

Effectiveness of Brochure-Based Health Education Intervention on Respiratory Coping Practices among Informal Workers Exposed To Air Pollution in Sampaloc, Manila

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ABSTRACT

Air pollution continues to pose a significant threat to respiratory health, particularly among informal workers whose occupations require prolonged exposure to polluted environments. Limited access to health information and preventive healthcare services further increases their vulnerability to respiratory illnesses. This study evaluated the effectiveness of a brochure-based health education intervention in improving respiratory health knowledge and respiratory coping practices among informal workers exposed to air pollution in Sampaloc, Manila.

A quantitative pre-experimental one-group pretest-posttest research design was employed involving thirty (30) purposively selected informal workers aged 18 to 65 years. A researcher-developed questionnaire, validated by experts, was administered before and after the implementation of the brochure-based health education intervention. Descriptive statistics, including weighted mean and standard deviation, were used to describe respondents' respiratory health knowledge and coping practices. Paired-samples t-test was utilized to determine significant differences between pretest and posttest scores at the 0.05 level of significance.

The findings revealed that respondents demonstrated improved respiratory health knowledge and more favorable respiratory coping practices following the educational intervention. Statistical analysis showed significant differences between the pretest and posttest scores for both respiratory health knowledge ($t = 9.76$, $p < 0.001$) and respiratory coping practices ($t = 10.06$, $p < 0.001$). These findings indicate that the brochure-based health education intervention effectively enhanced participants' understanding of respiratory health and encouraged the adoption of healthier coping practices.

The study concluded that brochure-based health education is an effective, practical, and low-cost community health promotion strategy for improving respiratory health knowledge and respiratory coping practices among informal workers exposed to air pollution. Similar educational interventions may be implemented by local health authorities to strengthen respiratory disease prevention programs within vulnerable occupational groups.

Keywords: brochure-based health education, respiratory coping practices, respiratory health knowledge, informal workers, air pollution, community health education

INTRODUCTION

Air pollution remains one of the leading environmental risk factors affecting human health worldwide. Continuous exposure to airborne pollutants has been associated with respiratory diseases, reduced pulmonary function, and increased healthcare utilization, particularly among individuals whose occupations require prolonged exposure to traffic emissions, road dust, and other environmental contaminants. Informal workers, including street vendors, street sweepers, public utility drivers, and other outdoor laborers, are among the occupational groups most vulnerable to these hazards because they spend extended periods working in open environments while often having limited access to occupational health protection and preventive healthcare services.

In urban communities such as Sampaloc, Manila, heavy vehicular traffic and commercial activities contribute to poor ambient air quality, increasing the likelihood of respiratory health problems among workers regularly exposed to polluted environments. Despite this occupational risk, many informal workers rely primarily on self-management practices whenever respiratory symptoms such as cough, colds, throat irritation, or breathing discomfort occur. Limited health literacy, financial constraints, and inadequate access to health education frequently influence their decisions regarding symptom management and healthcare utilization.

Health education has long been recognized as an essential strategy for improving disease prevention and promoting healthy behaviors. Educational interventions enhance individuals' knowledge, increase awareness of disease risk factors, and encourage the adoption of evidence-based health practices. Among the various educational approaches available, printed brochures remain a practical and economical method of delivering health information because they are portable, easy to understand, and can be reviewed repeatedly by recipients at their convenience. Properly designed educational brochures may therefore serve as effective tools for improving respiratory health literacy among populations with limited access to formal health education programs.

Although numerous studies have examined respiratory diseases associated with air pollution, relatively few have focused on evaluating brochure-based health education interventions among informal workers exposed to polluted environments in local community settings. Existing literature has primarily emphasized environmental monitoring and occupational risk while providing limited evidence regarding simple community-based educational strategies that may improve respiratory health knowledge and coping practices among vulnerable workers.

Recognizing this gap, the present study evaluated the effectiveness of a brochure-based health education intervention in improving respiratory health knowledge and respiratory coping practices among informal workers exposed to air pollution in Sampaloc, Manila. Specifically, the study assessed participants' respiratory coping practices, measured their respiratory health knowledge before and after the intervention, and determined whether significant differences existed following the implementation of the educational brochure. The findings may provide evidence supporting the use of low-cost educational materials as practical community health promotion interventions for populations at increased risk of respiratory illnesses.

METHODS

Research Design

The study employed a quantitative pre-experimental one-group pretest-posttest research design to determine the effectiveness of a brochure-based health education intervention in improving respiratory

health knowledge and respiratory coping practices among informal workers exposed to air pollution. The design involved administering a structured questionnaire before and after the educational intervention to determine changes in respondents' knowledge and practices. This approach allowed the researcher to evaluate the extent to which the brochure-based health education intervention influenced the measured variables.

Study Setting

The study was conducted in Sampaloc, Manila, a densely populated urban district characterized by heavy vehicular traffic, commercial establishments, and numerous informal work settings. The locality was selected because many informal workers perform their daily occupations along busy roads and public areas where exposure to air pollutants is common.

