

Asthma Society of Ireland

The Health and Wellbeing Study Report

An Investigation into the Perceived Health and Wellbeing of Adults Living
with Asthma in Ireland

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Foreword

The Asthma Society of Ireland is the national charity dedicated to empowering Ireland's 470,000 people with asthma to take control of their asthma by providing them and their families with information, education, services and support. Through our advocacy work we campaign on behalf of people with asthma on the issues that concern them and for the changes that will make a difference to their lives. We are focused on representing people with asthma, working to improve their lives and to reduce asthma deaths.

The Asthma Society's vision is everyone with asthma living a full life symptom free. So, to inform our work, in the last two years we have focussed our research activities on trying to understand more about how asthma really affects the lives of people who have this chronic disease. At a national policy level there is a focus on health and wellbeing, on living life to the full and on enjoying physical, mental health and wellbeing. So it is timely for this investigation into the perceptions of people with asthma on their own health and wellbeing. It gives us a valuable insight with robust evidence to strengthen our voice to campaign for change at a national policy level. It also helps us as a patient organisation to respond better to the needs of people with asthma through the development and ongoing improvement of our own services.

This study gives us a valuable insight in particular into what influences the overall health and wellbeing of people with asthma. It shows that the more severe the asthma and the existence of other conditions, the greater the effect on a person's health and wellbeing. Consistent with our published study Living with Asthma (2014), it also shows that the physical limitations that some people with asthma experience, also has an influence on their perceived health. The psychological wellbeing of living with asthma shows levels of depression and anxiety, particularly in students which is cause for concern. Low energy levels and tiredness also influence the wellbeing of people with asthma.

The question for us now in the Asthma Society, as well as for GPs and for Respiratory Consultants is, how best can we respond to the health and wellbeing needs of people with asthma? We know that asthma treatments and asthma management works, but people with asthma need more to help them live life to the full and to enjoy physical, mental health and wellbeing, in line with the vision in the Healthy Ireland Framework. I hope that this helps us all with those deliberations and plans to follow.

I would like to commend the excellent work of the research team, Dr Mary Hughes, Ms June Considine, Dr Elaine Lehané and Prof. Eileen Savage. I would also like to express my sincere gratitude to the members of the Asthma Society who participated in the study and took the time to complete the survey telling us about how asthma affects their lives.



Sharon Cosgrove, CEO Asthma Society of Ireland

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Introduction

Asthma is the most common chronic respiratory disease in Ireland with an estimated 470,000 individuals thought to be affected nationwide (Asthma Society of Ireland 2014, Central Statistics Office 2008). Of these, 240,000 are believed to be uncontrolled asthmatics, and approximately 50 asthma related deaths per year (Asthma Society of Ireland, 2013). The loss of productivity in the workforce and at school due to asthma related illness is 12 days per adult, and 10 days per child per year in Ireland (Manning *et al.* 2007), and at a cost to the exchequer of €2,737 per hospital admission (Health Service Executive 2009). Despite the availability of comprehensive guidelines on asthma management (GINA 2012, Holohan *et al.* 2012), morbidity rates in adults continue to rise, with worrying levels of control having been highlighted by the REALISE study (Price *et al.* 2014).

Asthma is often distressing, debilitating and potentially life threatening, thus, the use of adequate treatment and management is essential in maintaining control. Although there is no cure for Asthma, its clinical manifestations can be controlled and managed with treatment, resulting in an improvement in overall health and wellbeing (Cushny 2013). The Asthma Society of Ireland is campaigning for the implementation of the National Clinical Programme for Asthma (NCPA) in order to improve the health and wellbeing for all those living with asthma in Ireland. The aim of the NCPA is to reduce the occupancy of asthma bed days by 3,140, decrease GP out of hour visits by 5,000, and reduce emergency department admissions by 2,000 over the next three years, all while achieving a 90% reduction in asthma mortality over a ten year timeframe (Asthma Society of Ireland 2014). This is envisaged thorough the implementation of a national model of care, designed specifically with evidence based guidelines, treatment protocols, care pathways and care bundles for individuals with asthma.

The Asthma Society of Ireland has been investigating the lives of those living with asthma in relation to their health and wellbeing in order to support the call for the implementation of the NCPA. Other studies have explored asthma in terms of its treatment, management and symptom control (Price *et al.* 2014, Su *et al.* 2013, Thompson *et al.* 2013). This investigation into perceived health and wellbeing of adults with asthma was envisaged to provide a timely insight in line with the objectives set out in the Healthy Ireland Framework (Department of Health 2013b).

The Healthy Ireland Framework is a strategy to promote the health and wellbeing of the entire population over the coming decade. The overall vision of the framework is to have an Ireland where every citizen can enjoy physical and mental health and wellbeing to their full potential (Department of Health 2013b). The framework defines health as much more than an absence of disease or disability. It states that an *‘individual’s health, and that of the country, affects the quality of a populations lived experience, is an essential aspect of everyday life and is an asset for all human development’* (Department of Health, 2012b). Wellbeing is highlighted as an important dimension in overall context of health. The aims of the framework are to increase our healthy population across the life trajectory, achieve a reduction in health inequalities nationally, reduce threats to health in society and create an environment where every citizen takes responsibility for managing their own health and wellbeing. This envisages a cross-sectorial approach across and within all the agencies of the state. This will allow for the focus and redirection of existing resources, and the acceleration of progress on existing and future programmes and initiatives (Department of Health, 2013b). The Asthma Society of Ireland can play an integral role in implementing the aims of the Healthy Ireland Framework by continuing to advocate for the implementation of the NCPA.

Section One: Health and Wellbeing

1.1 Background

Health has been defined as '*one's ability to achieve their full potential while experiencing a complete state of physical, mental and social wellbeing*' (WHO 1948). According to the Study into Lifestyles, Attitudes and Nutrition (SLAN) over 58% of the Irish public rated their general health as either 'excellent' or 'very good' (Morgan *et al.* 2008). Chronic illness was reported by 38% of participants, with 6% of these respondents having asthma. However, the detail specific to asthma was limited so further enquiry is warranted.

The primary goal of healthcare for those with chronic conditions is ensuring maximum function in everyday life and to achieve the optimum level of wellbeing where possible (Department of Health 2013b). As chronic illness accounts for a significant percentage of health care expenditure, the impacts on individuals and groups affected require measurement in order to monitor health outcomes (Lee & McCormick 2002). There are 25.7% of men and 28.1% of women who have a chronic illness or have health related problems according to the latest Irish statistics (Department of Health 2013a). Psychological factors in addition to physiological factors are known to have an effect on the lives of people with chronic illness (Juth *et al.* 2008, Malec 2002). It is recognised that health problems can result in the reduction in the health and wellbeing of not only those individuals affected, but also those who are around them (Department of Health 2013b).

Health and wellbeing are central concepts within health science and although conceptual variance between them is generally accepted, appropriate underpinning conceptual definitions for both are lacking (Svensson & Hallberg 2011). As a result, there is a poor conceptual basis to many of the studies that have explored the concepts of health and wellbeing. There may also be a correlation between wellbeing and health, although the direction of causation underlying this correlation remains unclear. However, it appears evident from the literature that health is an important determinant of wellbeing, and in turn, wellbeing an important determinant of health (Helliwell & Putnam 2004).

1.1.1 Health

In the early 1940's, the World Health Organization developed what was then envisaged to be a holistic concept of health, defining it as '*one's ability to reach their full potential while experiencing a complete state of physical, mental and social wellbeing*' (WHO, 1948). This definition attempted to extend the traditional medical concept of health by means of portraying it as inclusive of a positive state of wellbeing. In other words it was a conceptual view in which physical functionality is only one of the aspects concerned (Boruchovitch & Mednick 2002). However, this view of health presents some drawbacks as there is a failure to define the qualities of what was considered wellbeing.

