Assessment of Northern Jordanian adolescents’ knowledge and attitudes towards asthma


Abstract

Background Asthma is a chronic illness of the airways that can cause a persistent cough. The illness affects a significant population of young people worldwide and can affect their ongoing quality of life.

Aim To explore Jordanian adolescents’ knowledge and attitudes to asthma.

Method A cross-sectional research design was used with a convenience sample of 302 adolescents from six schools in northern Jordan, who completed a self-reported knowledge and attitude survey.

Results Although the adolescents had an adequate knowledge level about asthma, several areas of knowledge deficit were identified and some negative attitudes were demonstrated. No significant association was found between adolescents’ level of knowledge and their attitudes to adolescents with asthma.

Conclusion Jordanian adolescents need more educational programmes about living with life-changing chronic illnesses such as asthma, and about how the knowledge and positive attitudes of peer groups can normalise the illness for the affected person, enhancing their quality of life.

Keywords

adolescents, asthma, child health, knowledge, respiratory system, school nursing

ASTHMA AFFECTS a significant number of young people worldwide. In Jordan, approximately 10% of adolescents younger than 18 years have asthma (Al-Ahmad 2010). Asthma can place significant restrictions on a young person’s daily activities, decreasing rates of school attendance which, in turn, influences educational outcomes and social development (Woodruff et al 2004, Cicuttto et al 2005). Young people with asthma also have higher rates of symptoms of emotional distress, anxiety, depression and poor self-image, all of which significantly affect their quality of life (Praena Crespo et al 2012, Sokoluk et al 2013).

Literature review

Jordanian adolescents living with asthma are reported to have a reduced quality of life and to feel more worried, frustrated, frightened and uncomfortable with their illness than those with asthma living in more developed countries (Al-Akour and Khader 2008). These negative consequences are important to psychosocial development in an already challenging stage of the life cycle (Arnett 2013, Shaffer and Kipp 2013). Dealing with the pressures of adolescence may cause many young people with asthma to ignore or deny their illness and in some situations to engage in risk-taking behaviours, such as smoking, to feel accepted by their peers (Arnett 2013, Shaffer and Kipp 2013).

Although there is general agreement about the difficulty of adolescents managing their asthma, there is a paucity of data available to substantiate why this difficulty occurs (Couriel 2003). Asthma among adolescents has received less attention in global literature than the condition in other age groups (Cohen et al 2003, Rhee et al 2007).

An effective strategy for improving adolescents’ health is to increase their health literacy, normalise the illness with their peers and decrease negative attitudes to asthma in the community (DeWalt and Hink 2009, Ngoh 2009). Negative attitudes and poor knowledge of asthma treatment among young people may lead to increased non-adherence to medication and an increase in incidence of hospitalisation (Wamboldt et al 2011).

Several positive health outcomes as a result of adolescents’ increased level of knowledge have been identified and include having...
greater control of the management of their condition, improved recognition of signs and symptoms and problem-solving in relation to important signs and symptoms (Bowen 2013), less absenteeism from school and fewer urgent healthcare visits (Runge et al 2006, Cicotto et al 2013).

One Jordanian study reported that expanding adolescents’ knowledge of asthma significantly improved their health-related quality of life, self-efficacy to resist smoking and knowledge of asthma self-management, compared with a control group (Al-sheyab et al 2012).

In Jordan, there are a limited number of studies on asthma (Al-Motlaq 2009) and few health education programmes on asthma available for adolescents (Al-sheyab et al 2012). This research aims to address this deficit.

**Aim**
To collect data on Jordanian adolescents’ knowledge level and attitudes to asthma.

**Method**
A cross-sectional study was used because it is inexpensive and provides a snapshot of the phenomena under study at a fixed point in time (Loiselle et al 2010).

**Participants**
A convenience sample of 302 students was asked to complete a self-reported survey. Inclusion criteria for the study were: being enrolled at the selected study schools, being aged between 13 and 17 years, consenting themselves and having parental consent to participate in the research, and committing to spend 20 minutes completing the survey.

