CAN HOME GARDEN BE A SAFE HAVEN IN TIMES OF CRISIS? TO MEASURE HOUSEHOLDERS ATTITUDES, PREFERENCES AND WILLINGNESS TO HAVE HOME GARDEN AT TIME OF PANDEMICS

Noura Mubarak Al Mansouri

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CAN HOME GARDEN BE A SAFE HAVEN IN TIMES OF CRISIS? TO MEASURE HOUSEHOLD ATTITUDE, PREFERENCES AND WILLINGNESS TO HAVE HOME GARDEN AT TIME OF PANDEMICS

Noura Mubarak Al Mansouri

This thesis is submitted in partial fulfilment of the requirements for the degree of Master of Science in Horticulture

Under the Supervision of Dr. Zienab Ahmed

June 2021
Declaration of Original Work

I, Noura Mubarak Al Mansouri, the undersigned, a graduate student at the United Arab Emirates University (UAEU), and the author of this thesis entitled “Can Home Garden be a Safe Haven in Times of Crisis? to Measure Household Attitude, Preferences and Willingness to Have Home Garden at Time of Pandemics”, hereby, solemnly declare that this thesis is my own original research work that has been done, prepared by me under the supervision of Dr. Zienab Ahmed, in the College of Food and Agriculture at UAEU. This work has not previously been presented, published, formed the basis for the award of any academic degree, diploma or a similar title at this or any other university. Any materials borrowed from other sources (whether published or unpublished) and relied upon or included in my thesis have been properly cited and acknowledged in accordance with appropriate academic conventions. I further declare that there is no potential conflict of interest with respect to the research, data collection, authorship, presentation, publication of this thesis.

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Abstract

The new coronavirus that has rapidly become a worldwide outbreak lead people for self-quarantine, were work, school and shopping have become through remote applications. Keeping fit and being healthy are important at any time, especially during the coronavirus pandemic. Having a garden or outdoor space provides the opportunity to have a place that can be used to maintain a healthy life and well-being of an individual. The coronavirus lockdown has provided the time and opportunity to create a garden which has been always wanted by householders. Garden is a plot of ground where herbs, fruits, flowers, vegetables, and etc. are cultivated. Al Ain City is called “the garden city of UAE” and home garden culture is common among the residents. The majority of Al Ain home gardens are mainly utilized for aesthetics purpose. The main objective of this study is to analyze the householder’s awareness and willingness to have home gardens which can enhance their lifestyle, demographic characteristics, and etc. A logistic model was used to analyze the factors affecting the respondent’s preferences of having the garden. According to the results, while the factors such as owning the house, size of backyard, income level, education level, and etc. increase the probability of having the garden, having full-time job and household size had negative effect on probability of having the garden. As a conclusion, it is highly recommended to householders to have home gardens which can provide a quality lifestyle, some fresh vegetable and fruits as alternatives to the retail market, and a leisure time during the pandemic.

Keywords: Pandemic, Home Garden, Lifestyle, Householder, Vegetables, Fruits.
Title and Abstract (in Arabic)

هل يمكن للحديقة المنزلية أن تكون الملاذ الآمن في زمن الجائحة؟
لقياس سلوك وتفصيل أصحاب المنازل ورغبتهم بالحصول على حديقة منزلية في زمن الجائحة

الخصائص

إن فيروس كورونا الجديد الوباي الذي انتشر بسرعة في جميع أنحاء العالم أدى إلى فرض الحجر المنزل، حيث أصبح العمل والمدرسة والتسويق عن بعد من خلال التطبيقات الإلكترونية. الحفاظ على لياقة وصحة الإنسان أمران مهمان في أي وقت، وهما أكثر خصبة أثناء الجائحة. إن امتلاك حديقة حيوية ومساحة خارجية، يوفر الفرصة للحصول على مكان يمكن استخدامه للحفاظ على حياة صحية ويعطي رفاهية للفرد. أتاح الحجر الصحي بسبب فيروس كورونا الوقت والفرصة لإنشاء حديقة لطالما أرادها أصحاب المنزل. الحديقة هي إضافة عن قطعة أرض تزرع فيها الفواكه، الخضراوات، الأعشاب والزهور. هنا في دولة الإمارات تشتهر مدينة العين بأنها المدينة الخضراء بسبب مساحتها الخضراء والواديات والحدائق التي تنتشر في كل مكان من شارع، ميدان، منزل أو حديقة. معظم حدائق العين المنزلية تتم بالشكل الجمالي وليس لأسباب تتعلق بانتاجيتها من الخضراوات والفواكه. الهدف من هذه الدراسة هو تقييم وعي الناس بأهمية وجود حديقة منزلية، والتعرف على الفوائد التي يواجها صاحب الحديقة وتقديم بعض الاستراتيجيات للتعامل مع هذه التحديات. الهدف الرئيسي من هذه الدراسة هو تحليل وعي أصحاب المنزل واستعدادهم لامتلاك حديقة منزلية يمكن أن تعزز وقت فراغه وكونه بديلاً في توفير المنتجات الطازجة. ولتحقيق الهدف من الدراسة تم إعداد وتنفيذ مسح على سكان مدينة العين الذي تم اختيارهم بشكل عشوائي. تضمن الاستبيان تجربة المستجيبين في الزراعة، وتأثير حديقة المنزل على أنماط حياتهم، وخصائصهم الديموغرافية وما إلى ذلك. تم استخدام نموذج لوغستي لتحليل العوامل التي تؤثر على تفضيلات المستجيبين لامتلاك الحديقة. وفقاً للتوزيع، في حين أن عوامل مثل امتلاك المنزل، حجم الفناء الخلفي، ومستوى الدخل، ومستوى التعليم، وما إلى ذلك تزيد من احتمال وجود حديقة، فإن العمل بدوام كامل وحجم الأسرة كان له تأثير سلبي. في الختام، يوجد بيئة ل أصحاب المنازل أن يكون لديهم حديق منزلية يمكن أن توفر أنماط حياة جيدة، وبعض الخضرا والفواكه الطازجة كبدائل لسوق التجارة.
مفاهيم البحث الرئيسية: الجائحة، الحديقة المنزلية، نمط الحياة، أصحاب المنازل، خضروات، فواكه.
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Dedication

To my beloved parents and family
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Chapter 1: Introduction

1.1 Overview

The coronavirus that began in central China has rapidly become a worldwide outbreak, shutting down entire cities, threatening the health of thousands and instantaneously testing the strength of the global economy. Schools, universities, libraries, museums, and theatres were shut down. Self-quarantine, work from home, online schools and shopping become the new life style. Some people choose to seclude themselves even if they are not sick, because they were frightened to be infected or they don’t want to put others at risk. Maybe few obstacles will face people in future, forcing them to commit themselves to stay at home.