Participants

The participants consisted of thirty (30) informal workers aged 18 to 65 years who were regularly exposed to outdoor air pollution while performing their occupations. Eligible participants included street vendors, street sweepers, public utility vehicle drivers, and other individuals engaged in informal occupations within Sampaloc, Manila. Participants were selected through purposive sampling based on the inclusion criteria established by the researcher.

Research Instrument

Data were collected using a researcher-developed structured questionnaire composed of three sections. The first section gathered participants' basic demographic information. The second section assessed respiratory coping practices using a five-point Likert scale. The third section measured respondents' respiratory health knowledge before and after the educational intervention. The questionnaire underwent content validation by experts in respiratory therapy, research methodology, and language to establish content validity and clarity prior to data collection.

Brochure-Based Health Education Intervention

Following completion of the pretest, participants received a brochure containing information regarding respiratory health, common respiratory illnesses associated with air pollution, preventive measures, proper respiratory hygiene, appropriate use of face masks, avoidance of environmental pollutants whenever possible, smoking avoidance, healthy lifestyle practices, and appropriate health-seeking behaviors. The brochure was developed using evidence-based respiratory health recommendations and written in language appropriate for community-based health education.

Data Collection Procedure

Prior to data collection, approval to conduct the study was obtained from the appropriate university authorities and local government officials. Eligible participants were informed about the objectives of the study and voluntarily signed informed consent forms before participation. The researcher first administered the pretest questionnaire to establish baseline levels of respiratory health knowledge and respiratory coping practices. After completing the questionnaire, participants received the brochure-based health education intervention and were given sufficient time to read and understand its contents. Upon completion of the intervention, the same questionnaire was administered as a posttest to determine changes in knowledge and respiratory coping practices. Completed questionnaires were collected, checked for completeness, and prepared for statistical analysis.

Statistical Analysis

Descriptive and inferential statistical techniques were employed to analyze the collected data. Frequency and percentage were used to summarize participant responses when appropriate. Weighted mean and

standard deviation described the levels of respiratory health knowledge and respiratory coping practices before and after the intervention. A paired-samples t-test was performed to determine whether significant differences existed between the pretest and posttest scores. Statistical significance was evaluated at the 0.05 level.

RESULTS

This section presents the findings of the study on the effectiveness of the brochure-based health education intervention in improving respiratory health knowledge and respiratory coping practices among informal workers exposed to air pollution in Sampaloc, Manila. Descriptive statistics were used to summarize the respondents' respiratory coping practices and respiratory health knowledge before and after the intervention, while paired-samples t-test determined the significance of the observed changes.

Respiratory Coping Practices Before the Brochure-Based Health Education Intervention

Table 1 presents the respiratory coping practices of informal workers before the implementation of the brochure-based health education intervention.

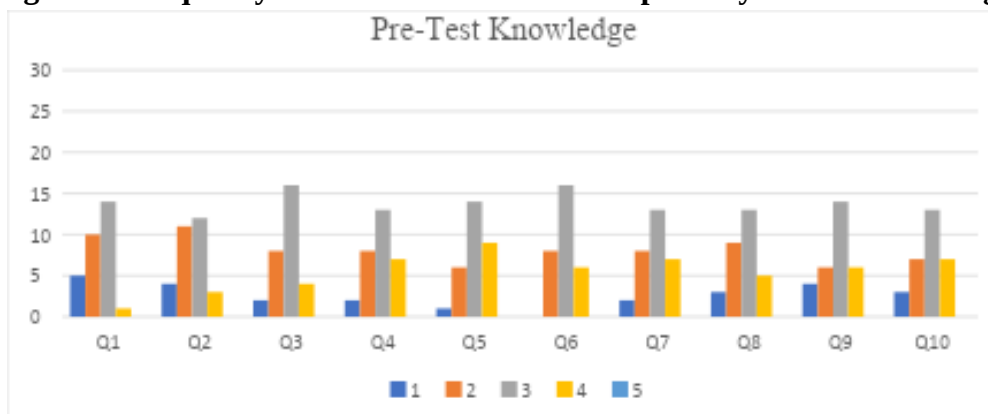
Table 1
Respiratory Coping Practices Before the Brochure-Based Health Education Intervention

