



Association Of Illness Perception, Self Efficacy And Perceived Control Of Asthma Patients

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Abstract

The data of Indian Study on Epidemiology of Asthma, Respiratory Symptoms and Chronic Bronchitis in Adults estimated the national burden of asthma at 17.23 million with an overall prevalence of 2.05%. The recent Global Burden of Disease (GBD, 1990–2019) estimated the total burden of asthma in India as 34.3 million, accounting for 13.09% of the global burden. India has three times higher mortality and more than two times higher DALYs compared to the global proportion of asthma burden. The present research study investigates the association of illness perception, self efficacy and perceived control among Asthma patients. A cross sectional study was conducted in Raigarh district of Chhattisgarh and Bhopal City of Madhya Pradesh from 2021 to 2022. A sample comprises of 300 persons with Asthma was selected from private nursing home, clinics and Hospital of Raigarh and Bhopal City. Participants completed survey comprising the following measures: illness perception questionnaire-R, Self efficacy scale and Multidimensional health locus of control form C is used to assessing illness perception, self efficacy and locus of health control. Results of Multivariate analysis of Variance revealed significant differences for the measures of illness perception, self efficacy and perceived control on the age and gender differences. Overall findings of the research study reveals that illness perception, self efficacy and perceived control, both individually and in combination, have significant role to play in asthma self care behavior of the persons. Youth with poorly controlled and/or more severe and persistent asthma may be considered a group at high vulnerability for mental health problems. Management for pediatric asthma should include screening tools and counseling interventions to detect prevent and reduce the risk of mental health problems (Goodwin RD et al., 2013). Prevention of acute and chronic complications can have enormous effects on both health care expenditure and quality of life of the person having asthma. The psychological characteristics of asthmatic patients have an influence on symptoms' recognitions, daily management and disease outcomes. A screening of mental symptoms and psychological aspects that are known as associated to asthma, could lead to plan appropriate intervention to better control asthma and to improve the patient's well-being. Awareness programs related to psych-educational interventions that are effective during the course of the disease. It's essential to Provide necessary information to health care providers on how illness representation, self efficacy and perceived

control influence the outcome of Asthma self care management. Also breathing exercise, relaxation therapy will enhance the better condition of Asthmatic patients.

Keywords: Asthma, illness perception, self efficacy, perceived control.

Introduction

Asthma is a major non-communicable disease affecting both children and adults, and is the most common chronic disease among children. Asthma affected an estimated 262 million people in 2019 and caused 455 000 deaths. The prevalence of asthma varies widely among countries/ geographical regions and also within countries with different geographies and socioeconomic strata. Globally, asthma is ranked 16th among the leading causes of years lived with disability and 28th among the leading causes of burden of disease, as measured by disability-adjusted life years. Around 300 million people have asthma worldwide, and it is likely that by 2025 a further 100 million may be affected (Network GA, 2018). There is a large geographical variation in asthma prevalence, severity, and mortality. While asthma prevalence is higher in high income countries, most asthma-related mortality occurs in low-middle income countries (To T et al., 2012). Despite the advances in asthma treatment in recent decades, there are still gains to be made in terms of improving patient education, employing new diagnostic approaches, and implementing personalized case management.

Different research studies find out that an incomplete success of asthma treatment may depend on the presence and interaction of different causes related to the disease itself (i.e. triggers, co -morbidity), the treatment (i.e. inadequate treatment, inadequate inhaler device), the patient (i.e. socio-demographic factors, adherence, knowledge), the physician (i.e. lack of consciousness and familiarity about guidelines) (Braido F., 2013). Also different psychological factors play a basic role in daily asthma management. The ideas that the patient has regarding asthma, the impact of the disease on daily life, the subjective interpretation of symptoms, and therapeutic adherence can be significantly influenced by psychological aspects. Moreover, the presence of the disease itself may have an impact on patients' affective sphere, representing an obstacle to an optimal disease management. It is now recognized that asthma can influence mental health and vice versa (Wright RJ et al., 2002, Isenberg SA et al., 1992), and that a link exist between psychological functioning and level of asthma control (O'Byrne PM et al., 2013).