**Data collection**
A cross-sectional study was conducted in six secondary schools in the northern region of Jordan. The researchers explained the purpose of the research to the school staff who, in turn, explained it to the students. This initiative was supported at school level as an important health promotion activity for students. Interested students who met the inclusion criteria completed the survey in their free time. Data were collected between October and December 2015. Students’ knowledge and attitude to asthma was determined through

<table>
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<tr>
<th>TABLE 1. Statements rightly judged correct by the largest numbers of participants</th>
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<td>Question</td>
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<tr>
<td>If I have asthma, then my siblings will have asthma too</td>
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<tr>
<td>Patients with asthma can smoke freely</td>
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<tr>
<td>Redness and swelling of the airways are responsible for an asthma attack</td>
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<tr>
<td>People with asthma can die if not treated well</td>
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<td>Patients with asthma can keep pets and birds</td>
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<td>Patients with asthma can live normally with the right treatment</td>
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<table>
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<th>TABLE 2. Statements wrongly judged correct by the largest numbers of participants</th>
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<tr>
<td>Question</td>
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<tr>
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<tr>
<td>Patients with asthma can drink milk and eat yogurt</td>
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<td>An inhaler should be used only when a patient has an asthma episode</td>
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<td>Patients with asthma become addicted to their asthma drugs</td>
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<tr>
<td>Some asthma medicines can be harmful to the heart</td>
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<tr>
<td>All medicines can be stopped when signs and symptoms disappear</td>
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<tr>
<td>Lots of children have asthma</td>
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two surveys. The knowledge survey developed by Al-Motlaq and Sellick (2011) is a true-false test comprising 21 items and one brief narrative question. The items are added to give a score out of 24.

The attitude survey, also developed by Al-Motlaq and Sellick (2011), is a written true-false test consisting of ten items. An Arabic version of the survey was used in this research. The Arabic version is translated and validated by Al-Motlaq, who is one of the originators of the original surveys and permission to use the surveys was obtained from him.

**Data analysis**

Data were summarised using descriptive statistics expressed as frequency, mean and standard deviation. To test whether there is a statistically significant difference between the means in groups, the independent t-test with significant level <.05 was used. Data analysis were conducted using the statistical package SPSS version 20.01 for Windows.

**Ethical considerations**

The study was approved by the ethics committee at Jerash University and Greater Jerash municipality department of education. An information sheet and consent form were distributed to students and parents to obtain their consent. The information sheet included the purpose of the study, rights of students to voluntary participation in the study and assurance of the anonymous and confidential nature of the responses.

**Results**

Most participants were male (67.5%, n=204), with an average age of 16 years. Participants responded to 22 questions to evaluate their knowledge of asthma. The range of possible scores for the knowledge section was between 0 (poor) and 24 (excellent).

Most adolescents reported an adequate level of knowledge, as their mean corrected score was 14.8 (SD = 2.46), with a minimum score of seven and a maximum of 20. None of the adolescents gave solely correct responses on the survey and 172 (56%) obtained a score equal to or more than 15 out of 23.

A total of 284 (94%) answered the true-false statement: ‘If one child in a family has asthma, then their brothers and sisters will have asthma too’ correctly, and 51 (16.9%) responded correctly to the statement: ‘People with asthma can drink milk and eat yogurt’. Information about the numbers of participants who rightly or wrongly judged the statements correct is presented in Tables 1 and 2.

An independent sample t-test was then used to compare the mean differences between males and females, having or not having asthma and whether there was a relationship with asthma to the knowledge total scores. No significant differences between groups were found.

Although most young people held positive attitudes to adolescents diagnosed with asthma, some negative attitudes were demonstrated. For example, almost 59%

**TABLE 3. Attitudes of adolescents towards people with asthma**

<table>
<thead>
<tr>
<th>Item</th>
<th>Yes</th>
<th>No</th>
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<tr>
<td>I would like to be friends with someone who has asthma</td>
<td>181</td>
<td>121</td>
</tr>
<tr>
<td>I do not like to sit next to someone complaining of asthma</td>
<td>99</td>
<td>203</td>
</tr>
<tr>
<td>People with asthma are good in class</td>
<td>124</td>
<td>178</td>
</tr>
<tr>
<td>People with asthma display bad moods</td>
<td>112</td>
<td>190</td>
</tr>
<tr>
<td>People with asthma feel ashamed of their illness</td>
<td>133</td>
<td>169</td>
</tr>
<tr>
<td>There are no problems with using inhalers in class</td>
<td>254</td>
<td>48</td>
</tr>
<tr>
<td>Asthmatic children get sick because they are neglected</td>
<td>81</td>
<td>221</td>
</tr>
<tr>
<td>Children with asthma pretend that they have a disease</td>
<td>48</td>
<td>254</td>
</tr>
<tr>
<td>Children with asthma can participate in all kinds of sports and games</td>
<td>80</td>
<td>222</td>
</tr>
<tr>
<td>Teachers, in the classroom, give more attention to students with asthma</td>
<td>151</td>
<td>151</td>
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(\(n=178\)) believed that people with asthma are not good in class, 44% (\(n=133\)) thought that people with asthma feel ashamed of their illness and 37% (\(n=112\)) believed individuals with asthma display bad moods (Table 3).

