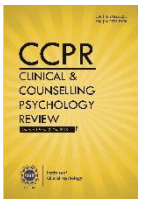

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Author(s): Seerat Shaikh

Umm E Rubab Kazmi

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Quality of Life, Resilience and Depression among Adolescents with Asthma

Seerat Shaikh and Umm E Rubab Kazmi*

Department of Applied Psychology,
Lahore College for Women University (LCWU), Pakistan

Abstract

The current study aims to explore the relationship between quality of life (QoL), resilience and depression among adolescents with and without asthma. Cross-sectional research design was used. Purposive sampling technique was used to collect data from 200 adolescents (with asthma = 100, without asthma = 100) from government and private hospitals and schools. Children and Youth Resilience Measure Scale (CYRM) was translated into the Urdu language. The available Urdu versions of Kutcher Adolescent Depression Scale (KADS) (Khan, 2014) and World Health Organization Quality of Life- BREF Scale (WHOQOL- BREF) (Khalid & Kausar, 2008) were administered on participants along with CYRM and demographic sheet. Descriptive statistics, *t*-test and correlation were used for statistical analysis. Findings revealed a negative correlation between resilience and depression (r=-.61**). Moreover, there was found a significant positive relationship between resilience and health related quality of life (r=.80**). Also, there were significant mean differences between adolescents with and without asthma regarding all study variables. Gender differences were also found for resilience and QoL in adolescents with asthma but no significant gender differences were found for depression. This study explored the differences between two groups (adolescents with and without asthma) regarding QoL, resilience and depression and it will be helpful for school counselors to devise self-esteem building measures and resilience training programs for the well- being of students.

Keywords: asthma, depression, quality of life (QoL), resilience

Introduction

In USA, asthma is among the most common childhood diseases (Bloom, Jones, & Freeman, 2013). Asthma is a chronic inflammatory disease of airways that is associated with social and medical morbidity (Lang, Butz, Duggan, & Serwint, 2004). It affects 1 out of 10 children per year (Mooreman et al., 2012). Asthma prevalence in the US reportedly ranges between 4.6-9.3% (Akinbami, Moorman, Garbe, & Sondik, 2009; Akinbami, Moorman, & Liu, 2011; Bloom et al., 2013). Asthma affects the psychological, physical and social well-being of an individual.

*Corresponding author: kazmi_rubab@yahoo.com

Its severity was found to be significantly associated with poor QoL (Everhart & Fiese, 2009). Another research reported that the severity of asthma significantly predicts QoL. People suffering from asthma generally report a more compromised QoL as compared to healthy people (Manion & Velser, 2017). QoL among Turkish individuals (N=305) with asthma (7-17 years) was assessed in a research study. The results showed that the severity of asthma, allergic rhinitis and the use of steroids were strongly and negatively associated with the overall QoL. About 51% of participants stated that asthma had a strong impact on their lives (Boran, Tokuc, Pisgin, & Oktem, 2008). Moreover, the results of a recent study indicate that asthma affects all domains (emotion, symptoms and activity) of QoL (Shetty, Rao, Soans, & Sriyan, 2016). Minimum to moderate impairment in QoL was seen in children and adults (Annett, Bender, Lapidus, Duhamel, & Lincoln, 2001; Luskin et al., 2014; Okelo et al., 2004).

Adolescents with asthma are at the risk of developing symptoms of depression and anxiety (McQuaid, Kopel, & Nassau, 2001; Ortega, Huertas, Canino, Ramirez, & Rubio, 2002; Peters & Fritz, 2010; Vila, Nollet, de Blic, Mouren, & Scheinmann, 2000; Wamboldt, Fritz, Mansll, McQuaid, & Klein, 1998). About 20-50% of adolescents with asthma report symptoms of depression (Naimi & Apter, 2010). The prevalence of depression among adolescents with asthma at 27% is twice as much as compared to healthy adolescents (Lu et al., 2012). Also, increased negative mood is significantly associated with increased asthma symptoms and school absenteeism (Bender & Zhang, 2008). Another research revealed that asthma is significantly associated with increased symptoms of depression among adolescents and young adults (Ferro et al., 2016).