Most of the research findings revealed that Asthma has long been associated with symptoms of mood and anxiety disorders (Scott KM et al., 2007, Katon WJ et al., 2004) Available studies show that the prevalence of anxiety and depressive disorders is more elevated among asthma patients than in general population. However, the association of mental health problems with asthma severity is controversial. Few of the research studies have shown significantly higher level of anxiety and depression in patients with severe asthma as compared to those with milder disease, while other studies did not detect such differences (Delmas MC et al., 2011, Goodwin RD et al., 2011). Clinical data has shown that the presence of psychiatric and psychological symptoms is associated with increased severity of asthma symptomatology, health service use and costs, functional impairment and poorer asthma (Goodwin RD et al., 2013, Morrison K et al., 2002, Feldman JM et al., 2006, McCauley E et al., 2007 & Richardson LP et al., 2008).

Some of the findings of research shows that depression would be significantly worse among severe asthmatics as compared to those with less severe asthma, and lower levels of asthma control would explain the greater degree of depressive symptoms in severe asthma. Individuals with severe asthma showed more symptoms of depression than those with milder asthma, with the severe asthmatics who endorsed poor asthma control being at particularly heightened risk. Psychological morbidity seems to be associated with increases in asthma severity; routine screening for depression among patients with severe asthma may result in the opportunity to tailor patient-centered clinical asthma management efforts resulting in improved disease management and control (Goodwin RD et al., 2013).

Children and adolescents with symptomatic asthma are more likely to suffer from a wide range of mental health problems, compared to healthy children. The likelihood of mental health problems appears closely associated to asthma severity. Youth with poorly controlled and/or more severe and persistent asthma may be considered a group at high vulnerability for mental health problems. Management for pediatric asthma should include screening tools and counseling interventions to detect, prevent and reduce the risk of mental health problems (Goodwin RD et al., 2013).

Recent research shows the associations between illness perceptions and outcome in patients with asthma, with a range of respondents and caregivers, with varying degree of asthma severity, and in different settings of medical care. Asthma is determined not only by pulmonary function or other biomedical characteristics. An important determinant of asthma outcome is illness perceptions: patients' subjective beliefs and emotional responses to their illness. Illness perceptions influence patients' coping and self-management behavior, and thereby outcome. Most studies pertain to substantial numbers of patients, and have been performed in different countries, adding to the external validity of the findings. All studies report substantial effects of illness perceptions on various categories of outcome: illness perceptions reflecting personal control over the illness are associated with a positive outcome, that is, asthma control. Few research studies focused the importance and clinical relevance of addressing patients' illness perceptions, and suggest that this may improve outcome in asthma care.

The Bandura's theory of self-efficacy can be used to identify issues surrounding non-compliance in people with asthma and increase adherence to treatment interventions. Self-efficacy is an important component in the ability to manage asthma. High self-efficacy expectancies will result in better compliance towards self-management behaviors such as improved adherence to inhaled medications regimens. Self-efficacy is the belief that one can actually perform such behaviors and skills that are believed to help (Hanson, 1998). Scherer and Schmieder (1996) reasoned that enhancing patients' levels of confidence is associated with increasing perceived self-efficacy.

The locus of control refers to the individual own beliefs of control his /her illness and health. According to Rotter's social learning theory (Rotter, 1972) the patients with chronic diseases have 3 different styles of health and illness related locus of control, cognitions have been described, representing illness experiences and generalized expectancies to control the symptoms of disease (Perrin, 1985). Internal locus of control represents the belief that one's own behavior is regarded as important for one's state of health. This attitude is regarded as an essential precondition for active coping strategies both in patients with somatoform disorder and asthma. Powerful others externality means that powerful others, for example parents or physicians, are considered important for symptom control. This concept triggers the help-seeking behavior of patients. Patients with chance health locus of control beliefs are convinced that

their health status is influenced by fate, luck, or random events. Chance expectations are considered maladaptive in both somatoform disorder and asthma because of the associated passive patient behaviour (Schmitt, 1989; Goldbeck 2007). Studies showed that poorer health outcomes are associated with avoidant or maladaptive coping strategies and an external locus of control (Alto, 2001; Petrosky, 1991; Maes, 1987).