Pseudoname	P2.1	P2.2	P2.3	P2.4	P2.5	P2.6	P2.7	P2.8	P2.9	P2.10	Total	Average
Junell Pardo	1	1	2	2	2	2	2	1	2	1	16	1.6
Eduardo F. Jr	1	2	1	2	2	2	3	2	1	2	18	1.8
Junjun	1	1	1	1	2	2	2	2	3	2	17	1.7
Anika	3	2	2	1	1	2	1	1	1	1	15	1.5
Richard	2	2	2	2	2	2	2	2	2	2	20	2
Mhal Burgos	3	4	4	4	4	3	4	3	3	4	36	3.6
Kendra	2	2	3	3	3	3	4	4	4	4	32	3.2
John Paul	2	2	3	3	3	3	4	4	3	3	30	3
Ricardo Uy	3	1	2	3	3	3	4	4	4	4	31	3.1
F.F	4	4	4	4	4	3	3	4	4	4	38	3.8
M.D	3	3	3	3	3	3	3	3	4	4	32	3.2
C.F	2	3	3	4	3	3	3	3	3	3	30	3
John Lloyd	3	3	3	3	3	4	3	2	2	2	28	2.8
A.B	1	3	3	4	4	4	3	3	3	3	31	3.1
Tito Boy	3	3	3	3	3	3	3	3	3	3	30	3
J.D.C	2	1	2	2	2	2	2	2	2	2	19	1.9

Rufon, Jamiah	3	3	3	4	4	4	3	3	3	3	33	3.3
Rey Cruz	3	3	3	3	4	4	3	3	3	3	32	3.2
Rosel Mags	2	2	2	2	2	2	2	2	1	3	20	2
Mary Joy	2	2	2	2	3	3	3	3	2	2	24	2.4
Sague, Warrencie	3	3	3	2	4	3	3	3	3	3	30	3
Bura-ay, Jasmin	1	2	3	3	3	3	2	2	2	2	23	2.3
Jubilin Abene	2	2	3	4	4	4	4	3	3	3	32	3.2
Merkado, Andrea	3	3	3	3	3	3	3	3	3	3	30	3
Kyle Tulang	3	3	3	3	3	3	2	2	4	4	30	3
Yabel, Maria	2	2	2	2	3	3	1	1	1	1	18	1.8
Lucas, Jowl	3	3	3	3	3	3	3	3	3	3	30	3
Jayvee	3	4	4	4	4	4	4	4	4	4	39	3.9
A.C.U	2	2	4	3	4	3	4	3	3	3	31	3.1
Juan Alexander	3	3	3	3	3	2	2	2	3	3	27	2.7

To provide a visual presentation of the respondents' responses, **Figure 1** presents the frequency distribution of the pretest respiratory health knowledge scores.

Figure 1. Frequency Distribution of Pretest Respiratory Health Knowledge



The findings showed that the respondents possessed varying levels of respiratory health knowledge before the educational intervention. The overall mean indicated that respondents had limited knowledge regarding respiratory illness prevention, respiratory hygiene, and appropriate health-seeking behavior, highlighting the need for health education among informal workers exposed to air pollution.

Respiratory Coping Practices Before the Brochure-Based Health Education Intervention

The respondents' respiratory coping practices before the brochure-based health education intervention are presented in **Table 2**.

Table 2

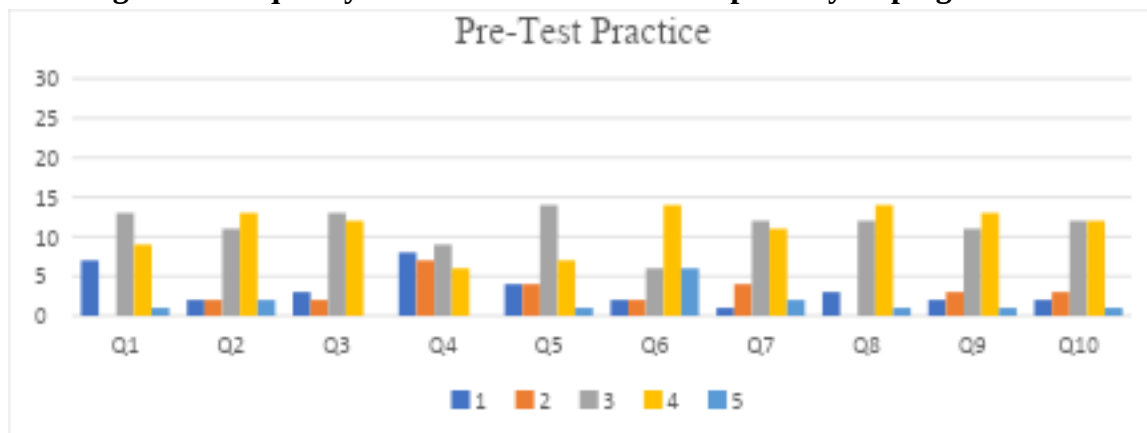
Respiratory Coping Practices Before the Brochure-Based Health Education Intervention

Pseudoname	P3.1	P3.2	P3.3	P3.4	P3.5	P3.6	P3.7	P3.8	P3.9	P3.10	Total	Average
Junell Pardo	1	2	2	2	1	1	2	1	1	1	14	1.4
Eduardo F. Jr	1	1	2	3	1	2	1	1	1	1	14	1.4
Junjun	3	3	1	1	1	3	2	3	2	2	21	2.1
Anika	1	1	1	1	2	2	2	1	2	2	15	1.5