Finally, using an independent sample t-test, no significant association was found between adolescents’ level of knowledge and their attitudes to people with asthma.

**Discussion**

Although the young people in this study demonstrated an adequate level of knowledge in many areas of the survey, several areas of deficit were identified. They were unable to identify the types of food that individuals with asthma may eat, and they had poor knowledge of the medicine that young people with asthma were receiving.

There are similarities with other studies, for example Iranian adolescents had poor knowledge of the physiology of the disease (Sharifi et al 2011), and an American study reported that adolescents lacked the knowledge to identify the signs and symptoms of asthma and the types of triggers that induced asthma (Shaw et al 2005).

A study by Leiria Pinto et al (1999) found a knowledge deficit in identifying the signs and symptoms of asthma and its management.

To develop any future educational plans for Jordanian adolescents, it is important to consider the areas of knowledge deficit among young people. Enhancing adolescents’ knowledge will increase the chances of early diagnosis of the disease and better self-management, which will reduce the chance of recurrent hospitalisation (Mårdby et al 2007, Bowen 2013). Health promotion strategies should be developed and targeted at young people living with a variety of conditions, such as asthma, to increase their awareness of the health risks associated with smoking tobacco and increase their awareness of signs, symptoms and management.

The results of the study showed adolescents with asthma had the same level of knowledge as adolescents who did not have asthma. Therefore, school nurses should provide adolescents, at the time of diagnosis, with education about their illness and how to effectively manage the symptoms they might experience. This will reduce the number of challenging situations to which they will be exposed because of poor self-management of their condition. It will increase their quality of life, social inclusion and participation in their community.

There is also a need to establish effective transition pathways from child and adolescent

**References**


health to adult health services so the young person is supported and educated to manage the increased responsibility of moving to self-care and to assist their parents to foster this at home. In this transition, nurses and parents are required to support adolescents’ increasing autonomy and to engage them in any healthcare activity. Nurses and parents should also encourage adolescents to be in control of managing their asthma and develop knowledge to avoid triggers for the condition.

Educating young people about asthma was found to be helpful in their care and increased social acceptance of adolescents with asthma (Al-Motlaq 2009). Health education programmes that focus on the causes of common conditions and focus the effect of positive community attitudes to people with asthma can improve the young person’s quality of life. Increasing adolescents’ health literacy was identified in previous literature as an important element in changing their attitude to living with asthma (Tavasoli et al. 2006, Wang et al. 2014).

Nurses need to participate actively in curriculum activities to establish a rapport with young people to educate them about asthma, preventing or ensuring early diagnosis of any health problem. Negative community attitudes to people with asthma have been shown to lead to non-adherence to treatment plans in children and adults (Williams et al. 2007).

To overcome this, online resources and social media can play a successful role in normalising asthma and improving the experience of young people with living with asthma.

**Limitations and strengths**

Despite the large sample size (n=302), the results cannot be generalised to all Jordanian adolescents because the sample was recruited from northern Jordan only. Future studies of young people with asthma are recommended to evaluate the effect of applying educational programmes on adolescents’ knowledge and attitudes.

**Conclusion**

This study identified several areas of knowledge deficit among Jordanian adolescents in relation to people with asthma. Healthcare professionals should consider this deficit when they plan educational programmes to change attitudes of young people.

Expanding adolescents’ knowledge and changing their attitudes might improve the health outcomes of asthma patients. It will also improve their social acceptance, enabling young people to achieve their personal goals and ambitions.

**Implications for practice**

- Healthcare providers, working with teachers, need to develop more sensitive school education to improve knowledge and foster positive attitudes to young people living with a range of conditions.
- Health promotion should be delivered to young people to reduce the likelihood of developing asthma, for example smoking cessation support.
- Education about their condition and how to manage symptoms effectively should be provided to young people when they are first diagnosed.
- Education is required to support the transition from childhood health to adolescent health and adult services eventually.


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