according to PSOC by PSA and showed that most of their mothers or 52.9% (n=9) work in service and sales, while most of their fathers or 35.3% (n=6) work in plant and machine operations with annual household income of 60,000 to 99,999 pesos (41.2%, n=7). 29.4% (n=5) of the children belongs to a household consisting of four to six individuals with 70.6% (n=12) confirmed COVID-19 cases. A bulk of these children or 64.7% (n=11) had no history of COVID-19 infection. Moreso, children who are at risk of psychosocial impairments and their parents had no known comorbidities, corresponding to 82.4% (n=14) and 52.9% (n=9), respectively.

Lastly, in line with the data gathered, it was shown that there was no significant correlation found between children at risk of psychosocial impairment in relation to their age, gender, sibling rank and present school level as well as to the parental age, gender, or marital status, educational attainment of either parent, employment of the father, annual income and household size. Furthermore, there was no significant correlation found between in those subjects at risk for impairment and the history of confirmed COVID-19 infection in all members of the household, including the child.

However, a significant association was found in subjects at risk for psychosocial impairment with respect to the employment of the mother (p value = 0.018) and presence of comorbidities in the parent (p value = 0.000).

CONCLUSIONS AND RECOMMENDATIONS

In conclusion, this study reports a total of 4.57% (n=17) children at risk of psychosocial impairment. And in relation to the subject's demographic and clinical profile: age, gender, sibling rank and present school level as well as to the parental age, gender, or marital status, educational attainment of either parent, employment of the father, annual income, household size, history of confirmed COVID-19 infection in all members of the household, including the child and the risk of psychosocial impairment showed no significant correlation.

However, a **significant correlation was found between the risk of psychosocial impairment in the child with respect to the employment of the mother** (x^2 = 18.41, p value = 0.018) **and comorbidities in the parent** (x^2 = 35.06, p value = 0.000).

For future studies, it is recommended that similar assessments are done across multiple institutions while correlating other patient and household-related factors, in order to gain a more consistent picture of the psychosocial impact of COVID-19 on the children of healthcare workers in the Philippine setting.