Richard	3	2	3	2	1	1	2	3	3	3	23	2.3
Mhal Burgos	4	4	4	1	5	4	4	4	4	4	38	3.8
Kendra	4	4	4	3	3	4	4	4	4	4	38	3.8
John Paul	3	4	4	1	3	5	3	4	4	3	34	3.4
Ricardo Uy	4	5	3	2	3	5	3	4	4	4	37	3.7
F.F	5	5	3	3	4	5	5	5	5	5	45	4.5
M.D	3	4	4	2	3	3	4	4	4	4	35	3.5
C.F	3	4	4	4	4	4	4	4	4	4	39	3.9
John Lloyd	4	4	4	4	4	5	3	3	4	4	39	3.9
A.B	3	4	4	2	3	5	4	4	3	3	35	3.5
Tito Boy	4	3	3	2	3	4	3	3	3	3	31	3.1
J.D.C	4	4	4	4	4	4	4	4	4	4	40	4
Rufon, Jamiah	1	3	3	2	2	3	3	3	3	3	26	2.6
Rey Cruz	3	3	3	3	3	4	3	3	3	3	31	3.1
Rosel Mags	1	3	3	3	3	4	4	4	4	3	32	3.2
Mary Joy	1	3	3	1	3	5	5	3	3	3	30	3
Sague, Warrencie	3	3	3	3	3	3	3	3	3	3	30	3
Bura-ay, Jasmin	4	4	4	4	2	4	3	3	3	4	35	3.5
Jubilin Abene	4	4	4	4	4	4	4	4	4	4	40	4
Merkado, Andrea	3	3	1	3	4	4	4	4	4	4	34	3.4
Kyle Tulang	1	4	4	1	3	4	4	4	3	3	31	3.1
Yabel, Maria	3	3	3	3	3	3	3	3	2	2	28	2.8
Lucas, Jowl	3	3	3	3	3	3	3	3	3	3	30	3
Jayvee	4	4	4	4	4	4	4	4	4	4	40	4
A.C.U	3	4	3	1	3	4	3	4	4	4	33	3.3
Juan Alexander	3	3	3	1	2	4	3	3	3	3	28	2.8

The distribution of responses is illustrated in **Figure 2**.

Figure 2. Frequency Distribution of Pretest Respiratory Coping Practices



The results indicated that although respondents practiced several respiratory coping measures, these practices were not consistently observed before the intervention. The findings suggested the need for additional respiratory health education to promote more appropriate coping behaviors.

Respiratory Health Knowledge After the Brochure-Based Health Education Intervention

The respondents' level of respiratory health knowledge after receiving the brochure-based health education intervention is presented in **Table 3**.

Table 3

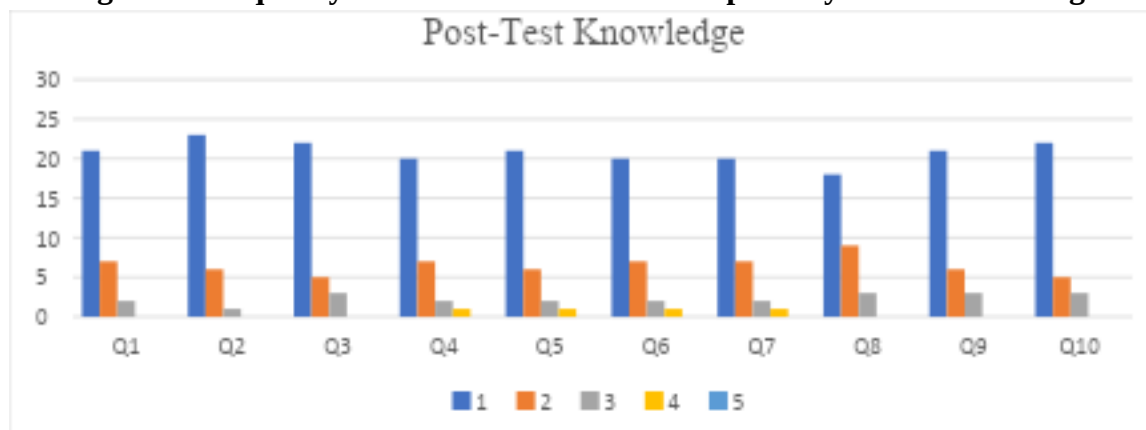
Respiratory Health Knowledge After the Brochure-Based Health Education Intervention