Because of the extreme contagiousness of COVID-19, unnecessary activity outside is strongly discouraged. Within a few days, the daily life was turned upside down and the old habits forced to change. Despite these distractions, some people had to reduce all their accumulated mental stress, psychological burden and, why not, make themselves partly self-sufficient from a food standpoint, while not living in the countryside and having open spaces to cultivate. (Bratman et al., 2012; Russell et al., 2013; Shwartz et al., 2013; Pope et al., 2018, Sofo & Sofo, 2020).

Additional benefits of spending time in natural environments include physical exercise and better physical health, improved sleep quality, and social interaction (Coombes et al., 2010; Maas et al., 2009; Mytton et al., 2012; Corley et al., 2021).
Having a garden or outdoor space, provides the opportunity to have a place that can be used to maintain a healthy life and well-being of an individual. In addition to that, enjoying the beauty of ornamental plants and consuming some products produced in home gardens will increase house holder’s satisfactions.

It seemed something needed to be done to keep the peoples’ bodies and minds active and fed. Setting up a home vegetable garden seemed to be a good alternative for having a quality time at home. The idea seems, at a first glance, strange and inappropriate - considering the number of current and future problems - but, it seemed to be a requirement and needed to be done. With people now facing uncertain and difficult times in the face of COVID-19, it has been thought that this research might contribute a good outcome to the literature and help decision makers’ awareness about the home gardens.

Garden is a plot of ground where herbs, fruits, flowers, or vegetables and ornamental plants are cultivated (Merriam-Webster, 2020). Ornamental plants are plants that are grown for decorative purposes in gardens, while other plants are grown for consumption. Gardening can be a great way to enjoy the outdoors, it is considered by many people to be a relaxing activity during weekends and vacations. Home garden needs special techniques and caring to maintain its vigorous and productivity. The householders need to be aware of how to take care of their home garden, determining soil health, irrigation system, season of planting, uses of fertilizers, mowing, pruning, plants disorders, diseases.

It’s great to have a positive mindset during crisis and make the most out of such circumstances. This study will be document and discuss the impact of the pandemic COVID-19 on the daily life style. The opportunity of discussing this crisis need to be avail now. Although it is a temporary crisis, there is still sufficient reason to underline
a change in people’s lifestyle and the importance of relying on the own resources without having to search out the homes. The gardens can be a good alternative in providing fresh food products for family consumption. But moments of crisis also present opportunities for instance more sophisticated and flexible use of technology; less polarization and revived appreciation for the outdoors and life’s other simple pleasures (Montefrio, 2020).

Al Ain city is commonly referred to as the “garden city” due to its green areas, oases and parks. A majority of the residences in the city possess a home garden. Therefore, having landscaped space that does not only look great, but also improves the environment around people will be profoundly valuable.

Most of Al Ain home gardens serves for aesthetics purposes, and is not set up mainly for agricultural production. This proposed research study will investigate the agriculture aspects and the challenges of having a home garden. Some of the challenges that may face the home gardener are the insufficient space, the lack of time, high cost of materials, and limited experience.

Access to nature and urban green space is increasingly being recognized as playing an important role in COVID-19 recovery plans (Ahmadpoor & Shahab, 2020; Ferrini & Gori, 2020). Urban permaculture can be concrete and pragmatic, aimed at the production of food in urban areas, replacing ornamental plants with edible species. The selection of plant species to cultivate in outside home spaces should be based primarily on their ability to cope with the harsh conditions of the urban environment, such as high wind and irradiance, lack of organic material and nutrients, and intermittent drought (Pavao-Zuckerman, 2008). Therefore, careful plant selection should be integrated into outside space design (Lee et al., 2014; John et al., 2016; Chaudhary et al., 2019; Sofo & Sofo, 2021).
Providing a gardener in each neighborhood with the required knowledge to perform periodic checks and assistance regarding the home garden is crucial. They could be guided and trained on modern methods of agriculture and caring for plants through workshops and training courses; in addition to providing the materials and tools, which will be fairly accessible, such as seeds, plants and soil.

A vegetable garden in home spaces can provide recreation, enhance physical and mental health, and provide economic and environmental benefits (Dunnett & Qasim, 2000; Hartig et al., 2014; Jennings & Gaither, 2015).

Encouraging people to establish their own home garden and advising them to have some parts of their own sources of food will increase their utility/satisfaction. Fresh, healthy, organic, and pesticides- and chemicals-free products can be achieved through organic cultivation via home gardens. Using the own resources to meet the food demands is helpful, especially during a time of crisis.

It is time to think about a new way of living that starts from daily activities, with a small-scale and bottom up approach, based on sustainable use of natural resources and promotion of a subsistence economy and bartering, aimed at lasting well-being in generations both in material terms (food and energy) and psychological terms, able to integrate various disciplines (such as agriculture and animal husbandry, forestry, biology, architecture, engineering, but also economics, sociology, philosophy, and psychology), tending towards self-sufficiency, self-regulation, sustainability, and environmental protection.

Domestic gardens are an important component of green infrastructure, yet their specific contribution to wellbeing is rarely assessed relative to urban green space (Dennis & James, 2017), with a couple of exceptions. Two recent population surveys in the UK indicate that having access to, and spending time in private gardens, is
positively associated with enhanced wellbeing (Brindley et al., 2018; De Bell et al., 2020).

To establish a healthy garden devoid insects/diseases free vegetables and fruit, some level of expertise is needed. Such experts will ease the difficulties and the challenges home gardeners facing and will change their perceptions on gardening. The garden of the householder is a safe haven in times of crisis, from where they can acquire fresh vegetables and fruits as well as can be an outdoor area of relaxation. All products are organic, pest/disease-free and healthy.

After reviewing the literature, there is very limited data collected from within the UAE regarding this topic to date; however, much research has been conducted globally concerning the evaluation of production of home gardens from different angles. The results revealed that small-scale farmers in Eastern Cape Province lack awareness of improved agricultural practices and technical knowhow (Ogundiran et al., 2014).

