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IMPACT OF COUNSELLING ON KNOWLEDGE AND ATTITUDE TOWARDS COMMUNITY-ACQUIRED PNEUMONIA IN THE GERIATRIC PATIENTS

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ABSTRACT

Backgrounds: Community-acquired pneumonia is a significant health problem in geriatric people because of atypical symptom presentation and less awareness of preventive strategies. Limited knowledge and poor attitudes in elderly people contributes to delayed diagnosis. The aim of the research is to evaluate the counselling effect on the knowledge and attitude of older individuals towards community acquired pneumonia that focuses on awareness of disease, risk perception and preventive practice.

Methods: A descriptive cross-sectional interventional study was led among 480 geriatric patients (>60 years). A pre-structured multiple-choice questionnaire was used to assess the baseline knowledge and attitude followed by 30-60 minutes counselling session. Post-intervention evaluation was done through same questionnaire.

Result: The study showed significant improvement in patient awareness cross all factors. Correct spotting of community acquired pneumonia were increased from 45.8% to 66.6%, bacterial etiology knowledge rose from 33.3% to 72.9% and risk factor recognition such as smoking increased from 26.2% to 80.4%. Moreover, vaccine awareness progressed from 55% to 94.5%.

Conclusion: The targeted counselling significantly increased the knowledge and adopts positive health attitude in older population regarding community acquired pneumonia. These findings assist integration of educational counselling into routine geriatric care to enhance early detection and preventive measures.

INTRODUCTION

Pneumonia is a prominent public health concern and a leading cause of morbidity and mortality, especially in older population. Community Acquired Pneumonia (CAP) is a pneumonia obtained outside the hospital or healthcare settings which is responsible for considerable proportion of admissions in hospitals which is responsible for increased hospital admissions proportions in older adults, predominately in low- and middle-income countries like India. According to World Health Organization (WHO), pneumonia remains one of the main infectious causes of death in older individuals(1). The elderly are more vulnerable to CAP because of age related physiological changes. The gradual weakening of immune system called Immunosenescence, decreases the ability of the body to rise effective immune response counter to pathogens(2). Furthermore, anatomical and functional alterations in lungs such as reduced mucociliary clearance and diminished cough reflex, impair mechanism of pulmonary defense(3).

Clinical presentation of pneumonia is atypical in elderly patients. But younger patient may exhibit with classic symptoms including productive cough, fever and chest pain, older adults may present non-specific symptoms like anorexia, confusion, fatigue or worsening present comorbidities(4). These atypical signs often lead to delayed diagnosis or misdiagnosis, under-treatment that results in poor outcomes such as prolonged recovery, hospitalization or even death6. Regardless of higher burden of CAP is on geriatrics, awareness about its risks, clinical presentations and prevention strategies stays inadequate in population(5). Research shows that notable proportion of older people are unaware of seriousness of pneumonia or the preventive measures such as pneumococcal and influenza vaccinations(6). Additionally, misunderstanding about the safety and efficiency of vaccines, lack of information about health and poor health literacy contribute to underutilization of preventive assistance(7).

Counselling and well-built health education have developed as vital tools in bridging awareness gap. Previous studies have shown that counselling patients can results in improved treatment compliance, better health-seeking behavior and increased acceptance of preventive measures, chiefly in vulnerable groups like elderly(8). Counselling not only educates patients about the nature and seriousness of disease but also authorize them to take proactive steps for prevention of disease and health maintenance when applied correctly.

The older population is drastically increasing due to rising life expectancy and decreasing birth rates in India, the burden of CAP

is expected to rise in upcoming years. A large proportion of geriatrics particularly in rural areas remain unaware of respiratory diseases, symptom or hesitate to get medical aid until the disease attains chronic stage. According to Longitudinal Aging Study in India (LISA), only a minority of geriatric individuals report ever receiving a pneumococcal or flu vaccine(9). This shortage of preventive healthcare engagement outlines pressing need for the targeted educational interventions that enhances influence behavior, awareness and eventually increases health outcomes(3). Recognizing these challenges, pharmacist and allied healthcare professionals are being seen as frontline agents in delivering targeted patient education. Pharmacy-based counselling is importantly well-positioned that act to fill this gap(10).