Pseudoname	P2.1	P2.2	P2.3	P2.4	P2.5	P2.6	P2.7	P2.8	P2.9	P2.10	Total	Average
Junell Pardo	1	1	1	1	1	1	1	1	1	1	10	1
Eduardo F. Jr	1	1	1	1	1	1	1	1	1	1	10	1
Junjun	1	1	1	1	1	1	1	1	1	1	10	1
Anika	1	1	1	1	1	1	1	1	1	1	10	1
Richard	1	1	1	1	1	1	1	1	1	1	10	1
Mhal Burgos	1	1	1	1	1	1	1	1	1	1	10	1
Kendra	1	1	1	1	1	1	1	1	1	1	10	1
John Paul	2	2	2	2	2	2	2	2	2	2	20	2
Ricardo Uy	1	1	1	1	1	1	1	1	1	1	10	1
F.F	1	1	1	1	1	1	1	1	1	1	10	1
M.D	1	1	1	1	1	1	1	1	1	1	10	1
C.F	2	2	2	2	2	2	2	2	2	2	20	2
John Lloyd	1	1	1	1	1	1	1	2	2	2	13	1.3

A.B	1	1	1	1	1	1	1	1	1	1	10	1
Tito Boy	1	1	1	1	1	1	1	1	1	1	10	1
J.D.C	2	1	2	1	1	1	1	1	1	1	12	1.2
Rufon, Jamiah	1	1	1	2	2	2	2	2	2	2	17	1.7
Rey Cruz	1	1	1	1	2	2	2	2	1	1	14	1.4
Rosel Mags	1	1	1	1	1	1	1	1	1	1	10	1
Mary Joy	1	1	1	2	1	1	1	1	1	1	11	1.1
Sague, Warrencie	1	1	1	2	1	1	1	1	1	1	11	1.1
Bura-ay, Jasmin	1	1	1	1	1	1	2	2	2	2	14	1.4
Jubilin Abene	2	2	3	4	4	4	4	3	3	3	32	3.2
Merkado, Andrea	3	3	3	3	3	3	3	3	3	3	30	3
Kyle Tulang	1	1	1	1	1	1	1	2	1	1	11	1.1
Yabel, Maria	2	2	2	2	2	2	1	1	1	1	16	1.6
Lucas, Jowl	2	2	2	2	2	2	2	2	2	3	21	2.1
Jayvee	3	1	3	3	3	3	3	3	3	1	26	2.6
A.C.U	2	2	1	1	1	1	1	1	1	1	12	1.2
Juan Alexander	1	1	1	1	1	2	2	2	1	1	13	1.3

The corresponding frequency distribution is presented in **Figure 3**.

Figure 3. Frequency Distribution of Posttest Respiratory Health Knowledge



Compared with the pretest results, respondents demonstrated improved respiratory health knowledge after reading the educational brochure. The lower posttest mean scores, based on the interpretation scale used in the study, reflected increased understanding of respiratory diseases, preventive measures, and appropriate health-seeking behaviors.

Respiratory Coping Practices After the Brochure-Based Health Education Intervention

Table 4 presents the respondents' respiratory coping practices after the brochure-based health education intervention.

Table 4

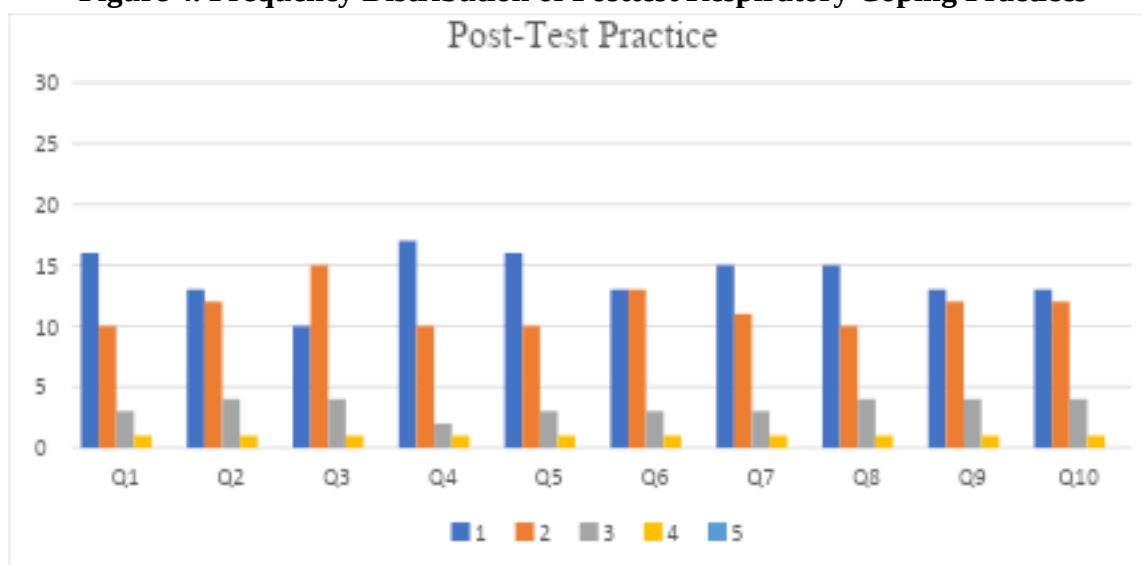
Respiratory Coping Practices After the Brochure-Based Health Education Intervention