Asthma specialists suggest that focus on the behavioral factors that influence compliance to self-management of asthma could prevent deaths. Because there is no cure for asthma, the role of the nurse practitioner is a multifaceted one and an ongoing process surrounding prompt response to acute exacerbation and control of chronic symptoms to prevent respiratory limitations and demise. The role of the nurse practitioner is to individualize an intervention program for clients with asthma focusing on raising self-efficacy expectations that can increase compliance. High levels of self-efficacy expectations are also associated with decreased symptoms, increased adherence to treatment, and increased self-care behaviors. One way to achieve behavioral changes is by increasing the patient's general and asthma specific self-efficacy expectancies (van der Palen, 1997).

Research Question

1. What are the effect of age (youth and adult) on illness perception, self efficacy and perceived control in Asthma patients?

Hypothesis

1. Illness perception, self efficacy and perceived control will be significantly different between youth and adult people with Asthma.

Methodology

Sample: This study was cross sectional the data was collected from the private clinics and nursing homes of Raigarh, Chhattisgarh, and Bhopal City heart of India, Madhya Pradesh from 2021 to 2022. Total sample comprises of 300 people with Asthma. 300 patients with confirmed diagnosis of Asthma were invited to participate in the study. After explaining the motive of the study they were requested to complete the research questionnaire. We are also assuring them their information's are kept confidential and it is only used for the research and academic purpose. Written consent was taken before the collection of data. Sociodemographic (age, gender, educational qualification, marital status, residence and family type etc) and Bio-medical (duration of illness, history of asthma, severity of disease etc) information's are also collected for study.

Measure /Tools

- 1. Illness Perception Questionnaire:** Illness perception was assessed by using of the Brief illness perception questionnaire (B-IPQ) Broadbent E, et.al. 2006). It measures patient cognitive and emotional representation of their illness, including consequences, timeline personal control, identity, illness comprehensibility, concern and emotion using a single item approach to assess perception on a continuous scale from 0-10.
- 2. AASEQ:** The AASEQ is a reliable and valid tool to use with adolescents with asthma it is developed by Simone Holley et al, 2019.
- 3. Multi Dimensional health locus of Control scale:** This scale is developed by Ken Wallston et al. (MHLC; Wallston, Wallston, & DeVellis, 1978; Wallston, Stein, Smith, 1994). In this study, form C is used. It is an 18 items, condition specific Likert scale with subscales: Internal, chance, powerful others and doctors.

Research Design

In order to examine the relationships of different measure, a cross sectional multivariate design was used. Multivariate analysis of variance (MANOVA) was used to see the significant relationship between multiple variables (illness perception with their dimensions, Self efficacy and locus of control) on the bases of age. Mean and % was calculated for the Socio-demographic and Biomedical Variables.

Procedure

Different private nursing home and clinics of Raigarh and Bhopal city were listed. Then the permission was taken from the owner of Nursing Homes and Private clinics. After those participants having asthma were selected on their report and symptoms, then consent was taken from them. In a quiet place sitting arrangement was done and good rapport was established to collect the required information related to the research work. All necessary instruction and guidelines were provided to them for properly responding to the questionnaire. The purpose of the study was explained and participants were assured that their responses will be kept confidential and will be used for research and academic purpose only. After this, question were asked to them and requested to give answer as per the instructions given to them. After that we thanks to participants for heartily cooperation to complete their questionnaire. All other necessary information regarding participants was also collected from Clinic staff and clinics record book. Also pay our gratitude to Hospital staff for their kind support and essential guidelines for this research studies.