Recent researches examined the microbiology, epidemiology and clinical outcomes of CAP, effectiveness of health education and patient counselling interventions in enhancing knowledge and attitude especially in elderly patients which are mostly retrospective that highlights the need for prospective studies(6,8). This study was aimed to address the limitations by evaluating the impact of a structured counselling session on knowledge and attitude towards CAP in geriatrics6. Through assessing pre and post intervention responses to a structured questionnaire, this research focus on quantifying changes in awareness about pneumonia's definition, clinical presentation, risk factors (like poor hygiene and smoking) and preventive measured like vaccination.

MATERIALS AND METHODS:

Study design

Study design and setting: it is a cross-sectional, descriptive, interventional study conducted in a tertiary care hospital. Data collection was carried out in various departments including outpatient department and geriatric departments that cater older population.

Study population and sample size

The study included patients with 60 years of age and above who are considered to be at high risk for CAP due to age related factors and comorbidities. The RAO software was used to determine the sample size that suggested a minimum of 377 participants based on5% margin of error and 95% confidence level. The sample was extended up to 480 participants to ensure robust results and include dropouts or incomplete response.

Inclusion and exclusion criteria

Participants with over 60 years of age were included and were willing to participate in this research by providing consent. Individuals who exhibit cognitive impairment were excluded because of limitation in completion of the questionnaire. Additionally, the patients who declined to give consent or showed disinterest were excluded from the study.

Study procedure

Baseline assessment (pre-test): the participants were asked to fill the structured questionnaire built to evaluate their baseline knowledge and attitude towards CAP. The tool has ten multiple-choice-questions with five questions based on knowledge that includes causes, risk factors, symptoms and prevention. Another five questions related to attitudes like perception of severity, health seeking behavior and importance of vaccination. The correct answers were scored and documented for the comparison with post intervention assessment.

Counselling intervention: a structured one-on-one counselling session was given by trained pharmacy professionals followed by baseline evaluation. Each session lasted about 30 to 60 minutes and was tailored to suit the literacy level a cognitive capability of older individuals. The counselling covered key areas including nature of CAP, common symptoms and atypical presentations with importance of early diagnosis. Emphasized the preventive measures include hygiene and vaccinations (influenza and pneumococcal). Printed educational materials were provided to the patients in local language and encouraged interactive discussion to improve understanding and engagement.

Post interactive assessment: the same questionnaires were re-administered to the patients after counselling. This post-test was used to evaluate any change in their knowledge and attitude attributable to counselling intervention. The difference in response before and after counselling to find the effectiveness of the intervention.

Data analysis

Data were documented and assessed using Microsoft excel. Descriptive statistics of frequency and percentage were used to evaluate demographic variables and pattern of response. The comparison between pre- and post- intervention scores were done to find the directional impact of counselling session.

Ethical considerations

Ethical approval for the study was obtained from the Institutional Ethics Committee of J.K.K.N College of Pharmacy. The study objectives and methodology were briefly explained to each participant and written informed consent was obtained prior to participation. The study highlights confidentiality and assured that the patient's decision to participate or withdraw would not affect their healthcare service in any way.

RESULT:

Participants characteristics

a total of 480 participants were included in the study. The demographic distribution was equal between males (50%) and females (50%). The greater number of participants were resided in the urban areas (n=280, 58.3%) when compared to rural areas (n=200, 41.6%). The literacy level was varied but the highest number had no formal education (n=136, 28.3%), while lowest percentage pursued higher education (n=101, 21%). An equal number of participants reported a history of smoking (50%) and non-smoking status (50%). Only 160 participants (33.3%) had a history of pneumococcal or influenza vaccination that highlights a low baseline rate of preventive immunization in this population as in table 1.

Table 1: demographic details of participants (n=480).

VARIABLE	CATEGORY	FREQUENCY (N)	PERCENTAGE (%)
Gender	Male	240	50
	Female	240	50
Education level	None	136	28.3
	Primary	124	25.8
	Secondary	119	24.7
	Higher	101	21
Residence	Urban	280	58.3
	Rural	200	41.7
Smoking history	Smoker	240	50
	Non-smoker	240	50
Vaccination history	Vaccinated	160	33.3
	Non vaccinated	320	66.7