It was also revealed that higher adaptability is significantly associated with the positive management of asthma (Mitchell, Murdock, & McQuaid, 2004). Resilience includes behavioral adaptation which affects well-being and effective functioning (Masten, Best, & Garmezy, 1990). It also includes successful adaptation to the situation despite prevailing adversities (Hauser, 2000). It is evident from research that resilient youth report less asthmatic symptoms (self-reported symptoms) and less life-time health issues as compared to less resilient youth, which means that people with higher resilience report better physical health as compared to people with lower level of resilience (Hopkins, Shepherd, Taylor & Zubrick, 2015). Buckner et al. (2005) devised interventions based on resilience to improve health outcomes among adolescents with asthma. These included the education related to asthma management, promoting asthma management behavior and the strengthening of individuals. All these strategies help to foster resilience

which ultimately has a positive impact on health outcomes among adolescents with asthma.

This research aims to explore a unique combination of the above mentioned factors and their effects on adolescents with and without asthma in the context of Pakistan.

Objectives of the Study

- To find out the relationship among QoL, resilience and depression in adolescents with asthma.
- To explore the mean differences in resilience, QoL and depression among adolescents with and without asthma.
- To find out gender differences for depression, resilience and QoL among adolescents with asthma.

Hypotheses

- There would be a negative relationship between depression and QoL and a positive relationship between resilience and QoL in adolescents with asthma.
- Adolescents with asthma would have poor QoL, less resilience and experience more depression as compared to adolescents without asthma (control group).
- There would be gender differences on QoL, resilience and depression in adolescents with asthma.

Method

Research Design

Cross-sectional research design was used to investigate the role of the above mentioned variables in adolescents suffering from asthma and in healthy adolescents (who were not suffering from asthma).

Participants

The sample comprised 200 adolescents within the age range of 13-16 years (*M*= 14.48, *SD*=1.19). 100 asthmatic adolescents (50 girls and 50 boys) were selected from government and private hospitals and 100 healthy adolescents (50= girls and 50= boys), who were not suffering from asthma, were selected from schools as control group to make the comparison. Adolescents with mild (26%), moderate (41%) and severe asthma (33%) (as diagnosed by their physician) were included. The duration of disease was classified into two categories, that is, less than 5 years (59%) and less than 8 years (41%).

Instruments

The following measures were used in this study:

World Health Organization Quality of life- BREF Scale

A 26-item scale was originally developed by World Health Organization (2016) to examine QoL. It has four subscales covering physical, psychological, social relationships and the environment respectively and two additional items for assessing general health. The score on each subscale is rated in a positive direction (high score shows high QoL). The psychometric properties of WHOQOL- BREF scale demonstrate significant internal consistency. All the four subscales of this scale have Cronbach's alpha values between .66-.84. The Urdu version of the WHOQOL- scale translated by Khalid and Kausar (2008) was used in this study.

Children and Youth Resilience Measure Scale

CYRM was translated into the Urdu language through forward and backward translation method (Newman, 2006). This scale was originally developed by Ungar and Liebenberg (2009) to measure resilience among youth. It has four domains labelled as individual, relational, community and cultural, respectively. Every item is scored on a 5-point response scale. Higher score shows higher resilience. This scale has three subscales including individual, relationship with primary caregivers and contextual factors that facilitate the sense of association or acceptance. Cronbach's alpha coefficient of this scale ranged from .77 to .83. CYRM-28 Urdu was validated with a sample of 1251 youth from Punjab, Pakistan. Its test- retest reliability was .92.