Data Analysis

As the present study was a cross sectional, multivariate in nature, multivariate statistical method has been used. Descriptive statistic was used to characterize the Socio and bio-demographic variables for this sample included age, gender, educational qualification, family type, residence, duration of illness, severity of illness etc. Mean, SD and multivariate analysis of variance (MANOVA) F value were determined.

Ethics

Written consent was taken from the Asthma Patients

Table 1 represents the socio and bio-demographic characteristics of patient with asthma. Age wise 40% of youth and 60% Adult having asthma. Male and female wise % had the same. Educational qualification wise 9.3% persons passed higher secondary, 57.33% graduates, 19.33% are post graduate and others 14%. Marital status wise 44% single and 56 % were married. If we seen the family type in nuclear family % is high i.e. 70.3 and in joint family the % is low. On the bases of residence it shows that Asthma patients found more in Urban and semi-urban areas in comparison to rural areas. There is also wide difference in illness severity and family history wise 47.67% had family history and severity wise 52.67% had chronic symptoms of Asthma.

Table -1
Characteristics of Participants

	N (300)	Percentage (%)
Age		
16-24	120	40
25-45	180	60
Gender		
Male	150	50
Female	150	50
Educational Qualification		
Higher Secondary	28	9.3
Graduate	172	57.33
Post Graduate	58	19.33
Others	42	14
Marital Status		
Single	132	44
Married	168	56
Family Type		
Nuclear	211	70.3
Joint	89	29.67
Residence		
Rural	38	12.67
Semi Urban	132	44
Urban	130	43.33
Duration of Illness (years)		
1 -2 years	128	42.67
3 to 5 years	139	46.33
6+	33	11
Family History of Disease		
Yes	143	47.67
No	157	52.33
Severity		
Chronic	158	52.67
Acute	142	47.33

Table -2 Age group differences on the measures of illness perception, self efficacy and Perceived Control

Variables	Age group in years		F(1,298)	r^2	
	15 -24 (n=120) (Youth)	25 -45 (n=180) (Adult)			
Illness Perception					
Consequences	M	3.68	3.49	7.03**	0.03
	SD	0.50	0.70		
Timeline	M	3.43	3.01	29.17**	0.09
	SD	0.57	0.76		
Personal Control	M	3.26	3.43	29.23**	0.09
	SD	0.88	0.57		
Treatment Control	M	3.42	3.27	7.48**	0.02
	SD	0.48	0.56		
Identity	M	0.57	0.62	0.34	0.00
	SD	0.16	0.18		
Illness concern	M	3.43	3.00	29.17**	0.09
	SD	0.57	0.77		
Comprehensibility	M	3.14	3.15	0.06	0.00
	SD	0.50	0.51		
Emotions	M	3.48	3.20	7.65**	0.03
	SD	0.71	0.88		
Self Efficacy					
Friend Family and school	M	2.68	2.43	11.98**	0.05
	SD	0.61	0.64		
Symptom Management	M	2.69	2.34	15.20**	0.06
	SD	0.78	0.77		
Asthma Belief	M	3.43	3.00	29.17**	0.09
	SD	0.57	0.77		
Medication	M	2.47	2.31	7.05**	0.02
	SD	0.52	0.50		
Health and locus of Control					
Internal	M	3.24	2.93	19.63**	0.07
	SD	0.60	0.63		
Chance	M	3.83	3.60	11.12**	0.05
	SD	0.49	0.62		
Powerful others	M	3.30	2.93	29.28**	0.09
	SD	0.54	0.65		
Doctors	M	3.43	3.00	29.17**	0.09
	SD	0.57	0.77		
Other People	M	3.27	3.19	1.30	0.00
	SD	0.61	0.59		