More ecological standpoints on the concept of health defined it either in terms of an adequate physical functional capacity whereby an individual had the ability to execute daily activities, or had the capability to adapt to such activities (Dunn 1959). This concept of health was then extended by introducing the concept of wellness as the integration of both the capacity to physically function in the environment and the ability to adjust to the stresses within it (Boruchovitch & Mednick, 2002). Therefore it was considered acceptable that when measuring the concept of health, the physical functionality of individuals provided the most beneficial insight into overall health status (Izquierdo 2005).

The concept continues to be developed and refined as it is widely agreed that, given the large number of people living with chronic illness, health is not merely seen as the absence of disease or infirmity (Lee & McCormick 2002). In other words individuals with a chronic illness can still be considered as healthy despite the presence of symptoms associated with their chronic illness. This is seen in the ability to execute daily activities and as such can therefore be measured.

1.1.2 Wellbeing

While it is agreed that wellbeing is a multidimensional concept, its definition remains unclear (de Chavez *et al.* 2005, Forgeard *et al.* 2011). Wellbeing, has been attributed to attributes such as happiness, positive affect and

life satisfaction (Diener *et al.* 1999). This view evaluates life from the feelings of pleasure, happiness and satisfaction resulting in a 'good life' (Sarvimäki 2006). Wellbeing has been conceptualised as having attributes of positive psychological functioning and human development, in the meaningful life (Gallagher *et al.* 2009, Pollard & Lee 2003).

Wellbeing is often associated with quality of life issues but how it is operationalised varies across studies (Salvador-Carulla *et al.* 2014). Wellbeing is often referred to in the quality of life literature, as a multidimensional concept with aspects such as physical, psychological and social functioning (Taylor *et al.* 2008). Hope is also included as a dimension of wellbeing, in the context of chronic illness and aging (Duggleby *et al.* 2012). Psychological wellbeing is thought to differ across the lifespan in the pursuit of health goals (Frazier *et al.* 2012) with increasing levels of life satisfaction as age increases (Strine *et al.* 2008).

Wellbeing involves experiencing freedom, being engaged, active and involved, in control and having the ability to make one's life decisions in relation to values, beliefs, goals and aspirations (Schickler 2005). The importance of friendship, stable relationships and social integration in relation to wellbeing are also recognised (Frazier *et al.* 2012, Tornstom 2011). Wellbeing is therefore not only something that exists but is also created in social situations with relatives, family and with care (Gunnmo & Bergman 2011, Juniper 2001). Psychosocial support has been shown to improve health related quality of life in people with chronic illness (Cox *et al.* 2012). Thus, social support and loving relationships are component attributes of wellbeing.

As a result, although an agreed definition appears contentious, a clear consensus in relation to the multidimensional aspect of wellbeing in the research literature is evident. To ensure that the concept of wellbeing is fully explored, the dimensions of positive emotion and social relationships, incorporating happiness, life satisfaction and belonging, must be included.

1.2 The Health and Wellbeing of those Living with Chronic Illness

It is suggested, from a review of the empirical health literature, that physical functionality and ability plays a major role in determining the concept of health. Physical activity is associated with higher levels of life satisfaction across the life trajectory as it is associated with psychosocial wellbeing (Strine *et al.* 2008). A study by Stewart *et al* (1989) found that chronic illness was the determinant which influenced physical health most, with 54% of the respondents experiencing some form of chronic disease and 29% reporting co-morbidities.

The effect of chronic illness on physical health was highlighted by Schickler (2005), who found that those with a chronic illness did not necessarily lose their physical functionality in times of illness exacerbation. During these times respondents utilized physical functionality, emphasizing that energy also played an integral role in health.

The SLAN report (Morgan *et al.* 2008) found that 38% of the 10,000 respondents suffered from one or more chronic illnesses, all of which had some form of physical limitation as a result; 6% of these had asthma. Despite the considerable presence of chronic illness however, Morgan *et al* (2008) reported that 58% of the respondents rated their health as either 'excellent' or 'very good'

Partridge *et al* (2011) found that asthma had an impact on the daily life of 32% of respondents in their study. This is also seen in the REALISE study where 33% of respondents reported that asthma affects their ability to live life to the full (Price *et al*, 2014). Su *et al.* (2013) found that 73% of respondents who experienced asthma symptoms revealed that it affected their physical functionality, with breathlessness being the symptom highlighted as creating the most limitations while trying to execute daily activities (Thompson *et al*, 2013).

The REALISE study also found that co-morbidities have an impact on overall physical health, hypertension proving to be the most common (15.1%) (Price *et al*, 2014). Asthma symptom severity was self-assessed as not serious by 80% of respondents who felt that had full control, however this was found to be 20.1% when gauged in relation to GINA criteria. This finding is similar to the AIM study (2013), where 84% of respondents perceived their asthma to be controlled, but this figure was 2% when considered against GINA criteria with complete control following assessment. As a result, is suggested that adults who have asthma are

overestimating their level of control, indicating that many respondents may also have differing perceptions of their overall health than health care professionals involved in their care.

Chronic illness was found to be the most influential factor on psychological wellbeing, with those suffering from depression being found to be the most affected (Stewart *et al.* 1989). This is consistent with the SLAN report (Morgan *et al.* 2008) where although 6% of respondents reported suffering from both depressive and anxiety symptoms, they found a generally positive level of energy and vitality. Findings also revealed that those in lower social classes reported lower energy and vitality scores, suggesting that environmental factors may be determinants of psychological wellbeing (Morgan *et al.* 2008).

The National Psychological Distress and Wellbeing Survey (Doherty *et al.* 2007) explored the mental health and wellbeing of the nation, with 85% of the respondents perceiving their psychological health to be either 'excellent' or 'very good' (Doherty *et al.* 2007). Females were found to have significantly higher levels of psychological distress than males, with a reduction in positive mental health also noted with increasing age (Doherty *et al.* 2007). Economic status was also found to influence overall psychological health.

Schickler (2005) found that feeling empowered and happiness, having aspirations and a sense of security, vitality and being positive, all contributed to the pursuit of psychological health and wellbeing which could be achieved independently of health. Health was seen as being a medical and physical state while 'well' was seen in the context of 'feeling', thus a subjective state of 'wellness' that was the opposite of 'suffering' (Schickler, 2005). As a result, it highlighted that wellbeing could occur in the presence of disease, emphasizing its emotional and mental aspects with the physical dimension being less influential.

The AIM study highlighted that respondents experienced substantial emotional limitation as a result of their asthma, ranging from 13% in Hong Kong, to 46% in Taiwan (Thompson *et al.* 2013). Thirty three percent of the Latin American respondents also revealed that they were fearful for their health in the future, with a further 70% stating that they felt fatigued and drained as a result of their condition (Maspero *et al.* 2013). Asthma was found to be the cause of fear and distress in 24% of respondents in the study by Partridge *et al.* (2011), with 33% also revealing that they often felt emotional stress as a result of the stigma associated with the condition (Partridge *et al.* 2011). The REALISE study found that 52% of respondents expressed feelings of worry in relation to their future health, with 42.8% of the sample often ignoring their asthma symptoms in order to feel

‘normal’ with a further 82% reporting hatred towards stigma and the being labelled as ‘sick’ (Price *et al.* 2014).

As health and wellbeing are bound not only by concepts of physical functionality and emotional stability, social relations and those around us are deemed highly influential factors. Support systems were found to be essential in how adults with asthma managed their lives in a qualitative study by Hughes & Dunne (2014). Poor levels of support from family and friends were found to have a negative effect on symptom management and self-esteem (Hughes & Dunne 2014). Social functioning was found to be significantly associated with psychological health with those whom reported diminished emotional stability also reporting poor social functioning (Stewart *et al.* 1989). This was also evident in the SLAN report (2007) whereby relationships providing comfort and friendly interest were deemed essential for positive psychological functioning (Morgan *et al.* 2008). Although 80% of respondents were found to use social relationships as a form of support, 14% responded that they felt lonely and isolated at the time of the study (Morgan *et al.* 2008).