Kutcher Adolescent Depression Scale

KADS was developed by Le Blanc, Almudevar, Brooks, and Kutcher (2002) to assess depression among adolescents. The Urdu version of this scale, translated by Khan (2014), was used to assess depression among adolescents suffering from asthma. This scale helps to identify depression in individuals within the age range of 12-22 years. It consists of 6 items. These items are rated using a 4-point Likert scale (0- Hardly ever, to 3- All of the time). The last item of the scale addresses suicidal risk. Its internal consistency is .80.

Procedure

Firstly, the departmental ethical committee and board of studies approved the suggested research. Afterwards, permission for data collection was sought from the Department of Applied Psychology, Lahore College for Women. Permission for using the above mentioned scales in the current study was sought from the respective authors. Later on, permission from the authorities of schools and

hospitals was taken. The doctors of the concerned department were asked to refer diagnosed asthmatic adolescents. The purpose or aim of the current research was briefed to the participants and their parents (only from hospitals) and after taking their consent, they were administered the demographic sheet along with the scales. Similarly, data from healthy adolescents, who were not suffering from asthma, were gathered from different government and private schools. Class teachers were requested to refer students on the basis of their general health and regularity in school. Confidentiality of the data was assured and maintained. Later on, the researcher thanked the participants. Descriptive statistics, correlation, regression and *t*-test were performed on the data.

Results

Table 1

Reliability Analysis of Scales (N=200)

Variables	*k*	*a*	*M*	*SD*
CYRM	28	.90	119.49	11.42
Individual	11	.83	45.47	5.46
Caregiver	7	.70	31.20	2.81
Context	10	.77	42.81	4.39
KADS	6	.70	2.69	2.11
Quality of life	26	.94	97.80	13.11
General Health	2	.70	7.62	1.39
Physical Health	7	.91	25.98	4.67
Psychological Health	6	.80	24.19	3.23
Social Relationships	3	.70	12.55	1.40
Environment	8	.83	27.45	4.30

Note. CYRM=Child Youth Resilience Measure; KADS=Kutcher Adolescent Depression Scale

Table 1 shows that all scales along with their subscales have significant alpha coefficients which depicts the internal consistency of all measures.

Table 2

Correlation between Resilience, Depression and QoL (N=200)

Variables	1	2	3
Resilience	-		
Depression	-.61***	-	
HR QoL	.80***	-.70***	-

***p<0.01

Table 3

Mean Differences of all Study Variables between Adolescents with and without Asthma (N=200)

Variables	With Asthma(N=100)		Without Asthma (N=100)				CI		
	M	SD	M	SD	t(198)	p	LL	UL	Cohen`s d
Resilience	112.33	10.56	126.65	6.85	11.36	.000	11.83	16.80	1.60
Depression	4.39	1.51	1.00	.94	-19.04	.000	-3.74	-3.03	2.69
QoL	87.58	9.31	108.02	6.94	17.59	.000	18.14	22.73	2.48

Note. CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit

Table 4

Gender Differences among Adolescents with Asthma regarding Resilience, Depression and HRQoL (N=100)

	Boys (N=50)		Girls (N=50)				CI		
Variables	M	SD	M	SD	t(98)	P	LL	UL	Cohen`s d
Resilience	115.32	8.43	109.34	11.67	2.93	.004	1.93	10.02	0.58
Depression	4.24	1.07	4.54	1.84	-.99	.32	-.90	.30	0.19
HRQoL	91.64	7.58	83.52	9.17	4.82	.000	1.62	11.46	0.96

Note. CI = Confidence Interval, LL = Lower Limit, UL = Upper Limit

Table 2 shows that there is a significant negative correlation between resilience and depression and a significant positive correlation between resilience and QoL. Depression has a significant negative correlation with QoL ($p<0.01$).

Table 3 indicates that there are significant mean differences between adolescents with asthma and adolescents without asthma regarding all study variables. Adolescents without asthma were found to have more resilience and better QoL as compared to adolescents with asthma. Adolescents with asthma were found to be more depressed than adolescents without asthma.