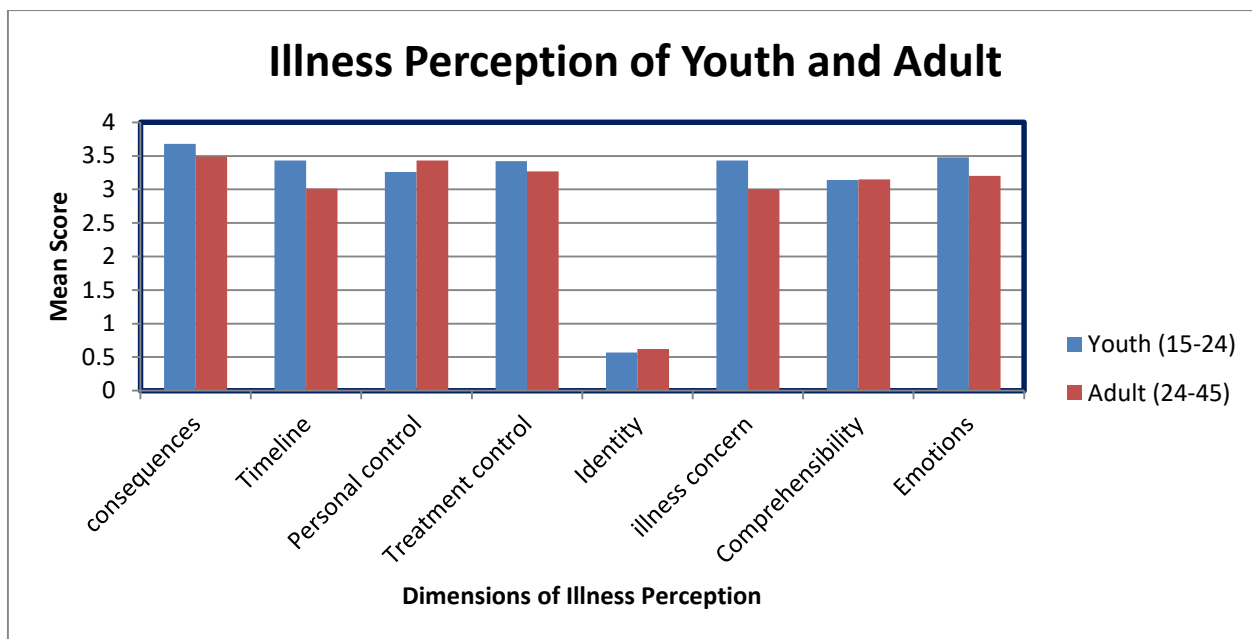


Figure 1 a. Illness perception of youth and Adult

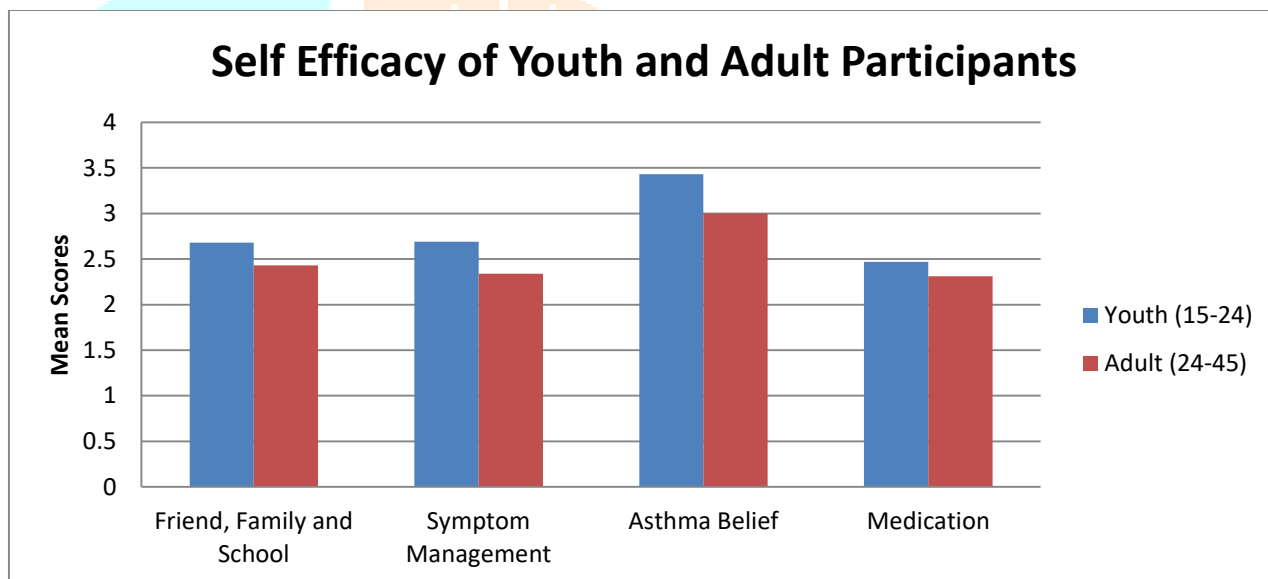


Figure 1 (b) Self efficacy of youth and Adult Participants

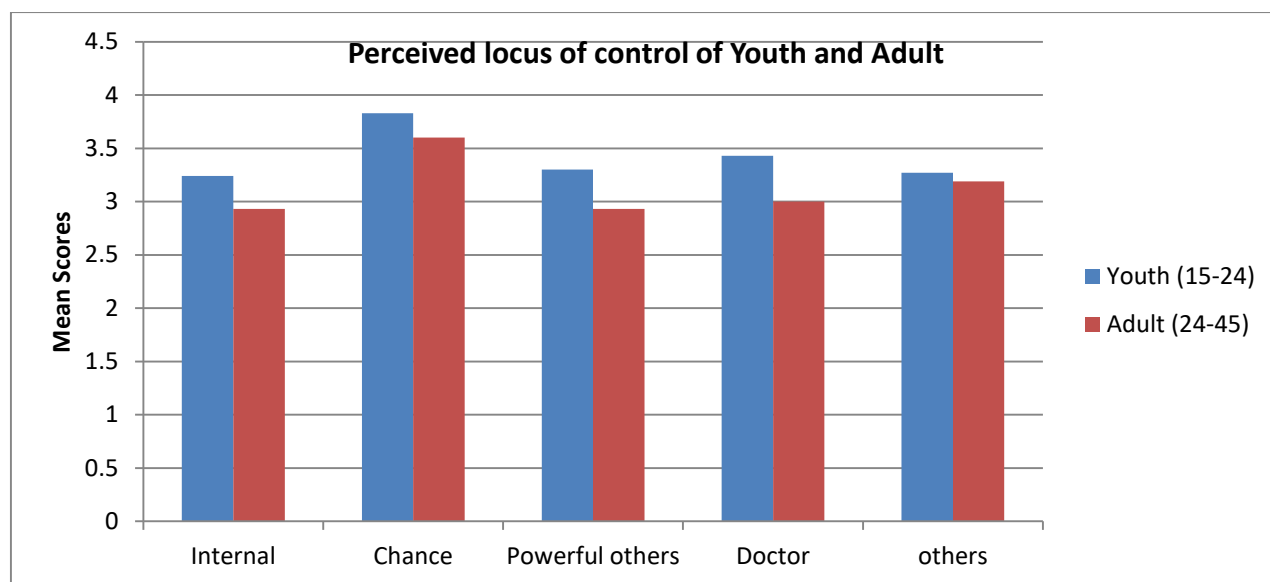


Figure 1 (c) Perceived locus of control of youth and Adult Participants

The results revealed that the Multivariate analysis of variance (MANOVA) for illness perception score of youth and adult age group of participants of Asthma. Table 2 revealed a Wilk's lambda of 0.88 for illness perception, self efficacy and perceived control among youth and adult. Result present in table 2 revealed Wilk's Lambda of 0.88 for illness perception is statistically significant $F(8,298)= 5.02, P<0.01, \eta^2 = 0.03$. Individual F value for different measures of illness perception showed significant difference between mean scores of youth and adult participants for Consequences, $F(1,298)=7.03, P<.01, \eta^2 = 0.03$ time line received $F(2,298)= 29.17, P<.01, \eta^2 = 0.09$, Personal Control $F(1,298) = 29.23, P < .01, \eta^2 = 0.09$, Treatment control, $F(1,298)=7.48, P<.01, \eta^2 = 0.02$, illness concern, $F(1,298)=29.17, P<.01, \eta^2 = 0.09$ Emotions $F(1,298)=7.65, P<.01, \eta^2 = 0.03$. Mean scores clearly indicate that youth participants had higher mean in Consequence (youth =3.68, Adult=3.49). in timeline mean score had found higher in youth (M=3.43) in compare to adult (M=3.01) as the same way we can see in treatment control, illness concern and emotions.