Although social support and relationships were suggested to be integral components in the concepts of health and wellbeing in the literature, no asthma specific studies were found to adequately measure it.

1.3 Conclusion

Health and wellbeing have been broadly defined both in terms of their conceptual underpinnings, and how they relate to one another. Consequently studies investigating perceptions of health and wellbeing are loosely based with much variation in what they measure and the instruments used. Many studies combine the constructs of health and wellbeing leading to a wide variation in measurement, and investigate from the perspective of their negative effects (de Chavez *et al.* 2005). Functional status or symptom measurement is often the focus of these studies, resulting in an illness focused enquiry (Drummond 2000, Juth *et al.* 2008) which fails to deal with the functional impairments affecting everyday lives of people with asthma (Juniper 2001). There is a paucity of data on the measurement of social support and relationships in the context of health wellbeing in the asthma specific literature.

In order to address this, in this study health is viewed as physical functionality and the ability to carry out activities, measured in the constructs of self-rated health, the ability to execute daily activities and physical functionality. Wellbeing is viewed as positive emotion and relationships, measured in the constructs of self-rated wellbeing, psychological wellbeing and social functioning.

Section Two: Research Methodology

2.1 Research Design

An online survey was used to explore the perceived health and wellbeing of adults living with asthma. Using this form of data collection was deemed highly advantageous as respondents often prefer the anonymity and confidentiality of responses in online surveys (Boswell & Cannon 2014).

The aim of this study was to investigate the perceived health and wellbeing of those living with asthma in Ireland. The main objectives of the study were to:

- investigate how adults living with asthma in Ireland perceive their health and wellbeing
- explore how asthma severity affects the everyday life of adults living with asthma in Ireland
- investigate whether there is a relationship between both the concepts of health and the wellbeing of those living with asthma
- distinguish how perceptions of health and perceptions of wellbeing affect one another

2.2 Sampling

The study population was a convenience, self-selection sample recruited by online advertising. A sample size required of 200 participants was deemed appropriate for the study following sample size power calculation. An advertisement for the survey was made available on the Asthma Society of Ireland website, as well as the society's social media sites such as Facebook and Twitter, and through the intranet network in University College Cork. Advertisements were informative and welcoming and provided a link to the online survey. Inclusion criteria included adults (aged 18 or over) who had an asthma diagnosis for one year or more and had both good English and I.T. skills. Exclusion criteria included children under 18 years of age, and those who had poor English and I.T. skills.

2.3 Data Collection and Analysis

Data were collected by online survey over a two-week period (n=214). The survey consisted of a 33-item instrument devised for the study and a section on demographics (appendix 1). This was designed using the short form version of the Medical Outcome Survey (Stewart *et al.* 1989) with the addition of eight items from the P105 Health and Wellbeing Survey instrument (Price *et al.*, 2014). Both original instruments have been tested for their reliability and validity and have been used in large scale research studies previously. The use of physical, social and role functioning scales such as these have been shown to be effective in capturing differences in behavioural and physical dysfunction caused by chronic illness and disease (Schickler 2005). Demographic data were gathered using the Central Statistics Office format for data collection, which are used extensively. Dillman's principles for Questionnaire Construction (2007) were used to ensure the instrument was user friendly and appealing (Dillman 2007).

The items in the new instrument measured the multidimensional conceptual framework of health and wellbeing underpinning the study. Demographic data were collected, following a filter question confirming inclusion criteria, with questions regarding age, gender, primary principal status etc., and multiple choice questions related to determine asthma severity in order to allow for comparisons to be drawn during data analysis. Health was measured using likert scales for self-rated health, ability to execute daily activities, and physical functioning. Wellbeing was measured by using likert scales for psychological wellbeing incorporating happiness, life satisfaction and emotional stability, and the dimension of social support incorporating aspects of loving relationships and the sense of belonging. Participants engagement in healthy behaviours (lifestyle choices) was then measured using a likert scale. Each item was scored with RAND health scoring allowing for interpretation and comparison of the scales (Hays *et al.* 1995).

The reliability and validity of the new instrument was confirmed in a pilot study. This pilot study was undertaken from a sample(n=10) of the same population, and the results were tested for face and construct validity by a panel of experts, and the evaluation of the participants who completed the pilot study on the formatting, clarity, readability, ease of use, completion time and relevance of the instrument to the concepts. Data were handled using the same analysis schedule as the main study. External validity was assured by the

sampling framework. Reliability was assured by using Cronbachs alpha assessing internal consistency of a coefficient above 0.7; results were Health (0.892) Wellbeing (0.858).

Data were analysed using the Statistical Package for the Social Sciences (SPSS) software (version 22). As the instrument was predominantly based on the Medical Outcomes Survey (Stewart *et al*, 1989), its scoring system was utilised. Data-cleaning was used appropriately to change out of range values to missing, followed by item recalibration and skip pattern coding. This was then teamed with the reverse scoring of items, the transforming of item scores linearly to a common metric with a possible of 0 to 100 and finally by an averaging across items in the same scale. The newly coded data then allowed for inferential and descriptive statistics to be completed, with both nominal and ordinal data evident throughout. As a result, each respondent was then given both an overall health and a wellbeing score, ranging from 0 – 100. The relationship between variables was then assessed and the relationship between concepts was measured using Pearson’s Correlation Coefficient index.

2.3 Ethical Considerations

Ethical approval was obtained from the local Research Ethics Board prior to commencing the study. Participants were provided with information on the study prior to undertaking it, thereby giving their implied consent. Participants were assured of their anonymity and confidentiality of their responses. There was no link between their digital survey responses and their identity. Data were stored according to the Data Protection Act (2014).

Section Three: Findings

A total of 339 respondents completed the online survey. Following analysis, respondents were then filtered using SPSS software. All those who completed over 80% of the survey were deemed appropriate for inclusion. Accordingly 218 respondents were found to have completed a sufficient amount of the survey. Four further participants were then excluded having not completed a mandatory question whereby they were obliged to confirm their asthma diagnosis. As a result, the data from these 214 respondents were then deemed eligible for analysis.

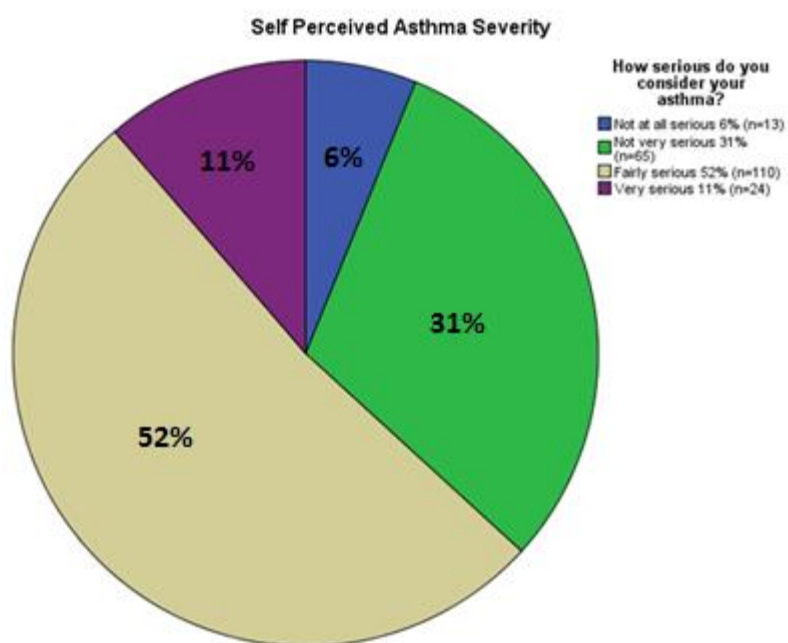
3.1 Demographic Characteristics of Respondents

Females accounted for the majority of respondents (76%, n=162). Age group was varied with 8% (n=18) aged 18-25 years, 23% (n=49) of respondents aged 26-35 years, 40% (n=85) of the respondents in the age category of 36-50 years, and 19% (n=40) in the 51-64 years. Nine percent (n=21) of the respondents were 64 years and older, with one respondent choosing not to answer this question.