The present study highlighted the significance of issuing an agricultural engineer within the community, who can provide consultancy within residential neighborhoods, as well as the presence of shops offering supplies and tools for agriculture in the closest markets. The research will also contribute to the importance of educating people about household agricultural products and attaining the benefits of it via workshops, training, and etc. that might be conducted in the future by stakeholders.

This research is expected to provide information that will become a reference and help the decision makers to contribute and solve the challenges that faced by home gardeners and aid them in dealing with such challenges in the future.
1.2 Home Garden and Cultivation Methods

Gardens are the lungs through which cities breathe, with the trees and plants they have which clean up the air from excess carbon dioxide and provide oxygen. Healthy environment for the human being can be creating by increasing the area of gardens as well as having the aesthetic and creative elements for gardening.

No matter how small of the home gardens are, one can start with pots then increase gradually and eventually with the experience he/she will gain then the garden will be huge plots of plants. There are many designs for garden such as; formal garden which is a symmetrical layout that has repetition and pattern, and informal garden which are random and looks more natural (Twedt, 2016). Now people changed their idea about the purpose to have home garden like décor, it became more as an extra outdoor room for several activities and events.

The importance of home garden to the environment is numerous, as it is establishing new habitat for different kind of plants species and different insect, birds, even fungi and bacteria. Garden help to reduce the negative impacts of climate change, global warming and air pollution. The benefits of gardens are also linked to the restorative properties of nature. Exploring nature especially for children through the garden they are discovering the world, to develop their skills and knowledge (Waliczek et al., 2000).

Start gardening is not hard; the beginning of cultivation is to choose the propagation method. In sexual method, seeds are sown in the fields by methods like broadcast, dibbling, or are placed in drills or holes. The seeds must be of good quality, have high germination rate, and free from diseases. In asexual methods (vegetative propagation), any of the vegetative part of the plant like root or stem can grow and
develop into new plants. Other special parts such as bulbs, tubers, ryzomes can produce new plants. Other methods such as layering, grafting can be also much fun to try to produce plants (Vogl & Vogl-lukasser, 2004).

It does not matter how much land is available for cultivating plants, as householder can start planting in a small area and then move the plant to a larger area. Planting inside a pot is an easy way if there is no arable land. The modern method of agriculture makes it easier for farmers, such as hydroponics, where it is possible to dispense with soil mines and rely only on water to grow plants. Plant/tree sizes can be controlled as desired depends on space and availability, or vertical system can be utilized to grow crops especially in the limited space garden. Cultivation in greenhouses or shaded houses contributes to providing a suitable environment for plants, where temperature, humidity and sunlight are not suitable. Small greenhouse with hydroponic system can be done on a small scale in a home garden.

Native plants contribute to the process of environmental sustainability, since they tolerate the harsh climate and environment better than exotic plants because they rarely adapt to the new environment. Date palms are among the most prominent local plants in Al Ain, and many of the gardens contain palm trees. Everyone seeks to obtain a good production of different date varieties. They collected date fruit during the season and store the fruit to be used throughout the year.

1.3 Care and Maintenance

Seeds have to be from a reliable source. To choose the type of seed or seedling is very important to avoid potential damage to the planting. The pure seeds ensure a good yield, as they rarely fail and are easy to grow (save effort and money for compost
or pesticides). Sterilized seedlings are also important to avoid transferring agricultural pests to the garden, as they may be laden with insects or eggs.

Take care of the garden is not an easy task, as it is requiring a balance between plants, soil, and water to provide suitable environment for plant growth. Each plant differs from the other in terms of needs, some species grow in a type of soil (clay / sandy...), others require a certain amount of watering (once a day / twice) and others do not tolerate direct sunlight and prefer shade. Planning in advance the type of plant to grow in the garden will facilitate maintenance and save time.

Some of the important practices for garden maintenance are turning the soil over (tillage) and sterilizing it before starting cultivation. Another important practice is the process of pruning, as it controls plant growth, shows the desired shape and improve fruit production.

Irrigation systems to be installed in the home garden differ from one to the other, some prefer the manual irrigation system and others prefer the automatic irrigation system. There are different types of irrigation; drip irrigation, sprinkler irrigation. Drip irrigation is useful for controlling the amount of water for each plant, helping to preserve water. Sprinkler irrigation is useful for watering a large area of grass.

Weeds; plant that causes economic losses or ecological damages, creates health problems for humans or animals are undesirable in the garden. Weeds are one of the most important problems that home garden owners face, some weeds compete with garden plants for nutrients, water, and light, as well as harbor diseases and pests. Weed control is important in agriculture. Methods include hand cultivation with hoes, powered cultivation with cultivators, smothering with mulch, burning, and chemical control with herbicides.
A healthy garden requires regular maintenance throughout the growing season. Most plants require sun, water and nutrients to produce well. The duration of care depends on the planting season, plant size and variety, the amount of water that a young plant needs is less and different from the amount of water that a large plant needs. The agricultural season is very conducive to maintenance and care. Soil fertilization is required if high production is needed. There are several types of fertilizers, the liquid mineral or organic type and the powdered type, where some of them benefit the plant directly, while others take time to be available in the soil and absorbed by the plant. (Surat & Yaman, 2017)

Quality selection of agricultural equipment such as fertilizer, pesticides, seeds and agricultural tools is important to have a healthy, organic and high productive garden. Recycling can facilitate maintenance, save money and save time. For example, making compost from organic household waste” vegetables or fruits”, using some spices to eliminate agricultural pests, using flower seeds in agriculture (Thomas et al., 2020).

1.4 Pandemic and Food Security

Statistics indicated high number of park and garden attendance all around the world during pandemic. Most countries have re-opened garden centers by 96% and a lot of young people have started to work with plants and gardens during the crisis. As behavior of consumers changed, garden items have been the most popular products for lockdown home delivery (Campbell et al., 2020). Because of the difficulty of travel, people went to gardening and spend their money on decorating and caring for the garden more than before.
In the past, people did not need to cook a lot because they can go out and eat outside, but in this crisis, people were forced to work and study from home, which reduces the visits to stores and shops, and thus cooks more than usual. Having fresh food next to people will keep them from going outside and motivate them to eat more of healthy food.

About 40% of all fruits and vegetables produced for human consumption are wasted, because of transportation or at storage (Ogundiran et al., 2014). Having some level of fresh food products close to the consumers via home garden practices can be considered an alternative way of reducing food waste.

Turning to vegetable gardening as a means to occupy time, eases some level concerns over potential food shortages, and live a healthier lifestyle. Production of fruits or vegetables in home garden allows picking it when it's ripen, not the same way market important fresh and immature produce.