Knowledge-based outcomes

A substantial improvement was observed in the knowledge domain after counselling intervention. Before counselling, only 45.8% of patients correctly identified CAP as a lung infection and the number increased significantly (66.6%) after the counselling. Similarly, correct identification of *Streptococcus pneumoniae* as a common causing agent of CAP rose from 33.3% (n= 160) to 72.9% (n= 350) after counselling. Knowledge based on the clinical features of CAP improved distinctly. Prior to counselling, 30.4% (n= 146) recognized typical signs including cough, fever and shortness of breath in the older population. This increased to 79.1% (n= 380) following the counselling session. Lifestyle- related risk factors awareness also demonstrates notable enhancement, with 26.2% (n= 126) identifying smoking as a risk factor pre-intervention,

rising up to 80.4% (n= 386) post-intervention. Understanding the preventive strategies of CAP through vaccination improved considerably from 33.3% (n= 160) to 85.4% (n=410).

Attitude-based outcomes

Participants exhibit marked positive changes in health-related attitudes after counselling intervention. Initially, only 24.3% (n=117) accepted pneumonia as a serious risk condition in older people. The number increased to (n= 417) after counselling. Attitudinal recognition of the importance of vaccination improved from 28.3% (n=136) to 90% (n=432). Moreover, a notable shift was observed in health-seeking behavior: the proportion of individuals who indicated they would consult a physician upon experiencing CAP-related symptoms increased from 52% (n=250) to 88.5% (n=425). the efficacy of hygiene practice belief to prevent CAP raised from 36.9% (n= 174) to 90.4% (n=434). The number of participants willing to encourage others or family members over the age of 65 to get CAP related vaccination increased from 55% (n=265) to (n=454).

Table 2: knowledge and attitude scores before and after counselling.

Question No.	Question Summary	Correct Response (Pre)	%	Correct Response (Post)	%
Q1	Definition of CAP	220	45.8%	320	66.6%
Q2	Common causative bacteria	160	33.3%	350	72.9%
Q3	Typical symptom in elderly	146	30.4%	380	79.1%
Q4	Lifestyle risk factor (smoking)	126	26.2%	386	80.4%
Q5	Vaccine for CAP	160	33.3%	410	85.4%
Q6	Belief: Pneumonia is serious for elderly	117	24.3%	417	86.8%
Q7	Importance of vaccination	136	28.3%	432	90.0%
Q8	Seek doctor for symptoms	250	52.0%	425	88.5%
Q9	Hygiene prevents CAP	174	36.9%	434	90.4%
Q10	Encourage vaccination among peers	264	55.0%	454	94.5%

Comparative summary

Five knowledge-based and five attitude-based questionnaires in all ten assessment domains, there was a statistically meaningful and directionally consistent improvement in response of the participants after counselling session. The magnitude of improvement ranged from 20.8% to 61.2%, with the most significant increase observed in awareness of CAP symptoms, hygiene importance, benefits of vaccination and preventive measures. These research findings suggest that a single, structured, counselling intervention by pharmacist can considerably enhance both awareness and proactive attitudes towards prevention of CAP in older individuals.

DISCUSSION

The present study evaluated the effectiveness of a structured counselling intervention in improving knowledge and attitude regarding CAP among older people. The findings explain a considerable increase in both domains, suggesting that targeted educational strategies can enhance geriatric awareness and engagement in pneumonia prevention.

At baseline, participants exhibited poor knowledge about CAP, with less than half able to define the condition or recognize its bacterial causes correctly. These results are consistent with prior study indicating low health literacy and awareness in elder people, especially in low- and middle-income status(1,2). The low baseline awareness of preventive measures like vaccination (33.3%) in our study is concerning, given the established efficacy of pneumococcal and influenza vaccines in reducing incidence of pneumonia and its severity(3). Similar trends were seen in the studies conducted in other regions where vaccination was related with poor awareness and lack of counselling(4,5).

Post-intervention, the marked improvement across all parameters of knowledge conforms the value of pharmacist led counselling and structured questionnaires. Moreover, awareness about the vaccine uptake increased to 85.4% and understanding the risk factors like smoking improved to 80.4%. these results align with previous interventional studies where counselling sessions resulted in better understanding of pneumonia risk and preventive measures among older adults(6,7). The use of printed education materials, interactive discussions and culturally related communication in this research likely contributed to positive results.

Attitude related changes were equally noteworthy. Participants showed notable shift in perception regarding the seriousness of CAP, the importance of seeking yearly medical care and hygiene role in prevention. The number of individuals who are willing to recommend vaccination to others raised up from 55% to 94.5% indicating favorable peer education ripple effect. These improvement in attitude are in line with Health Belief Model, which recommends that increased perceived severity and benefits are strong predators of preventive health behaviors(8).