Other forms of coexisting illness were reported by 33% of participants (n=71), with 14% (n=30) of the overall sample reporting two or more coexisting illnesses. Hypertension was the most predominant illness (10.3%, n=22). No participants reported having Cancer, however other illnesses included depression (9.3%, n=20), COPD (6.1%, n=13), rheumatoid arthritis (2.8%, n=6), diabetes (2.3%, n=5) and heart disease (1.9%, n=4). Respondents also had an 'other' option which 15.9% (n=34) of respondents choose, specifying illnesses such as allergic rhinitis, coeliac disease, eczema, hiatus hernia, factor V Leiden, thyroid abnormalities and epilepsy.

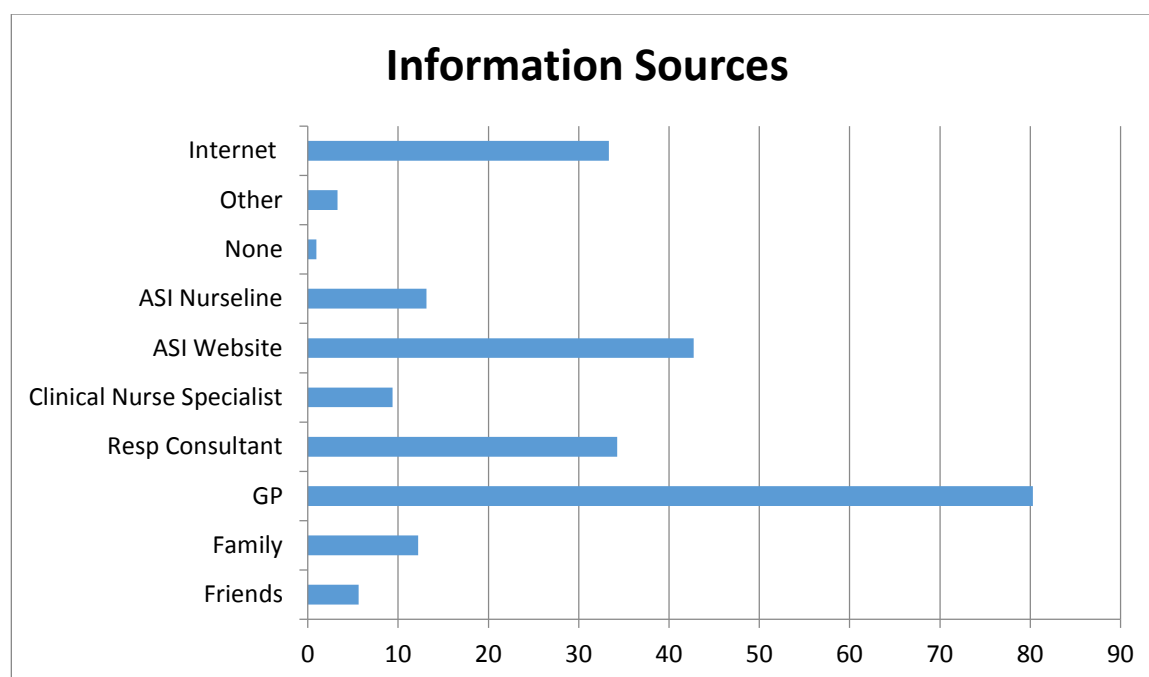
Full-time employment status was reported by 47% (n=101) of the sample, 3% (n=7) reported as being unemployed with 7% (n=14) of the respondents reporting to be unable to work due to permanent sickness or disability. Perceptions of asthma severity varied, as per Figure 3.1.

Figure 3.1: Self Perceived Asthma Severity (n=212)



Respondents obtained information in relation to their asthma from a variety of sources, the family doctor being most prominent 79% (n=170) as per Figure 3.2. Respondents were assessed on the level of trustworthiness in relation to each source of information stated. Of these, respiratory Consultants proved most trustworthy with 69% (n=147) of respondents choosing this option. Using friends as a source of information was found to be most untrustworthy (17% n=29).

Figure3.2: Sources of Information Utilised to obtain Asthma Information (n=214)



3.2 Physical Health and its Interference with Daily Activities

Respondents were asked to self-rate their health in general, ranging from ‘excellent’ to ‘poor’. Rating their health as ‘good’ was reported by 38% (n=82) of respondents, with 7% (n=14) rating their health as ‘excellent’, and 7.3% (n=15) of the respondents also rating their health as the most negative ‘poor’ option. In relation to how their physical health interferes with and limits their ability to perform simple daily activities, it was found that 82% (n=175) of respondents reported to having a limited performance during vigorous activities, with 16% (n=33) reporting to have no form of limitation. Seven percent (n=14) of respondents reported having difficulty with simple daily tasks such as cleansing and dressing with 93% (n=198) of participants reporting no limitation. Five percent (n=11) of respondents were also found to have an ‘extreme’ limitation in social activities as a result of their physical health. Respondents rated the perception of their overall health as per Table 3.1.

Table 3.1: Indication of Overall Physical Health

	True	Mostly True	Don't Know	Mostly False	False
I am somewhat ill	25 (12%)	43 (20.7%)	21 (10.1%)	59 (28.4%)	60 (28.8%)
I feel as good now as ever	28 (13%)	68 (33%)	11 (5.3%)	49 (23%)	50 (24.3%)
I've been feeling bad lately	39 (18.8%)	48 (23.2%)	8 (3.9%)	64 (30.9%)	48 (23.2%)
I am in poor health	17 (8.2%)	29 (13.9%)	18 (8.7%)	62 (29.8%)	82 (39.4%)
I am as healthy as anyone I know	24 (11.5%)	53 (25.4%)	33 (15.8%)	40 (19.1%)	59 (28.2%)
My health is excellent	13 (6.3%)	66 (31.9%)	24 (11.6%)	46 (22.2%)	58 (28%)
I seem to get sick easier than others	67 (31.9%)	56 (26.7%)	12 (5.7%)	44 (21%)	31 (14.8%)
I expect my health to get worse	27 (13%)	35 (16.8%)	60 (28.8%)	40 (19.2%)	46 (22.1%)

Respondents rated their physical ability as 'somewhat satisfied' by 32% (n=68), with 4% (n=9) being 'completely satisfied'. Sleep was the daily activity which 9% (n=19) respondents felt was interfered with most as a result of their physical health, recreational activities by 8% (n=18). One's ability to walk or move about was found to endure the least amount of interference by 47% (n=100) of respondents, followed by daily work by 40% (n=85). Eighty percent (n=170) of the respondents were found to have the ability to work at a paying job, however 20% (n=40) reported that they were unable to work due to their health.

3.3 Influence of Demographics and Clinical Factors on Overall Health Scores

On completing the health section, each respondent obtained an overall health score. Further analysis was conducted to determine whether demographic characteristics had a significant influence on the respondents overall health scores. Firstly, a statistically significant influence was identified in some of those found to have a co-existing illness. An influence ($p=0.03$) was found in those who reported having hypertension using the Mann-Whitney U test. Those with hypertension had a mean health score of 54.1, with those not having hypertension presenting with a mean score of 67.1. Respondents who opted for a co-existing illness in the

‘other’ category were also found to have a statistically significant influence ($p < 0.001$), with a mean health score of 50.1. No statistical significance was identified in those with depression ($p = 0.205$), with those having the condition presenting a mean health score of 61.3 and those whom were not depressed found to have a mean score of 66.4.