1.5 Thesis Aim

The main objective of the study was to analyze the house holder’s preferences and their willing to construct a home garden in Al Ain. During the pandemic, householders began to take care of their gardens, as it is the only outlet. As they began to explore and discovering their home garden and its needs. The specific objectives were to:

- Determine the current structure of home gardens and their value in house holder's culture.
- Identify the challenges and constraints faced by house gardener.
- Analyze the factors affecting the house holder’s decision of having the gardens.
- Make some recommendations to decision makers in assisting home gardeners for their efforts to tackle these challenges.

1.6 Hypotheses to be Tested

H1: The house holders in Al Ain prefer and are willing to have home garden.
H2: Home gardens provide some level of food products for house holders.
H3: The house holders want to have home gardens for aesthetic reasons.
H4: Home gardens enhance the house holder’s quality of life.
Chapter 2: Materials and Methods

The data required for the analysis has been collected via survey and secondary data sources. The questions in the survey have been divided into 4 parts.

2.1 Data Collection via Questionnaire Survey

A survey instrument has been developed to analyze the current structure of home gardens in Al Ain, house holder’s preferences and willing to establish a house garden, the challenges they face, and the assistance they expect from decision makers. Al Ain city population is 766,936, sample needed was 384 respondents to represent the population but the respondents were 663 which increases the representation power of the sample for the population.

The questionnaire was structured as:

• Part I: Questions for determination of householder’s awareness and knowledge about home garden and cultivation methods.

• Part II: Questions for analyzing their preferences and willingness to adopt home gardening practices, and how they care and maintenance.

• Part III: Questions regarding to pandemic and food security.

• Part IV: Demographic questions of the owner such as age, monthly income and etc.

The questionnaire was conducted on 663 randomly selected house holders in Al Ain. There was a total of 42 question in survey and prepared both in English and Arabic. The questionnaire consists of four parts: part 1) The determination of home
garden and cultivation methods, such as purpose of garden, kind of crops they produce (vegetables, fruit, flowers, native, herbs ...) time they prefer to plant, others cultivation methods rather soil (greenhouse, hydroponic...) obstacles to not have home garden (no space, no time, expensive ...), Part 2) How people care and maintain their home garden, such ask about the difficulties, irrigation system, how often they care, how they deal with difficulties (ask friend or expert ..) where they provide the equipment seeds and tools (nurseries or market or websites ..), Part 3) The concern about the pandemic and food security, and Part 4) Demographic information, such as age, gender, accommodation.

2.2 Sampling Procedure

The survey was conducted under crisis situation, as people went to gardens and outdoors, which increased the importance of having a garden, it is difficult to go out at ban time to select a sample of home gardens, and designing an online questionnaire was the best way to get the responses. The survey focused on people who have home garden in Al Ain city and for those whom are willing to have.

The survey was distributed through emails to all UAEU members, stuff, students and teachers; and was distributed through WhatsApp and social media presenters, to families, friends and different groups. A poster with the questionnaire logo and the questionnaire link barcode has been created. 15 posters were prepared and 100 A4 paper printed poster. These posters were distributed around the most important agricultural areas in the city of Al Ain, Al-Bawadi nurseries, ACE Hardware garden section, Daiso garden section, supermarkets such souq planet, AL Jimi Mall main entrance, some cafes such MU cafe, restaurants such AlDallah AlShameyah and places that sell fresh vegetables. Also, one poster was displayed at Crescent Building,
United Arab Emirates University, installing some posters on the wall, elevator, grocery, corridors, doors, and important entrances on campus.

Motivational prizes were given to those interested in taking the questionnaire, the gifts were a set of various seeds for flowers and vegetables, to encourage survey participants to start with the first step of planting. The gifts were placed in a basket near the poster, however not all posters were placed with gifts because there are restrictions preventing distributions due to laws from the government in light of the Corona pandemic. The poster was decorated by placing a grass carpet in the front strewn with vegetables and representative fruits to draw the attention of the passersby to stand and participate in the survey.

2.3 Statistical Analysis

A deterministic statistical analysis of data was conducted to see the general structure of variables (mean, median, max. min. values and etc.) used in the research. Frequency was used to count the number of times each event occurred in an experiment. Microsoft Excel was used for data entry and preparation of graphs and charts. Analysis was done using IBM Statistical Package for Social Science (SPSS).

2.4 Logistic Model

The householders in Al Ain were randomly selected and surveyed. Based on the conducted survey, the questions were coded and entered to excel sheet. In addition to deterministic statistics and frequency tables, logistic regression models were utilized to see the kind of factors affecting the householders to have home gardens. SPSS econometrical program was used for the analysis of data.
The Logit Model assumes the probability of an outcome occurrence, \( P_i \), is dependent on a number of independent variables \( (X_{ij}) \) associated with respondents \( i \) and variable \( j \), and a number of unknown parameters \( \beta \) (Maddala, 1983; Long & Long, 1997). The model is stated as

\[
P_i = \Pr(y_i = 1|x_i) = \frac{\exp(x_i\beta)}{1 + \exp(x_i\beta)} = \frac{1}{1 + \exp(-x_i\beta)}
\]

Where the right-hand side of equation 1 is the cumulative distribution function (cdf) of probabilities of having home garden and the variance for the logistic distribution is:

\[
\sigma^2 = \pi^2 / 3.
\]

\( P_i \) = is the probability that a householder has a home garden

\( i = 1, 2, \ldots, n \) are number of respondents

\( x_i \) = the \( n^{th} \) explanatory variable for the \( i^{th} \) respondent’s of having home garden

\( \beta \) = the parameters to be estimated; and \( \epsilon \) is the error term

The likelihood of observing respondent’s probability of having home garden was hypothesized to be a function of a set of independent variables as will be illustrated in results section.
Chapter 3: Results

The online home garden survey of 663 owners of garden in Al Ain city found that most of them have a productive home garden with both fruits and vegetables. The most kind of fruit was lemon 66.6%, while of vegetables was tomato 54.4%. date palm is common to all 90.6%. About 52.4% respondents preferred to ask agricultural expertise to help dealing with the maintenance and difficulties of the home garden. The majority thought about the importance to have a productive home garden during the pandemic and to ensure food security, as well as they agreed and suggested to provide each neighborhood with agricultural expertise who can give training and workshop that help to guide gardeners with the right information (According to Table 1).
Table 1: Questions for determination of householder’s awareness and knowledge about home garden and cultivation methods. The kind of crops produced in home gardens (N=663). Data were analyzed using frequency test.