Pseudoname	P3.1	P3.2	P3.3	P3.4	P3.5	P3.6	P3.7	P3.8	P3.9	P3.10	Total	Average
Junell Pardo	1	2	2	2	1	1	2	1	1	1	14	1.4
Eduardo F. Jr	1	1	2	3	1	2	1	1	1	1	14	1.4
Junjun	3	3	1	1	1	3	2	3	2	2	21	2.1
Anika	1	1	1	1	2	2	2	1	2	2	15	1.5
Richard	3	2	3	2	1	1	2	3	3	3	23	2.3
Mhal Burgos	4	4	4	1	5	4	4	4	4	4	38	3.8
Kendra	4	4	4	3	3	4	4	4	4	4	38	3.8
John Paul	3	4	4	1	3	5	3	4	4	3	34	3.4
Ricardo Uy	4	5	3	2	3	5	3	4	4	4	37	3.7
F.F	5	5	3	3	4	5	5	5	5	5	45	4.5
M.D	3	4	4	2	3	3	4	4	4	4	35	3.5
C.F	3	4	4	4	4	4	4	4	4	4	39	3.9
John Lloyd	4	4	4	4	4	5	3	3	4	4	39	3.9
A.B	3	4	4	2	3	5	4	4	3	3	35	3.5
Tito Boy	4	3	3	2	3	4	3	3	3	3	31	3.1
J.D.C	4	4	4	4	4	4	4	4	4	4	40	4
Rufon, Jamiah	1	3	3	2	2	3	3	3	3	3	26	2.6
Rey Cruz	3	3	3	3	3	4	3	3	3	3	31	3.1
Rosel Mags	1	3	3	3	3	4	4	4	4	3	32	3.2
Mary Joy	1	3	3	1	3	5	5	3	3	3	30	3
Sague, Warrencie	3	3	3	3	3	3	3	3	3	3	30	3
Bura-ay, Jasmin	4	4	4	4	2	4	3	3	3	4	35	3.5
Jubilin Abene	4	4	4	4	4	4	4	4	4	4	40	4
Merkado, Andrea	3	3	1	3	4	4	4	4	4	4	34	3.4
Kyle Tulang	1	4	4	1	3	4	4	4	3	3	31	3.1
Yabel, Maria	3	3	3	3	3	3	3	3	2	2	28	2.8

Lucas, Jowl	3	3	3	3	3	3	3	3	3	3	30	3
Jayvee	4	4	4	4	4	4	4	4	4	4	40	4
A.C.U	3	4	3	1	3	4	3	4	4	4	33	3.3
Juan Alexander	3	3	3	1	2	4	3	3	3	3	28	2.8

The frequency distribution of respondents' posttest respiratory coping practices is shown in **Figure 4**.

Figure 4. Frequency Distribution of Posttest Respiratory Coping Practices



The findings revealed an improvement in respondents' respiratory coping practices following the educational intervention. Participants reported practicing recommended respiratory health measures more consistently after receiving the brochure.

Significant Difference in Respiratory Health Knowledge Before and After the Brochure-Based Health Education Intervention

The difference between the respondents' pretest and posttest respiratory health knowledge scores is presented in **Table 5**.

Table 5 Paired-Samples t-Test on Respiratory Health Knowledge Before and After the Brochure-Based Health Education Intervention

Statement	Pre-Test			Post-Test		
	Mean	SD	Interpretation	Mean	SD	Interpretation
P2.1	2.3666667	0.80871688	Agree	1.3666667	0.6149479	Strongly Agree
P2.2	2.4666667	0.86036613	Agree	1.2666667	0.52083046	Strongly Agree
P2.3	2.7333333	0.78491525	Neutral	1.3666667	0.66867514	Strongly Agree