A statistically significant difference in mean health scores was also identified in relation to current employment status ($p < 0.001$). The mean health score was highest for those in the ‘working full-time for payment or profit’ group (Mean (S.D.): 70.8 (20.3)), followed by those whom were unemployed (Mean (S.D.): 70.7 (15.9)). Respondents whom were unable to work due to illness or disability presented with the lowest mean health score of 39.5 (S.D: 23). Following pairwise comparisons, it was then found that there was no statistically significant difference between the varying employment groups, except those in the ‘working fulltime for payment and profit’ group in comparison to both those whom were in the ‘unable to work due to illness or disability’ and ‘student/pupil’ groups.

The degree of asthma severity was also identified as having an influence on the mean health score of respondents ($p < 0.001$). The mean score was highest for those in the ‘not at all serious’ group (Mean (S.D): 82 (13.6)), with those in the ‘very serious’ group representing the lowest mean health score (Mean (S.D): 46.7 (23.8)). Pairwise comparison then revealed that all groups were statistically significantly different to each other, except for those in the ‘not at all serious’ and ‘not very serious’ groups. Gender, current age and age at diagnosis were all found to have no statistically significant influence on mean health scores, $p = 0.801$, $p = 0.989$ and $p = 0.184$ respectively.

3.4 Wellbeing

3.4.1 Psychological Wellbeing

When asked to self-rate their wellbeing, 35% ($n = 74$) of respondents reported ‘very good’ wellbeing, 34% ($n = 73$) as ‘good’, 5% ($n = 11$) as being ‘poor’. Thirty-one percent ($n = 66$) of the respondents were found to be ‘very happy’ with their personal life, followed by the 28% ($n = 60$) who were ‘generally satisfied and pleased’.

Three percent (n=6) of respondents were ‘very dissatisfied and unhappy’. The interference of health on their general and psychological wellbeing is highlighted in Table 3.4.

Depressive symptoms were reported as being absent by 39% (n=84) of respondents, 6% (n=12) admitting to feeling depressed ‘most of the time’, and one respondent (0.5%) reporting feeling depressive symptoms ‘all of the time’. In relation to happiness, 46% (n=99) of the responses were found to feel happy ‘most of the time’, 22% (n= 47) of the respondents reported feeling happy only ‘some of the time’. Feeling happy ‘none of the time’ was reported by only 0.9% (n=2) of the respondents.

3.4.2 Social and Loving Relationships

Respondents were close to and had social and loving relationships ‘all of the time’(38% n=82), with 26% (n=56) found to experience such relationships ‘most of the time’ in the past four weeks. Thirty-nine percent (n=84) of the respondents were found to experience loving relationships ‘all of the time’, with one respondent (0.5%) reporting that they never felt loved and wanted within the past four weeks.

Thirty-nine percent (n=84) reported never feeling isolated, with one respondent found to have felt isolated ‘all of the time’. Fifty-one percent (n=109) of the respondents reported that that their emotional health never interfered with their social activities with one participant reporting an interference ‘all of the time’. Thirty-six percent (n=78) reported feeling that their social limitations were ‘about the same’ as others their age. Twenty percent (n=44) of respondents reported that they were much less limited than others, while 10% (n=21) felt that they were ‘much more’ limited in comparison to others their age.

Table 3.2: Psychological Wellbeing in Relation to Health Concerns

How often during the past four weeks	All the time	Most of the time	Good bit of time	Some of the time	Little Time	None of the time
Were you discouraged by your health problems	20 (9.3%)	40 (18.7%)	50 (23.4%)	68 (31.8%)	29 (13.6%)	7 (3.3%)
Did you have a lot of energy	13 (6.2%)	24 (11.4%)	34 (16.1%)	43 (20.4%)	36 (17.1%)	61 (28.9%)
Did you feel weighed down by your health problems	2 (0.9%)	44 (20.7%)	41 (19.2%)	67 (31.5%)	46 (21.6%)	13 (6.1%)
Did you feel full of pep	1 (0.5%)	29 (13.8%)	39 (18.6%)	47 (22.1%)	43 (20.2%)	87 (40.8%)
Were you afraid because of your health	6 (2.8%)	12 (5.6%)	18 (8.5%)	47 (22.4%)	59 (28.1%)	35 (16.7%)
Did you have enough energy to do the things you wanted to	20 (9.4%)	66 (31.1%)	26 (12.3%)	59 (27.8%)	30 (14.2%)	11 (5.2%)
Was your health a worry in your life	18 (8.5%)	15 (7.0%)	35 (11.7%)	45 (21.1%)	54 (25.4%)	56 (26.3%)
Did you feel tired	36 (17.1%)	41 (19.4%)	35 (16.6%)	64 (30.3%)	29 (13.7%)	6 (2.8%)
Were you frustrated about your health	19 (9.0%)	26 (12.3%)	33 (15.6%)	39 (18.4%)	34 (16.0%)	61 (28.8%)
Did you feel despair over your health problems	13 (6.1%)	17 (8.0%)	26 (12.2%)	25 (11.7%)	34 (16.0%)	98 (46%)

3.5 Influence of Demographics on Overall Wellbeing Scores

Further analysis was completed to identify the demographic influences on respondents' overall wellbeing scores. In relation to those with a co-existing illnesses, depression was found to have a statistically significant influence ($p < 0.001$) on mean wellbeing scores using an independent-samples T test. Respondents with depression were found to have mean wellbeing score of 48.8 (S.D: 19.2), while those who were not depressed had a mean score of 64.2 (S.D: 18.9). No other form of co-existing illness was found to have a statistically significant influence, except for those whom opted for the 'other' category whereby a statistically significant influence was identified $p = 0.002$ and a difference in means of 11.3. Employment status was also found to have a statistically significant influence on mean wellbeing scores ($p = 0.004$). The highest mean wellbeing scores were evident in those in the 'retired' group (Mean (S.D): 71.9 (14.8)), with those in the 'student/pupil' group

obtaining the lowest mean score (Mean (S.D): 47.7(22.2)). Following pairwise comparisons, it was found that there was no statistically significant difference between the groups, except those in the 'working fulltime for payment or profit' and 'retired' groups in comparison to those in the 'student/pupil' and 'unable to work due to sickness or disability' groups.

Asthma severity was identified as having a statistically significant influence on mean wellbeing scores ($p=0.001$). There was a significant difference in mean scores between the four severity groups, with those in the 'not at all serious' group obtaining the highest score (Mean (S.D): 70.8 (13.5)) in comparison to those in the 'very serious' group whom were found to have the lowest score (Mean (S.D): 51.2 (18.7)). Following pairwise comparisons, it revealed that all groups were statistically significantly different to each other, except those in the 'fairly serious' and 'very serious' groups. Gender ($p=0.290$), age ($p=0.276$) and age at diagnosis ($p=0.930$) were all found to have no statistical significance on mean wellbeing scores.

3.6 Maintaining Health and Wellbeing: Lifestyle Choices

3.6.1 Sleep Quality

From the results, it appeared that having a restless sleep, feeling drowsy during the day and having trouble falling asleep were the most prominent problems reported by the respondents. Table 3.5 outlines the results in relation to overall sleep quality.

3.6.2 Physical Exercise

In relation to the level of physical activity the respondents participate in, the lowest number of exercise sessions (30 minutes) was none, with the highest being 14, resulting in a mean of 3.7 sessions. Walking was the form of exercise for 75% ($n=161$) of the respondents, with going to the gym reported by 16% ($n=34$) of the responses. Seven percent ($n=14$) of the respondents were found to not partake in any form of exercise, with 22% ($n=48$) choosing the 'other' option whereby activities such as dancing, golf, yoga, Zumba and Pilates were specified. When questioned on their reasoning for not participating in more physical activity, 25% of respondents reported to have 'no time', 17% ($n=36$) were 'too tired'. Eight percent ($n=16$) reported they were

too breathless to participate in more activity, with 4% (n=9) of the responses avoiding any form of activity due to their asthma.