<table>
<thead>
<tr>
<th>Products</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes (%)</td>
</tr>
<tr>
<td>If the responded has a home garden</td>
<td>89.4</td>
</tr>
<tr>
<td>If the responded would like to have a home garden that produces vegetables and fruits?</td>
<td>93.8</td>
</tr>
<tr>
<td>If the aim of the garden is for an aesthetic purpose only</td>
<td>19.5</td>
</tr>
<tr>
<td>Is there a food crop from the garden?</td>
<td>80.8</td>
</tr>
<tr>
<td>If they have vegetables crop</td>
<td>25.5</td>
</tr>
<tr>
<td>If they have fruit crop</td>
<td>11.1</td>
</tr>
<tr>
<td>If they have both crops</td>
<td>56.6</td>
</tr>
<tr>
<td>When do the respondent prefer to plant (summer months)</td>
<td>15.8</td>
</tr>
<tr>
<td>Do they prefer to plant directly in the soil</td>
<td>71.4</td>
</tr>
<tr>
<td>How do they prefer to do the cultivation? (seeds)</td>
<td>36.4</td>
</tr>
<tr>
<td>Do the respondent use methods of cultivation other than using soil? greenhouse</td>
<td>7.2</td>
</tr>
<tr>
<td>Do the respondent use methods of cultivation other than using soil? hydroponic</td>
<td>89.4</td>
</tr>
<tr>
<td>Do the respondent use methods of cultivation other than using soil? pots</td>
<td>43.3</td>
</tr>
<tr>
<td>Do the respondent use methods of cultivation other than using soil? Others</td>
<td>33.5</td>
</tr>
<tr>
<td>Does the respondent prefer to harvest own food from the garden?</td>
<td>46.5</td>
</tr>
<tr>
<td>Obstacles that cause unwillingness to have a productive garden? Not enough space</td>
<td>38.8</td>
</tr>
</tbody>
</table>
Table 1: Questions for determination of householder’s awareness and knowledge about home garden and cultivation methods. The kind of crops produced in home gardens (N=663). Data were analyzed using frequency test. (continued)

<table>
<thead>
<tr>
<th>Products</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obstacles that cause unwillingness to have a productive garden? No time</td>
<td>Yes (%) 23.8</td>
</tr>
<tr>
<td></td>
<td>No (%) 76.2</td>
</tr>
<tr>
<td>Obstacles that cause unwillingness to have a productive garden? expensive</td>
<td>Yes (%) 21</td>
</tr>
<tr>
<td></td>
<td>No (%) 79</td>
</tr>
<tr>
<td>Obstacles that cause unwillingness to have a productive garden? tiring</td>
<td>Yes (%) 17.2</td>
</tr>
<tr>
<td></td>
<td>No (%) 82.8</td>
</tr>
<tr>
<td>Obstacles that cause unwillingness to have a productive garden? Needs experience and knowledge</td>
<td>Yes (%) 64</td>
</tr>
<tr>
<td></td>
<td>No (%) 36</td>
</tr>
<tr>
<td>Does respondent prefer to design their home garden by themselves?</td>
<td>Yes (%) 89</td>
</tr>
<tr>
<td></td>
<td>No (%) 11</td>
</tr>
<tr>
<td>Kinds of vegetables are there? cucumber</td>
<td>Yes (%) 23.6</td>
</tr>
<tr>
<td></td>
<td>No (%) 76.4</td>
</tr>
<tr>
<td>Kinds of vegetables are there? tomato</td>
<td>Yes (%) 54.4</td>
</tr>
<tr>
<td></td>
<td>No (%) 45.6</td>
</tr>
<tr>
<td>Kinds of vegetables are there? onion</td>
<td>Yes (%) 33.2</td>
</tr>
<tr>
<td></td>
<td>No (%) 66.8</td>
</tr>
<tr>
<td>Kinds of vegetables are there? potato</td>
<td>Yes (%) 17.6</td>
</tr>
<tr>
<td></td>
<td>No (%) 82.4</td>
</tr>
<tr>
<td>Kinds of vegetables are there? carrot</td>
<td>Yes (%) 82.4</td>
</tr>
<tr>
<td></td>
<td>No (%) 17.3</td>
</tr>
<tr>
<td>Kinds of vegetables are there? lemon</td>
<td>Yes (%) 58.4</td>
</tr>
<tr>
<td></td>
<td>No (%) 41.6</td>
</tr>
<tr>
<td>Kinds of vegetables are there? mushroom</td>
<td>Yes (%) 3</td>
</tr>
<tr>
<td></td>
<td>No (%) 97</td>
</tr>
<tr>
<td>Types of fruit trees in the garden? figs</td>
<td>Yes (%) 41.2</td>
</tr>
<tr>
<td></td>
<td>No (%) 58.8</td>
</tr>
<tr>
<td>Types of fruit trees in the garden? mango</td>
<td>Yes (%) 51.9</td>
</tr>
<tr>
<td></td>
<td>No (%) 48.1</td>
</tr>
<tr>
<td>Types of fruit trees in the garden? orange</td>
<td>Yes (%) 18.1</td>
</tr>
<tr>
<td></td>
<td>No (%) 81.9</td>
</tr>
</tbody>
</table>
Table 1: Questions for determination of householder’s awareness and knowledge about home garden and cultivation methods. The kind of crops produced in home gardens (N=663). Data were analyzed using frequency test. (continued)