Result of multivariate analysis of variance (MANOVA) for different measures of self efficacy table 2 indicated Wilk's lambda of 0.87 as significant, $F(4,295)=7.98, P<0.01, \eta^2 = 0.16$. Between group differences between mean self efficacy scores of youth and adult participants were significant for Friend family and school $F(1,298)=11.98, p.01, \eta^2 = 0.05$. Symptom management, $F(1,298)=15.20, p<.01, \eta^2 = 0.06$. Asthma Belief, $F(1,298)=29.17, \eta^2 = 0.09$, Medication, $F(1,298)=7.05, p<.01, \eta^2 = 0.02$, Mean scores presented in table 2 and graphically displayed in figure 1 (b) show that youth participants had consistently higher mean scores than the adult participants on different aspects of health related self efficacy as well as on the measures of symptom management, and confidence in Asthma self care. This shows that youth participants had higher health related as well as asthma specific self efficacy in comparison to adult participants.

In regard to the gender difference on various aspects of locus of control, result of MANOVA revealed a statistically significant on Wilk's Lambda of 0.87 as statistically significant, $F(5,294) =8.89, P<0.01, \eta^2 = 0.14$. Difference between the mean scores of youth and adult participants were found significant for Internal, $F(1,298)=19.63, p<.01, \eta^2 = 0.07$, Chance, $F(1,298)=11.22, p<.01, \eta^2 = 0.05$, powerful others, $F(1,298)=29.28, p<.01, \eta^2 = 0.09$, Doctors, $F(1,298)=29.17, p<.01, \eta^2 = 0.09$. Youth participants have shown

higher on internal, chance, and powerful and doctors on the locus of control in compare to the adult. The difference between mean score on other was not found statistically significant ($p < .05$). The same thing can be depicted in figure 1(c).

Result of multivariate analysis of variance F for the measures of illness perception, self efficacy and perceived control as well as a large number of F values provide sufficient ground for proving this hypothesis that youth and adult participants will differ significantly on the measures of illness perception, self efficacy and perceived control.

Conclusion

The psychological characteristics of asthmatic patients and the presence of mental problems have been shown to be linked to both asthma severity and level of disease control. The age is important aspect that affects the illness perception, self efficacy and perceived control in the management of Asthma. Youth with poorly controlled and/or more severe and persistent asthma may be considered a group at high vulnerability for mental health problems. Management for pediatric asthma should include screening tools and counseling interventions to detect, prevent and reduce the risk of mental health problems (Goodwin RD et al., 2013). Difficulties in achieving the objectives of asthma therapy suggested by current guidelines may depend also on psychological factors such as symptoms' perception, alexithymia, coping strategies, mood disorders. Despite numerous data support this association, a causal relationship between asthma and mental health is not clear. The hypothesis of a bidirectional influence seems to be more acceptable. Independently of the nature of this association, when a psychological problem or difficulty is present, it interferes with an optimal disease management, especially in patients with severe asthma and poor control. At the same time, the psychological characteristics of asthmatic patients have an influence on symptoms' recognitions, daily management and disease outcomes. A screening of mental symptoms and psychological aspects that are known as associated to asthma, could lead to plan appropriate intervention to better control asthma and to improve the patient's well-being.

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