3.6.3. Tobacco Consumption

Fifty-two percent of the respondents were found to have never smoked tobacco, with 22% (n=47) of the responses stating they used to smoke tobacco but ‘do not currently smoke’. Those who were still actively smoking was evident in 4% (n=8) of the responses. Of those who smoked or were currently smoking, 16-20 cigarettes daily was the most common consumption, representing 13% (n=28) of the responses.

Table 3.3: Sleep Quality Assessment

How often during the last 4 weeks did you...	All of the time	Most of the time	Good bit of the time	Some of the time	None of the time
Feel that your sleep was not rested	22 (10.3%)	45 (21.1%)	49 (23%)	73 (34.3%)	24 (11.3%)
Get enough sleep to feel rested upon waking	11 (5.1%)	43 (20.1%)	37 (17.3%)	95 (44.4%)	28 (13.1%)
Awaken short of breath or with a headache	2 (1%)	21 (10%)	29 (13.8%)	75 (35.7%)	83 (39.5%)
Feel drowsy or sleepy during the day	20 (9.4%)	34 (16%)	48 (22.6%)	88 (41.5%)	22 (10.4%)
Have trouble falling asleep	20 (9.4%)	20 (9.4%)	32 (15%)	69 (32.4%)	72 (33.8%)
Awaken during your sleep time and have trouble falling asleep again	19 (8.9%)	33 (15.4%)	35 (16.4%)	77 (36%)	50 (23.4%)
Have trouble staying awake during the day	10 (4.7%)	13 (6.1%)	24 (11.3%)	89 (42%)	76 (35.8%)
Take naps (5 mins or longer) during the day	12 (5.7%)	20 (9.4%)	24 (11.3%)	61 (28.8%)	95 (44.8%)
Get the amount of sleep you needed	8 (3.8%)	40 (19%)	39 (18.5%)	79 (37.4%)	45 (21.3%)

3.6.4. Lifestyle Choices in Relation to Asthma

Avoiding areas with a lot of smoking was the most common behaviour for 67% (n=143) of respondents. 10.7 % (n=22) reported that they avoided alcohol because of their asthma, with 51% (n=105) reporting that they watched the amount of alcohol they consumed because of their asthma. In addition, 19% (n=40) of respondents were found to avoid household pets (see table 3.4).

Table 3.4 Healthy Behaviours in Relation to Asthma

To what extent do you do the following specifically because of your asthma	Not at all	Not very much	A fair amount	A great deal
Watch how much alcohol you drink	105 (51%)	51 (24.8%)	28 (13.6%)	22 (10.7%)
Do more exercise	45 (21.6%)	78 (37.5%)	65 (31.3%)	20 (9.6%)
Keep yourself healthy	18 (8.6%)	48 (22.9%)	104 (49.5%)	40 (19%)
Avoid stress as much as possible	44 (21.2%)	69 (33.2%)	66 (31.7%)	29 (13.9%)
Have a balanced diet	26 (12.4%)	37 (17.6%)	104 (49.5%)	43 (20.5%)
Avoid staying out late	59 (28.1%)	59 (28.1%)	56 (26.7%)	36 (17.1%)
Try to keep a good work-life balance	36 (17.5%)	59 (28.6%)	79 (38.3%)	32 (15.5%)
Avoid areas with a lot of smoking	19 (9%)	13 (6.2%)	36 (17.1%)	143 (67.8%)
Avoid being near animals or pets	69 (32.9%)	51 (24.3%)	50 (23.8%)	40 (19%)

3.7 Conclusion

In conclusion, the findings highlighted that the general health and wellbeing of those living with asthma in Ireland varies greatly. Respondents appeared to perceive their asthma as quite severe, with increasing levels of severity having diminishing effects on both health and wellbeing. Co-morbidities, employment status, and both

physical and mental health were also found to influence overall health and wellbeing, with respondents participating in various lifestyle behaviours to maintain overall health and wellbeing.

Section Four: Discussion

The results of this study are a timely and welcomed addition to both the ongoing debate in relation to health and wellbeing and relating living with asthma in Ireland. It gives an invaluable insight into the perceptions of adults living with asthma in Ireland, and in particular what influences their overall health and wellbeing. Health was measured in terms of physical functionality and the ability to carry out activities, in the constructs of self-rated health, the ability to execute daily activities and physical functionality. Wellbeing was measured in terms of positive emotion and relationships, in the constructs of self-rated wellbeing, psychological wellbeing and social functioning.

4.1 The Perceived Health and Wellbeing of Adults who have Asthma

The perceptions of both health and wellbeing were found to vary among the respondents in this study. Comorbidities and employment status were both found to have a significant influence on both self-rated health and wellbeing, with increasing asthma severity also being found to have a diminishing effect. From the literature, it is evident that those with a chronic illness tend to rate their health lower than others (Stewart *et al.*, 1989). Having a chronic illness, and being treated for it has been shown to have a major impact on measures of health status (Golub *et al.* 2013). One third of respondents reported having co-existing illness, and over half considered their asthma to be severe. Health status among this cohort of adults with asthma is in variance to the general population surveyed in the Slan study (Morgan *et al.* 2007) with fewer respondents rating their health as either ‘very good’ or ‘excellent’. This is similar to findings in the *Living with Asthma* study where participants considered themselves to be unhealthy and struggled with maintaining their wellbeing as a result (Hughes & Dunne 2014). This is noteworthy as it may be suggested that asthma affects health perceptions more than other chronic conditions and warrants further investigation. Physical limitations were also found to have a significant influence on overall health. These findings are also consistent with previous studies (Dockrell *et al.* 2007, Hughes & Dunne 2014, Su *et al.* 2013) whereby physical limitations were reported by asthmatic populations in the past, with episodes of asthma exacerbation being found to be most limiting.

The results of the items on source of information used is also interesting as general practitioners (GP) were the most frequent source reported. This is noteworthy as a recent report indicated that three quarters of patients wanted their GP to manage their chronic illness in the community. It is concerning however to highlight in the same report that 26.6% of general practitioners did not use asthma management guidelines (Darker *et al.* 2015). This suggests that a proportion of patients attending a GP, and entrusting their care are not receiving the best evidence-based care that should be available to them. The Asthma Society of Ireland website and helpline were also popular sources of information used by respondents, with the majority of those surveyed deeming them ‘very trustworthy’ sources of information.

Psychological wellbeing was also found to significantly influence overall health and wellbeing, with depressive symptoms being highlighted as a common co-morbidity, particularly among students and those aged 18 to 25 years. Depression is known to negatively affect psychosocial functioning in young people (Derdikman-Eiron *et al.* 2012) and the self-reporting of symptoms by respondents in this study suggest that it is a significant factor in their general wellbeing. Depression is often reported in conjunction with higher levels of anxiety also, and is moderated by gender in young adults (Derdikman-Eiron *et al.* 2012).

A small number of respondents reported having high levels of anxiety, with just under half reporting that their emotional health interfered with their social activities. This is concerning as it suggests that asthma is having a major influence on participants’ lifestyle. Levels of energy and vitality were also negative overall with over a quarter of all respondents feeling worn out, and over a third feeling tired. This is in marked contrast to the SLAN study, where a relatively high level of energy and vitality was reported (Morgan *et al.* 2008).