<table>
<thead>
<tr>
<th>Products</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td>Types of fruit trees in the garden? pomegranate</td>
<td>Yes (%)</td>
</tr>
<tr>
<td></td>
<td>43.4</td>
</tr>
<tr>
<td>Types of fruit trees in the garden? berries</td>
<td>32.9</td>
</tr>
<tr>
<td>Types of fruit trees in the garden? bananas</td>
<td>13</td>
</tr>
<tr>
<td>Types of leafy vegetables? lettuce</td>
<td>27.9</td>
</tr>
<tr>
<td>Types of leafy vegetables? coriander</td>
<td>38.9</td>
</tr>
<tr>
<td>Types of leafy vegetables? Parsley</td>
<td>41</td>
</tr>
<tr>
<td>Types of leafy vegetables? mint</td>
<td>41</td>
</tr>
<tr>
<td>Types of leafy vegetables? Rocca</td>
<td>44.9</td>
</tr>
<tr>
<td>Types of flowers in the home garden? rose</td>
<td>45.9</td>
</tr>
<tr>
<td>Types of flowers in the home garden? jasmine</td>
<td>68.5</td>
</tr>
<tr>
<td>Types of flowers in the home garden? lavender</td>
<td>61.6</td>
</tr>
<tr>
<td>Types of flowers in the home garden? sunflower</td>
<td>18.6</td>
</tr>
<tr>
<td>Types of flowers in the home garden? bougainvillaea</td>
<td>52.3</td>
</tr>
<tr>
<td>Types of flowers in the home garden? nothing</td>
<td>6.9</td>
</tr>
<tr>
<td>Native plants in the garden? Date Palm</td>
<td>84.6</td>
</tr>
<tr>
<td>Native plants in the garden? Gahf</td>
<td>23.4</td>
</tr>
<tr>
<td>Native plants in the garden? Seder</td>
<td>69.5</td>
</tr>
<tr>
<td>Native plants in the garden? Henna</td>
<td>23.2</td>
</tr>
<tr>
<td>Native plants in the garden? Arta</td>
<td>7.2</td>
</tr>
</tbody>
</table>
Table 1: Questions for determination of householder’s awareness and knowledge about home garden and cultivation methods. The kind of crops produced in home gardens (N=663). Data were analyzed using frequency test. (continued)

<table>
<thead>
<tr>
<th>Products</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes (%)</td>
</tr>
<tr>
<td>Cactus in the garden?</td>
<td>63.5</td>
</tr>
<tr>
<td>Any natural preparation from aloe Vera, henna, or any plant from the garden?</td>
<td>57.9</td>
</tr>
<tr>
<td>Production of dates in the garden?</td>
<td>72.5</td>
</tr>
<tr>
<td>If respondent prefer genetically modified plants (ornamental or vegetable)</td>
<td>19.2</td>
</tr>
</tbody>
</table>

First, the question was whether householders they have a home garden, 89% said yes, while 10.6% said no, then if they would like to have a home garden that produces vegetables and fruits with an approval rating of 93.8%, As well as who objected and said no, their percentage was 6.2%. Moreover, the question whether the aim of their garden is for aesthetic purpose only, the response came in yes, at an unexpected rate, reaching 19.5%, on the other hand the percentage of those wanting to benefit from other things from their garden reached 80.5%, since householders wants to have production from fruit and vegetables not only for decorative reasons. Furthermore, if they have food crop in their garden, the percentage of those who said yes was 80.8% which means that most of them prefer to have production, and 19.2% of those who don’t have any food crop.

Some people like to produce one kind of crop, for vegetables the percentage of those who said yes was 80.8%. In addition, whether they have fruit, and the answer came with a percentage of those who said no 88.9%. Likewise, those who have both fruit and vegetables said yes 56.6%. There were differences in preference of timing for
production in home garden. While some householders prefer to plant in winter (84.2%) some prefer to produce in summer season (15.8%).

Do householders start there planting in the soil, the results indicated that the percentage of those who planted directly in the soil amounted to 71.4%, on the other hand those who did not directly planted accounted for 28.6%.

There are many ways to cultivate plant, results showed that the percentage of those who prefer to plant with seeds was 36.4% which is low and those who prefer seedlings, their percentage was 63.6% which is high.

Besides, to know what type of methods householders used rather soil, for greenhouse those who said no their rate was 92.8%. Using hydroponic methods was the highest methods householders prefer 89.4% said yes while 10.6% said no. Pots methods showed an approval rating of 43.3%, as well as those who objected and said no their percentage was 56.7%.

Pick up products from the garden is fun and joy, the answer if householders prefer to harvest their own food from the garden, the percentage of those who said sometimes 47.5%, yes was 46.5%, beside 0.6% said no they are not interested.

There are reasons that lead to abstaining from planting and obtaining a home garden, so to find out the obstacles that divert respondent unwillingness to have a productive garden.
Figure 1: The factors affecting respondents unwilling to have productive home garden (N=663). Different letters indicate the significance between the factors using T-test at P=0.05.

As can be seen from the graph, in the first place the highest constraint its needs experience and knowledge 64.0% said yes. In second place, the obstacles that cause unwillingness to have a productive garden there is no enough space, the percentage of those who said yes was 38.8%. No time obstacles that cause unwillingness the percentage who said yes 23.8%. Some are seeing its expensive the answer was given by the percentage of those who said yes 21.0%. Tiring by the percentage of those who said yes was 17.2%, according to Figure 1.

Results showed that the percentage of those who prefer to design their home garden was 89.0%, and those who said no was 11.0%. there were many questions about the types of plants grown in the home garden, including vegetables, fruits, native plants, flowers and leafy vegetables. The results indicate kinds of vegetables are in garden, the highest production was for tomato 54.4%, onion 33.2%, cucumber 23.6%, potato 17.6%, carrot 17.3%, mushroom 3.0%. 
Among the fruits grown in the home garden, lemon had the highest share 58.4%, then mango 51.9%, pomegranate 43.4%, figs 41.2, berries 32.9%, orange 18.1%, bananas 13.0%. Similarly, among the types of leafy vegetables grown in the home garden, Rocca was the highest 44.9%, then mint and parsley have same percentage 41.0%, coriander 38.9%, lettuce 27.9%.

The beautiful and important element of the garden is the presence of flowers and roses, white jasmine the owner of the fragrant smell has 68.5%, attractive purple lavender 61.6%, colorful bougainvillea 52.3% which can tolerate high temperature and drought, charming rose 45.9%, sunflower 18.6%. The local plant is more suitable for sustainability, so, among the native plants the date palm has the highest 84.6%, Seder 69.5%, Gahf 23.4%, Henna 23.2%, Arta 7.2%.

Whether if householders have cactus in their home garden, 63.5% said yes. In addition, if they make a natural preparation from Aloe Vera, Henna, or any plant from the garden, 57.9% said yes. Also, if there is production of dates in the garden 72.5% said yes.
According to Figure 2, the majority does not prefer to grow genetically modified plants, 35.7% said no, while 19.2% said yes, 45.1% said sometimes they prefer.

According to Table 2, of 663 respondents 56.9% indicated that it was difficult to take care of home garden. The irrigation system householders used, 60.5% manual irrigation system, alternatively, automatic irrigation system 37.3%. In addition, come to question if there are harmful weeds in the home garden, the percentage of those who said yes was 36.8, beside 63.2 said no. and whether they find it difficult to resist weeds, the percentage of those who said yes was 36.1%, likewise those who objected and said no reached 63.9%.
Table 2: Questions for analyzing their preferences and willingness to adopt home gardening practices, and how they care and maintenance (N=663). Data were analyzed using frequency test.