Table 4 shows that there is a significant difference between girls and boys with asthma regarding resilience and health related quality of life. Adolescent boys were found to be more resilient and had better QoL than adolescent girls. However, there were non-significant differences between adolescent boys and girls regarding depression.

Another analysis was done regarding gender differences among adolescents without asthma. The results showed that there were no significant differences between girls and boys in the domains of resilience (M=126.82, SD=6.05, M=126.48, SD=7.63), depression (M=1.16, SD=.911, M=.84, SD=.95) and QoL (M=109.18, SD=6.71, M=106.86).

Discussion

This study aimed to explore the relationship between QoL, resilience and depression among adolescents with and without asthma. The reliability of scales was analyzed which revealed that all scales had significantly high internal consistency. The results also showed the mean (M) and standard deviation (SD) of scales utilized in the current study. CYRM (resilience) had M=119.49 and SD=11.42, KADS (depression) had M=2.69 and SD=2.11, and the QoL scale had M=97.80 and SD=13.11, respectively.

The first hypothesis “There is a negative correlation between depression and QoL and a positive correlation between resilience and QoL in adolescents with asthma” was accepted since the results showed that there was a significant negative correlation between QoL and depression and a positive correlation between resilience and QoL. This finding coincides with the literature which reveals that more resilient youth have good physical health as they reported fewer health issues as compared to less resilient youth (Hopkins et al., 2015).

The second hypothesis “Adolescents with asthma have poor QoL as compared to non-asthmatic adolescents (control group)” was accepted since the results showed that QoL among adolescents without asthma was much better than

adolescents with asthma. The mean scores of adolescents without asthma showed that they had comparatively good QoL as compared to adolescents with asthma. Previous researches also showed the same results (Manion & Velser, 2017). Another research was conducted to explore QoL in adolescents with and without asthma and its results revealed that QoL related scores of asthmatic adolescents were worse than non-asthmatic adolescents (Ayuk, Oguonu, Ikefuna, & Ibe, 2013).

The third hypothesis was "There are gender differences regarding QoL, resilience and depression in adolescents with asthma." The findings revealed that there were significant mean differences with respect to QoL and resilience among adolescents with asthma across gender. The findings of the research are supported by some previous studies (Ayuk et al., 2013; Sundell, Bergstrom, Hedlin, Ygge & Tunsater, 2010; Warschburger et al., 2004). However, no significant gender differences were found in depression scores of adolescent girls and boys.

Limitations and Recommendations

The current study has the following limitations and also makes some recommendations for the future:

- The participants of the current study were selected only from the city of Lahore. So, the findings of the study cannot be generalized.
- Sample size was small due to the lack of access to adolescents with asthma in hospitals.
- The study required collecting data from adolescents without asthma (healthy adolescents) from an equal number of government and private schools but the authorities of some government schools refused to permit the collection of data because of security issues.
- Longitudinal research design may be used to study adolescents over a given period of time to observe changes in their level of resilience and depression.
- The participants included in the study were adolescents studying in 7^{th}, 8^{th}, 9^{th}, and 10^{th} class and within the age range of 13-16 years.
- In future researches, participants in their early, middle and late adolescent age may be compared with each other.

Conclusion

The current study revealed that all the three variables, that is, QoL, resilience and depression among adolescents with and without asthma were significantly correlated with each other. A significant mean difference was found in the scores obtained by adolescents with and without asthma regarding all study variables. The current study also revealed gender differences among adolescents with asthma.

There is a dire need to introduce health care policies and programs for individuals with asthma so that their quality of life may be improved.

Implications

This research makes a significant contribution in revealing the role of QoL, depression and resilience among adolescents with and without asthma. This study will be helpful for health care providers to promote efficient asthma management and enhanced asthma control. This study will also be helpful for school counselors to devise self-esteem building measures and resilience training programs for the well-being of students.

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