The practical implication of these results is substantial. Older people healthcare is still evolving and vaccination coverage stays suboptimal by integrating brief counselling sessions into routine healthcare visits could bridge critical knowledge gaps. Pharmacists are the first point of contact in the healthcare sector who are well positioned to deliver such intervention effectively and at scale. Additionally, empowering older population with knowledge can reduce delayed medical care seeking, improve compliance to preventive measures and potentially decrease CAP related hospitalization.

Despite the strengths, limitations like large sample size and structured intervention delivery warrant consideration. The absence of control groups limits our ability to attribute changes solely to counselling intervention. The use of one post-intervention assessment precludes long-term evolution of knowledge retention or change in behavior. Future studies could address these limitations by incorporating randomized control trial, long term follow-up and psychometrically recognized tools. It would also aid to explore digital or multimedia formats of counselling, particularly for reaching less literate or isolated older individuals.

CONCLUSION

The current research highlights the significant impact of structured counselling on upgrading knowledge and attitudes towards community-acquired pneumonia in older population. Baseline evaluations revealed substantial gaps in awareness with regard to the nature of the disease, risk factors, clinical presentation and prevention such as vaccination. There was a marked improvement across all evaluated parameters, in both knowledge and attitudinal areas following a single pharmacist led counselling session.

These findings underscore the value of encompassing brief, targeted educational intervention into geriatric health care services, especially in resource-limited settings where elderly populations are at high risk for CAP but may have narrow access to reliable information about the health. The role of pharmacists and primary healthcare providers in carrying such interventions should be further supported through training and inclusion in public health strategies. Integrating structured counselling into the routine care has the possible to upsurge disease awareness, encourage preventive practices and reduce the burden of pneumonia-based complications and hospitalizations among elder people. Future research should focus on long-term retention of knowledge, change in behavior and assessing the scalability of such interventions across diverse demographic settings.

REFERENCES

- 10.1016@s1473-30990200437-1.
- Liu S, Xu E, Liu Y, Xu Y, Wang J, Du J, et al. Factors associated with pneumococcal vaccination among an urban elderly population in China. Hum Vaccin Immunother. 2014 Oct 1;10(10):2994–9.

- Moberley S, Holden J, Tatham DP, Andrews RM. Vaccines for preventing pneumococcal infection in adults. Vol. 2013, Cochrane Database of Systematic Reviews. John Wiley and Sons Ltd; 2013.
- Jones CL, Jensen JD, Scherr CL, Brown NR, Christy K, Weaver J. The Health Belief Model as an Explanatory Framework in Communication Research: Exploring Parallel, Serial, and Moderated Mediation. Health Commun. 2015 Jun 3;30(6):566–76.
- Baig SA, Hassan M, Ahmed SM, Moazzam W, Inayat A. A cross-sectional study to investigate pneumococcal vaccination in the elderly in a low income county: Patient knowledge, awareness, and attitudes of vaccination and prevalence rates by socioeconomic status. Hum Vaccin Immunother. 2014 Apr 1;10(4):1024–7.
- Yoshikawa TT, Marrie TJ. SPECIAL SECTION: AGING AND INFECTIOUS DISEASES Community-Acquired Pneumonia in the Elderly [Internet]. Available from: http://cid.oxfordjournals.org/
- Waszkiewicz M, Wnuk K, Świtalski J, Augustynowicz A. Knowledge, attitudes, and beliefs of pharmacists regarding vaccinations against influenza and pneumococci - a systematic review. Vol. 21, Human vaccines & immunotherapeutics. 2025. p. 2489889.
- Zhang SS, Shi W, Du J, Zhang WX, Yuan M, Zhou Y, et al. Impact of propensity to COVID-19 vaccination/vaccine on influenza vaccination from willingness to behavior among older adults in rural China. Hum Vaccin Immunother. 2024;20(1).
- World health Organisation. pneumonia. 2023.
- Jain S, Self WH, Wunderink RG, Fakhran S, Balk R, Bramley AM, et al. Community-Acquired Pneumonia Requiring Hospitalization among U.S. Adults. New England Journal of Medicine. 2015 Jul 30;373(5):415–27.