<table>
<thead>
<tr>
<th>Management</th>
<th>Option</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes (%)</td>
</tr>
<tr>
<td>Difficulty to take care of the garden</td>
<td>56.9</td>
</tr>
<tr>
<td>Type of irrigation system: manual</td>
<td>60.5</td>
</tr>
<tr>
<td>Type of irrigation system: automatic</td>
<td>37.3</td>
</tr>
<tr>
<td>Harmful weeds</td>
<td>36.8</td>
</tr>
<tr>
<td>Difficult to resist weeds</td>
<td>36.1</td>
</tr>
<tr>
<td>Who takes care of the home garden? I (me)</td>
<td>36.4</td>
</tr>
<tr>
<td>Who takes care of the home garden? House worker</td>
<td>60.2</td>
</tr>
<tr>
<td>Who takes care of the home garden? company</td>
<td>1.4</td>
</tr>
<tr>
<td>Who takes care of the home garden? No one</td>
<td>1.4</td>
</tr>
<tr>
<td>How often respondent take care of plants? (Daily)</td>
<td>57.1</td>
</tr>
<tr>
<td>How respondent dealing with difficulty of the garden/ Ask friend</td>
<td>41.7</td>
</tr>
<tr>
<td>How respondent dealing with difficulty of the garden/ Ask agricultural expert</td>
<td>52.3</td>
</tr>
<tr>
<td>How respondent dealing with difficulty of the garden/ Ask municipality</td>
<td>5.9</td>
</tr>
<tr>
<td>Where do the respondent get agricultural equipment/ Nurseries</td>
<td>68.2</td>
</tr>
<tr>
<td>Where do the respondent get agricultural equipment/ Market</td>
<td>67.8</td>
</tr>
<tr>
<td>Where do the respondent get agricultural equipment/ Websites</td>
<td>15.7</td>
</tr>
<tr>
<td>Where do the respondent get agricultural equipment/ municipality</td>
<td>11.8</td>
</tr>
<tr>
<td>Where do the respondent get agricultural equipment/ recycling</td>
<td>7.1</td>
</tr>
</tbody>
</table>
The garden always needs attention, following this, the question was asked householders to know who take care of the home garden, house worker 60.2% highest, themselves 36.4%, 1.4% they ask for company to take care of their home garden, 1.4% no one take care of garden. How often householders take care of plants results showed 57.1% daily, 35.5% weekly, 6.1% monthly, 1.4% yearly. There are many ways to deal with the difficulties of a home garden, therefore how they deal with difficulties and what they do, 52.3% they ask agricultural expert, 41.7% asked their friends, 5.9% asked municipality.

According to Figure 3, 68.2% of householders get the agricultural equipment from nurseries, moreover, householders prefer to buy also from market 67.8%, 15.7% prefer to order online from websites, some 11.8% get from municipality, 7.1% do recycling of materials.

Figure 3: Source of agricultural equipment that house holders get (N=663). Different letters indicate the significance between the factors using T-test at P=0.05.
According to Table 3, the opinion of the participants in proposing solutions that help reduce the difficulties that they face. One of the suggestion, whether they think the existence of a shop selling agricultural supplies is necessary in every neighborhood, 48.7% Strongly Agree, 36.3% said Agree, 11.3% Neutral, 3.6% said Disagree and 0.2% Strongly Disagrees. As well as, if respondent support providing engineers and agricultural specialists for every neighborhood, with an approval rating of 44.0% Strongly Agree, 37.0% said Agree, 15.5% Neutral, 2.9% said Disagree and 0.6% Strongly Disagrees. Lastly, whether they support attending training workshops to care for the garden, the response came in 52.4% Strongly Agree, 33.6% said Agree, 10.2% Neutral, 3.3% said Disagree and 0.5% Strongly Disagrees.

Table 3: Proposing facilities that help to have a garden, questions for analyzing their preferences and willingness to adopt home gardening practices, and how they care and maintenance (N=663). Data were analyzed using frequency test.

<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly Agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly Disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you think the existence of a shop selling agricultural supplies is necessary in every neighborhood</td>
<td>48.7</td>
<td>36.3</td>
<td>11.3</td>
<td>3.6</td>
<td>0.2</td>
</tr>
<tr>
<td>Do you support providing engineers and agricultural specialists for every neighborhood</td>
<td>44</td>
<td>37</td>
<td>15.5</td>
<td>2.9</td>
<td>0.6</td>
</tr>
<tr>
<td>Do you support attending training workshops to care for the garden</td>
<td>52.4</td>
<td>33.6</td>
<td>10.2</td>
<td>3.3</td>
<td>0.5</td>
</tr>
</tbody>
</table>

According to Table 4, householders was indicated the level of agreement or disagreement for the importance of home garden during crisis. To begin with, the answer if a productive home garden is essential for everyone, the response came in
62.9% Strongly Agree, 27.9% said Agree, 8.0% Neutral, 1.1% said Disagree and 0.2% Strongly Disagrees.

Householders see that the importance of home garden to supplies healthy, organic food to family members with an approval rating 64.5% Strongly Agree, 27.8% said Agree, 6.8% Neutral, 0.8% said Disagree and 0.2% Strongly Disagrees.

Table 4: The respondent’s opinion regarding to the importance of home garden during the pandemic COVID-19 (N=663). Data were analyzed using frequency test.