The majority of respondents in this study were found to be happy and satisfied with their personal life, a factor that was also highlighted as having a significant influence on their overall health and wellbeing. The highest wellbeing scores were in those who were retired, but worryingly the lowest were among the student group. This finding supports the claim that psychological wellbeing differs across the lifespan with increasing levels of life satisfaction as age increases (Frazier *et al.* 2012, Strine *et al.* 2008). Over 60% of respondents were also found to experience a supportive relationship where they felt loved and wanted; a factor that was highlighted

as significant in overall psychological health, happiness and life satisfaction. Asthma was found to influence health behaviours in the majority of participants' lives.

When considering lifestyle choices and behaviours in relation to health and wellbeing, sleep quality was reported as poor. Over twenty percent of those surveyed reported trouble staying awake during the day, experiencing poor or restless sleep and often being ~~often~~ awoken short of breath. Those in the 18-25 years age group reported the poorest sleep quality. Overall sleep quality was also found to have a significant impact on health and wellbeing, with those experiencing better sleep reporting good self-perceived health status. Physical exercise was also found to increase overall health and wellbeing. Asthma severity was highlighted as a limiting factor however, with a small number of respondents reporting being too breathless and too afraid to participate in physical exercise due to their asthma. There was a lower incidence of 'active' tobacco smoking reported in the study in comparison to the general public (29%) (Morgan *et al.* 2008) but this remains concerning given the associated repercussions of smoking on lung health.

From the findings, health and wellbeing were found to be highly correlated and intrinsically linked. It was highlighted that they significantly influenced one other, with asthma severity, co-morbidities and employment status all being found to strongly influence the perceived health and wellbeing status. Psychological and emotional wellbeing were found to be determinants of physical health, with social support systems also being highlighted as essential.

4.2 Recommendations

The study explored the perceived health and wellbeing of those living with asthma in Ireland. It is a timely addition to the existing body of knowledge in relation to the health related quality of life of those living with asthma. These results support the advocacy activity of the Asthma Society of Ireland in the pre-implementation campaign for the National Clinical Programme for Asthma (NCPA), and provide robust, evidence based findings in relation to the health and wellbeing perceptions of those living with asthma. These results are also envisaged to strengthen the call for the NCPA by providing a voice for its members. A programme such as the

NCPA would undoubtedly address some of the concerns highlighted in this study, and in turn work towards improving the health and wellbeing of those with asthma.

The findings in this report will be used to support the development of new strategy initiatives by the Asthma Society of Ireland. Acknowledging the contributions of the participants in this study will guide new policy initiatives in the areas of physical limitation, psychological health and lifestyle choices. It is a new baseline for understanding the perceptions of the members of the society with regard to living with asthma and can strengthen the call for the implementation of the National Clinical Programme for Asthma.

4.3 Conclusion

This study provides an in-depth insight into how people with asthma perceive their health and wellbeing in Ireland today. Findings support the view that functional or disease status and measurement of symptom control should not be considered as the only measure of health. Health and wellbeing should be addressed as separate, yet co-existing components in optimising the quality of life of people with asthma. This new data on the health and wellbeing of those living with asthma in Ireland can be used to support the call for the implementation of the National Clinical Programme for Asthma (NCPA). It could facilitate a change in the provision of care in the clinical setting, and help to maximise the health and wellbeing of those with asthma in Ireland.

Please reference report as:

Hughes, M, Considine, J, Lehane E, Savage, E (2015) The Health and Wellbeing Study Report – An Investigation into the Perceived Health and Wellbeing of those Living with Asthma in Ireland. Asthma Society of Ireland, Dublin.

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APPENDIX

The Perceived Health and Wellbeing of Adults Living with Asthma in Ireland Survey

'The Perceived Health and Wellbeing of Adults Living with Asthma in Ireland'

Welcome!

Thank you for participating in our survey.

This study explores how your asthma affects you in your day to day life while paying particular attention to your overall health and wellbeing.

The Asthma Society of Ireland are interested in learning more about what it is like for you to have asthma and how, or if it affects your everyday life. As there have been numerous asthma specific studies in relation to control, medication and symptom management in the past, we are taking this opportunity to learn more about your health in general. Your physical health, feelings, social life and healthy behaviours such as exercise and diet will all be assessed.

As a result, this will help us to understand what the issues are for you and enable us to represent you better in the future.

This survey takes just over five minutes.

All information shared is completely confidential so please be honest in your responses as we are interested in your opinions and experiences.

Click next at the bottom of this page to proceed to the main survey. Please attempt to answer all questions.

7%



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'The Perceived Health and Wellbeing of Adults Living with Asthma in Ireland'

Demographics

1. Do you currently suffer from any of the following illnesses, which have been diagnosed by a doctor? (Please select all that apply.)

☐ Asthma

☐ Cancer

☐ Chronic Obstructive Pulmonary Disease (COPD)

☐ Depression

☐ Diabetes

☐ Heart Disease

☐ High Blood Pressure/Hypertension

☐ Rheumatoid Arthritis

☐ Other (please specify)

2. Were you first diagnosed with asthma within the last year?

☐ Yes

☐ No

3. Are you...

☐ Male

☐ Female

14%



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'The Perceived Health and Wellbeing of Adults Living with Asthma in Ireland'

4. In which age category do you belong?

☐ <18 18-25

☐ 26-35 36-

☐ 50 51-64

☐ >64

5. Which best describes your current principal status?

☐ Working full-time for payment or profit

☐ Working part-time for payment or profit

☐ Looking for first regular job Unemployed

☐ Student/Pupil

☐ Looking after home/family

☐ Retired from employment

☐ Unable to work due to permanent sickness or disability

☐ Other (please specify)

6. If you were to seek information in relation to managing your asthma, which of the following would you use? (Please select all that apply.)

- ☐ Friends
- ☐ Family
- ☐ Family Doctor
- ☐ Respiratory Consultant
- ☐ Clinical Nurse Specialist
- ☐ Pharmacist
- ☐ Internet search engines (e.g. Google)
- ☐ The Asthma Society of Ireland helpline
- ☐ The Asthma Society of Ireland website
- ☐ None - I do not look for information
- ☐ Other (please specify)

[Redacted text]



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'The Perceived Health and Wellbeing of Adults Living with Asthma in Ireland'

7. To what extent do you consider the following to be trustworthy sources of information in relation your asthma?

Very untrustworthy Fairly untrustworthy Fairly trustworthy Very trustworthy

Friends	☐	☐	☐	☐
Family	☐	☐	☐	☐
Family Doctor	☐	☐	☐	☐
Respiratory Consultant	☐	☐	☐	☐
Clinical Nurse Specialist	☐	☐	☐	☐
Pharmacist	☐	☐	☐	☐
Internet search engine (e.g. Google)	☐	☐	☐	☐
The Asthma Society of Ireland helpline	☐	☐	☐	☐
The Asthma Society of Ireland website	☐	☐	☐	☐

1. At what age was your asthma first diagnosed by a doctor?

2. How serious do you consider your asthma?

☐ Not at all serious

☐ Not very serious

☐ Fairly serious

☐ Very serious

29%



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Physical Health

10. In general, would you say your health is...

Excellent ☐

Very good ☐

Good ☐

Fair ☐

Poor ☐

11. The following relates to the activities you might undertake through the course of a typical day.

Does your health limit your performance in these activities? If so, how much?

Yes, Limited a lot

Yes, limited a little

No, not limited at all

Vigorous activities, such as running, lifting heavy objects, participating in strenuous sports

☐
☐
☐

Moderate activities, such as moving a table, pushing a vacuum cleaner, bowling or golf

☐
☐
☐

Lifting or carrying groceries

☐
☐
☐

Climbing several flights of stairs

☐
☐
☐

Climbing one flight of stairs

☐
☐
☐

Bending, kneeling or stooping

☐
☐
☐

Walking more than a mile

☐
☐
☐

Walking one mile

☐
☐
☐

Walking a short distance

☐
☐
☐

Bathing or dressing yourself

☐
☐
☐

'The Perceived Health and Wellbeing of Adults Living with Asthma in Ireland'

12. During the past 4 weeks, to what extent has your physical health interfered with your normal activities with family, friends, neighbours or social groups?