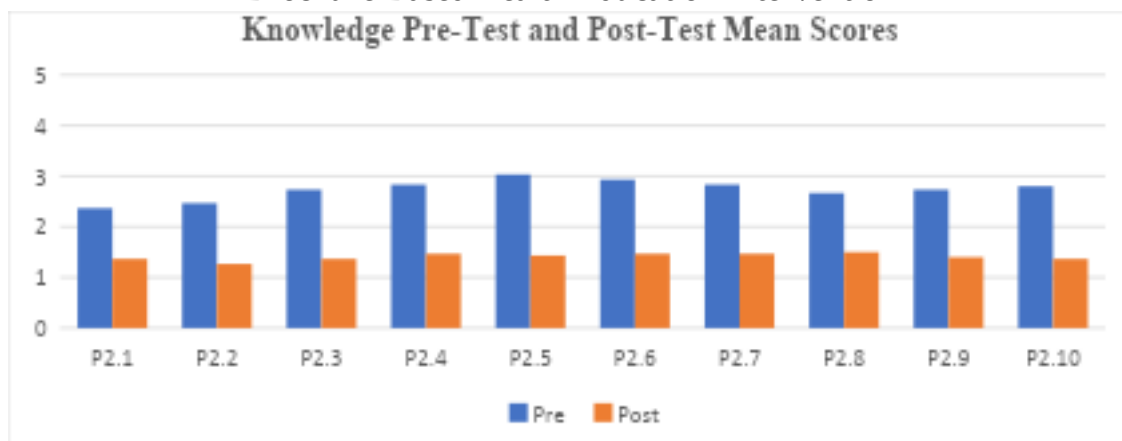
P2.4	2.8333333	0.87428131	Neutral	1.4666667	0.77607915	Strongly Agree
P2.5	3.0333333	0.80871688	Neutral	1.4333333	0.77385436	Strongly Agree
P2.6	2.9333333	0.69149181	Neutral	1.4666667	0.77607915	Strongly Agree
P2.7	2.8333333	0.87428131	Neutral	1.4666667	0.77607915	Strongly Agree
P2.8	2.6666667	0.88408664	Neutral	1.5	0.68228824	Strongly Agree
P2.9	2.7333333	0.94443318	Neutral	1.4	0.67466467	Strongly Agree
P2.10	2.8	0.92475533	Neutral	1.3666667	0.66867514	Strongly Agree
Overall Mean/SD	27.4	0.6703576	Strongly Disagree	14.1	0.61663715	Strongly Disagree

Legend:

Lower	Upper	Interpretation
1	1.8	Strongly Agree
1.81	2.6	Agree
2.61	3.4	Neutral
3.41	4.2	Disagree
4.21	5	Strongly Disagree

The comparison of the overall pretest and posttest mean scores on Respiratory Health Knowledge is illustrated in **Figure 5**.

Figure 5. Comparison of Mean Scores in Respiratory Health Knowledge Before and After the Brochure-Based Health Education Intervention



The paired-samples t-test revealed a statistically significant difference between the pretest and posttest respiratory health knowledge scores ($t = 9.76$, $p < 0.001$). Since the computed p-value was lower than the 0.05 level of significance, the null hypothesis was rejected. These findings indicated that the brochure-based health education intervention significantly improved the respondents' respiratory health knowledge.

Significant Difference in Respiratory Coping Practices Before and After the Brochure-Based Health Education Intervention

The difference between the respondents' pretest and posttest respiratory coping practice scores is presented in Table 6.

Table 6
Paired-Samples t-Test on Respiratory Coping Practices Before and After the Brochure-Based Health Education Intervention

Statement	Pre-Test			Post-Test		
	Mean	SD	Interpretation	Mean	SD	Interpretation
P3.1	2.9	1.18467222	Sometimes	1.6333333	0.80871688	Always
P3.2	3.3666667	0.96430548	Sometimes	1.7666667	0.81720015	Always
P3.3	3.1333333	0.93710241	Sometimes	1.8666667	0.77607915	Often
P3.4	2.4333333	1.10432795	Often	1.5666667	0.77385436	Always
P3.5	2.9	1.02889294	Sometimes	1.6333333	0.80871688	Always
P3.6	3.6666667	1.09334455	Rarely	1.7333333	0.78491525	Always
P3.7	3.3	0.91538573	Sometimes	1.6666667	0.80229556	Always
P3.8	3.3333333	0.9589266	Sometimes	1.7	0.83666003	Always
P3.9	3.2666667	0.94443318	Sometimes	1.7666667	0.81720015	Always
P3.10	3.2333333	0.93526074	Sometimes	1.7666667	0.81720015	Always
Overall Mean/SD	31.533333	0.78947094	Never	17.1	0.71551766	Never

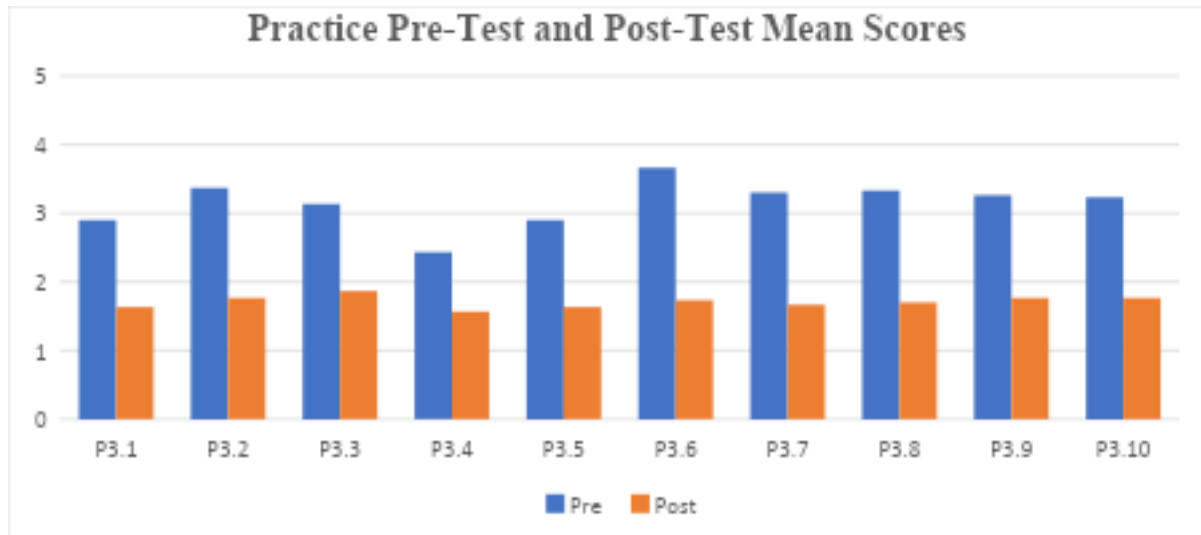
Legend:

Lower	Upper	Interpretation
1	1.8	Strongly Agree
1.81	2.6	Agree
2.61	3.4	Neutral
3.41	4.2	Disagree

4.21	5	Strongly Disagree
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The comparison of the overall pretest and posttest mean scores on Respiratory Coping Practices is illustrated in **Figure 6**.

Figure 6. Comparison of Mean Scores in Respiratory Coping Practices Before and After the Brochure-Based Health Education Intervention



The paired-samples t-test demonstrated a statistically significant difference between the respondents' respiratory coping practice scores before and after the intervention ($t = 10.06$, $p < 0.001$). Consequently, the null hypothesis was rejected, indicating that the brochure-based health education intervention effectively improved the respiratory coping practices of informal workers exposed to air pollution.

DISCUSSION

The findings demonstrated that informal workers exposed to air pollution possessed varying levels of respiratory health knowledge and respiratory coping practices before receiving the brochure-based health education intervention. The pretest results suggested that many respondents did not consistently practice recommended respiratory health measures and exhibited limited knowledge regarding respiratory disease prevention. Such findings reflected the continuing need for accessible health education among populations regularly exposed to environmental pollutants.

Following the implementation of the brochure-based health education intervention, respondents demonstrated considerable improvement in both respiratory health knowledge and respiratory coping practices. The educational brochure appeared to enhance participants' understanding of respiratory illnesses, preventive measures, proper respiratory hygiene, and appropriate health-seeking behaviors. As a result, respondents reported more favorable respiratory coping practices after exposure to the educational material.

The statistically significant improvement observed between the pretest and posttest scores suggested that brochure-based health education served as an effective educational strategy for promoting respiratory health among informal workers. Printed educational materials provided participants with simple, practical, and evidence-based information that could easily be reviewed and applied in their daily activities despite occupational and economic limitations.

The present findings were consistent with previous studies demonstrating the effectiveness of community-based health education in improving health knowledge and preventive behaviors. Educational interventions have been reported to increase awareness of respiratory disease prevention and encourage healthier behavioral practices among vulnerable populations. Likewise, brochure-based educational materials have been recognized as practical tools for disseminating health information because they provide concise, understandable, and accessible learning resources that individuals can repeatedly consult after the intervention.

The results also highlighted the potential role of brochure-based health education as a low-cost public health strategy for communities with limited access to formal healthcare services. Informal workers frequently experience prolonged exposure to environmental pollutants while facing financial and occupational barriers that limit access to preventive healthcare. Providing educational materials tailored to their occupational risks may therefore contribute to improved respiratory health literacy and encourage early adoption of preventive health behaviors.

Overall, the study provided empirical evidence supporting the integration of brochure-based health education into community respiratory health promotion programs. The findings suggested that simple educational interventions may complement existing public health initiatives aimed at reducing the burden of respiratory illnesses among workers exposed to environmental air pollution.

CONCLUSION

The study concluded that informal workers exposed to air pollution demonstrated inconsistent respiratory coping practices and limited respiratory health knowledge prior to the implementation of the brochure-based health education intervention. These findings indicated the need for accessible educational strategies to improve respiratory health awareness among vulnerable occupational groups.

Following the educational intervention, respondents exhibited significant improvements in both respiratory health knowledge and respiratory coping practices. The paired-samples t-test confirmed statistically significant differences between the pretest and posttest scores, demonstrating the effectiveness of the brochure-based health education intervention in enhancing participants' understanding of respiratory disease prevention and promoting healthier respiratory coping behaviors.

The findings supported the use of brochure-based health education as a practical, economical, and effective community health promotion strategy. The intervention successfully improved respiratory health literacy and encouraged the adoption of appropriate respiratory coping practices among informal workers exposed to air pollution in Sampaloc, Manila. These results provide evidence that printed educational materials may serve as valuable tools in community-based respiratory disease prevention programs, particularly for populations with limited access to formal health education and healthcare services.

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