☐ Not at all

☐ Slightly

☐ Moderately

☐ Quite a bit

☐ Extremely

13. How TRUE or FALSE are each of the following statements for you?

True		Mostly true		Don't know		Mostly false		False
I am somewhat ill	☐	☐		☐		☐		☐
I feel as good now as I ever have	☐	☐		☐		☐		☐
I have been feeling bad lately	☐	☐		☐		☐		☐
I am poor in health	☐	☐		☐		☐		☐
I am as healthy as anyone I know	☐	☐		☐		☐		☐
My health is excellent	☐	☐		☐		☐		☐
I seem to get sick a little easier than others	☐	☐		☐		☐		☐
I expect my health to get worse	☐	☐		☐		☐		☐

14. How satisfied are you with your physical ability to do what you want to do?

☐ Completely satisfied

☐ Very satisfied

☐ Somewhat satisfied

☐ Somewhat dissatisfied

☐ Very dissatisfied

☐ Completely dissatisfied

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15. During the past 4 weeks, how much did your physical health interfere with the following?

	Not at all	A little bit	Moderately	Quite a bit	Extremely
Your mood	☐	☐	☐	☐	☐
Your ability to walk or move about	☐	☐	☐	☐	☐
Your sleep	☐	☐	☐	☐	☐
Your normal work (both inside and outside the home)	☐	☐	☐	☐	☐
Your recreational activities	☐	☐	☐	☐	☐
Your enjoyment of life	☐	☐	☐	☐	☐

16. Does your health keep you from working at a paying job?

☐ Yes

☐ No

50%



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Your Feelings

17. In general, would you say your wellbeing is...

☐ Excellent

☐ Very good

☐ Good

☐ Fair

☐ Poor

18. How happy, satisfied or pleased have you been with your personal life during the past 4 weeks?

☐ Extremely happy, could not have been more satisfied

☐ Very happy most of the time

☐ Generally satisfied, pleased

☐ Sometimes fairly satisfied, sometimes fairly unhappy

☐ Generally dissatisfied, unhappy

☐ Very dissatisfied, unhappy most of the time

19. How often during the past 4 weeks....

	All of the time	Most of the time	Good bit of time	Some of the time	Little time	None of the time
Did you feel worn out?	☐	☐	☐	☐	☐	☐
Were you discouraged by your health problems?	☐	☐	☐	☐	☐	☐
Did you have a lot of energy?	☐	☐	☐	☐	☐	☐
Did you feel weighed down by your health problems?	☐	☐	☐	☐	☐	☐
Did you feel full of pep?	☐	☐	☐	☐	☐	☐
Were you afraid because of your health?	☐	☐	☐	☐	☐	☐
Did you have enough energy to do the things you wanted to do?	☐	☐	☐	☐	☐	☐
Was your health a worry in your life?	☐	☐	☐	☐	☐	☐
Did you feel tired?	☐	☐	☐	☐	☐	☐
Were you frustrated about your health?	☐	☐	☐	☐	☐	☐
Did you feel despair over your health problems?	☐	☐	☐	☐	☐	☐

57%



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20. During the past 4 weeks, how much of the time did you feel depressed?

☐ All of the time

☐ Most of the time

☐ A good bit of the time

☐ Some of the time

☐ A little of the time

☐ None of the time

21. During the past 4 weeks, how much of the time have you been a happy person?

☐ All of the time

☐ Most of the time

☐ A good bit of the time

☐ Some of the time

☐ A little of the time

☐ None of the time

64%



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Social Activities

22. During the past 4 weeks, how often did you feel there were people you were close to?

☐ All of the time

☐ Most of the time

☐ A good bit of the time

☐ Some of the time

☐ A little of the time

☐ None of the time

23. During the past 4 weeks, how much of the time have you felt loved and wanted?

☐ All of the time

☐ Most of the time

☐ A good bit of the time

☐ Some of the time

☐ A little of the time

☐ None of the time

24. During the past 4 weeks, how often did you feel isolated from others?

☐ All of the time

☐ Most of the time

☐ A good bit of the time

☐ Some of the time

☐ A little of the time

☐ None of the time

71%



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25. During the past 4 weeks, how much of the time have emotional problems interfered with your social activities with friends, families, relatives etc.?

- ☐ All of the time
- ☐ Most of the time
- ☐ A good bit of the time
- ☐ Some of the time
- ☐ A little of the time
- ☐ None of the time

26. Compared to others your age, are your social activities more or less limited because of your emotional health?

- ☐ Much more limited than others
- ☐ Somewhat more limited than others
- ☐ About the same as others
- ☐ Somewhat less limited than others
- ☐ Much less limited than others

79%



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Maintaining Health and Wellbeing

27. This item relates to the quality of your sleep. How often during the past 4 weeks, did you....

	All of the time	Most of the time	Good bit of time	Some of the time	None of the time
Feel that your sleep was not rested (restless, tense)?	☐	☐	☐	☐	☐
Get enough sleep to feel rested upon waking?	☐	☐	☐	☐	☐
Awaken short of breath or with a headache?	☐	☐	☐	☐	☐
Feel drowsy or sleepy during the day?	☐	☐	☐	☐	☐
Have trouble falling asleep?	☐	☐	☐	☐	☐
Awaken during your sleep time and have trouble falling asleep again?	☐	☐	☐	☐	☐
Have trouble staying awake during the day?	☐	☐	☐	☐	☐
Take naps (5 minutes or longer) during the day?	☐	☐	☐	☐	☐
Get the amount of sleep you needed?	☐	☐	☐	☐	☐

28. How often do you exercise for at least 30 minutes?

(Please state number of times below)

29. Which of the following types of exercise do you do regularly? (Please select all that apply.)

- ☐ Swimming
- ☐ Running
- ☐ Cycling
- ☐ Going to the gym
- ☐ Walking
- ☐ Sports such as football, tennis etc.
- ☐ None of the above
- ☐ Other (please specify)

[Redacted text]

30. Which one of the following best describes why you don't do more physical activity?

- ☐ I don't have time I'm
- ☐ too tired
- ☐ I don't have the willpower/don't want to I
- ☐ don't like exercise
- ☐ I avoid doing more exercise because of my asthma I
- ☐ am afraid of having an asthma attack if I did more I am
- ☐ too breathless to do more exercise
- ☐ My doctor has advised me not to do more exercise than I am currently doing because of my asthma I
- ☐ am doing enough exercise to stay healthy, I do not need to do more
- ☐ None of the above Other
- ☐ (please specify)

[Redacted text]

86%



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31. Which of the following best describes you?

☐ Never smoked tobacco

☐ Have tried tobacco in the past, but do not currently smoke

☐ Used to smoke tobacco regularly, but don't now

☐ Still smoking

☐

32. Approximately how many cigarettes do/did you smoke daily?

☐ 1 - 5 6- 10

☐ 11 - 15 16 -

☐ 20 21 - 30

☐ 31 - 40 41 -

☐ 50 51 +

☐ None - I have never smoked

33. To what extent do you do the following specifically because of your asthma?

	Not at all	Not very much	A fair amount	A great deal
Watch how much alcohol you drink	☐	☐	☐	☐
Do more exercise	☐	☐	☐	☐
Keep yourself healthy	☐	☐	☐	☐
Avoid stress as much as possible	☐	☐	☐	☐
Have a balanced diet	☐	☐	☐	☐
Avoid staying out late	☐	☐	☐	☐
Try to keep a good work-life balance	☐	☐	☐	☐
Avoid areas with alot of smoking	☐	☐	☐	☐
Avoid being near animals or pets	☐	☐	☐	☐

93%



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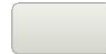
Thank you!

You have now reached the end of the survey. Thank you for taking part.

100%



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Done