<table>
<thead>
<tr>
<th>Sentences</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you see a productive home garden essential for everyone</td>
<td>62.9</td>
<td>27.9</td>
<td>8</td>
<td>1.1</td>
<td>0.2</td>
</tr>
<tr>
<td>Do you see that the home garden supplies healthy, organic food to family members</td>
<td>64.5</td>
<td>27.8</td>
<td>6.8</td>
<td>0.8</td>
<td>0.2</td>
</tr>
<tr>
<td>Do you see the importance of home garden in times of pandemics and disasters</td>
<td>78.4</td>
<td>19</td>
<td>2.4</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Do you think that the home garden can be an alternative to going out to the market to buy fresh products</td>
<td>54.9</td>
<td>26.8</td>
<td>13</td>
<td>4.2</td>
<td>1.1</td>
</tr>
<tr>
<td>Do you think that garden products are sufficient if they cannot be found in the market during the days of the ban</td>
<td>34.3</td>
<td>28.8</td>
<td>21.8</td>
<td>11.9</td>
<td>3.1</td>
</tr>
<tr>
<td>Do you think that a home garden can contribute to local food security if necessary</td>
<td>47</td>
<td>36.1</td>
<td>13.3</td>
<td>2.7</td>
<td>0.9</td>
</tr>
<tr>
<td>Can the home garden contribute to modifying the mood and reduce depression for people during the time of prohibition</td>
<td>75.4</td>
<td>21</td>
<td>3.3</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Are the home garden a place to spend time with family members and participate in the housework</td>
<td>74.5</td>
<td>21.4</td>
<td>3.5</td>
<td>0.5</td>
<td>0.2</td>
</tr>
<tr>
<td>Is having a home garden important for children to get out of the walls of the house and enjoy nature during the prohibition?</td>
<td>77.3</td>
<td>19.8</td>
<td>2.2</td>
<td>0.5</td>
<td>0.2</td>
</tr>
<tr>
<td>Does having a garden at home teach children the importance of healthy food and make them accustomed to including it in their meals</td>
<td>65.7</td>
<td>25.4</td>
<td>7.5</td>
<td>1.1</td>
<td>0.3</td>
</tr>
<tr>
<td>Are you seriously thinking about starting to have a productive home garden?</td>
<td>60.1</td>
<td>30.1</td>
<td>7.5</td>
<td>1.6</td>
<td>0.6</td>
</tr>
<tr>
<td>Have you ever wished you had a garden that provided you with healthy food</td>
<td>71.9</td>
<td>22.6</td>
<td>4.7</td>
<td>0.2</td>
<td>0.6</td>
</tr>
<tr>
<td>Do you support attending workshops on plant care?</td>
<td>58.2</td>
<td>30.4</td>
<td>9.4</td>
<td>1.4</td>
<td>0.6</td>
</tr>
</tbody>
</table>
Householders see that the importance of home garden to supplies healthy, organic food to family members with an approval rating 64.5% Strongly Agree, 27.8% said Agree, 6.8% Neutral, 0.8% said Disagree and 0.2% Strongly Disagrees. To see the importance of home garden in times of pandemics and disasters, the response came in 78.4% Strongly Agree, 19.0% said Agree, 2.4% Neutral, 0.2% said Disagree and 0.2% Strongly Disagrees.

Furthermore, the question if they think that the home garden can be an alternative to going out to the market to buy fresh products, the percentage of those came in 54.9% Strongly Agree, 26.8% said Agree, 13.0% Neutral, 4.2% said Disagree and 1.1% Strongly Disagrees.

What do householders think that garden products are sufficient if they cannot be found in the market during the days of the ban, the percentage of those came in 34.3% Strongly Agree, 28.8% said Agree, 21.8% Neutral, 11.9% said Disagree and 3.1% Strongly Disagrees.

Householders whether they think that a home garden can contribute to local food security if necessary, and the answer came in 47.0% Strongly Agree, 36.1% said Agree, 13.3% Neutral, 2.7% said Disagree and 0.9% Strongly Disagrees.

Moreover, can the home garden contribute to modifying the mood and reduce depression for people during the time of prohibition, the answer was given by the percentage of those who 75.4% Strongly Agree, 21.0% said Agree, 3.3% Neutral, 0.2% said Disagree and 0.2% Strongly Disagrees. The results indicated that if the homes garden can be a place to spend time with family members and participate in the housework amounted to 75.5% Strongly Agree, 21.4% said Agree, 3.5% Neutral, 0.5% said Disagree and 0.2% Strongly Disagrees.
Results showed that the percentage of those having a home garden which is important for children to get out of the walls of the house and enjoy nature during the prohibition, their percentage was 77.3% Strongly Agree, 19.8% said Agree, 2.2% Neutral, 0.5% said Disagree and 0.2% Strongly Disagrees.

Does having a garden at home teach children the importance of healthy food and make them accustomed to including it in their meals, the percentage of those came in 60.1% Strongly Agree, 30.1% said Agree, 7.5% Neutral, 1.1% said Disagree and 0.3% Strongly Disagrees.

Whether householders seriously thinking about starting to have a productive home garden, the answer came in 47.0% Strongly Agree, 36.1% said Agree, 7.5% Neutral, 1.6% said Disagree and 0.6% Strongly Disagrees.

The householders if ever wished to had a garden that provided with healthy food, the answer was given by the percentage of those who 71.9% Strongly Agree, 22.6% said Agree, 4.7% Neutral, 0.2% said Disagree and 0.6% Strongly Disagrees. Without the correct information that helps to guide householder to go through the experience of cultivation, they will not be able to start creating a garden, if householders support attending workshops on plant care, at a rate of 58.2% Strongly Agree, 30.4% said Agree, 9.4% Neutral, 1.4% said Disagree and 0.6% Strongly Disagrees.

According to Table 5, logistic regression analysis was done to see factors affect the probability of having home garden, dependent variables to have home garden or not. There are eight significant variables out of 16. To start with, if the householder has experience the probability of having home garden increase (0.681%). Moreover, as age increase the probability of having home garden increase too (0.956%). In addition, if the householders own property accommodation the probability to have
home garden increase (0.913%) rather rent accommodation. Also, if the respondent has a yard and big space the probability increase as well (2.730%) (1.614%).

On the other hand, if the householders were married the probability of having home garden decreases (-1.557%). However, single householders have more time to spend on home garden. If the householders have harmful weeds the probability of having home garden decrease (-0.780%). Furthermore, if householders face difficulty to care and maintain the garden the probability to have home garden decrease (-1.012%).

Table 5: The Analysis of the factors affecting householders willingness to have home garden (N=663). Data were analyzed using logistic regression.

<table>
<thead>
<tr>
<th>Questions</th>
<th>B</th>
<th>S.E.</th>
<th>Wald</th>
<th>Significant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food Production in the Garden</td>
<td>0.67</td>
<td>0.449</td>
<td>2.225</td>
<td>0.136</td>
</tr>
<tr>
<td>Vegetable production</td>
<td>0.502</td>
<td>0.455</td>
<td>1.218</td>
<td>0.27</td>
</tr>
<tr>
<td>Obstacles to not have Garden (Need Experience and Knowledge)</td>
<td>0.681</td>
<td>0.403</td>
<td>2.855</td>
<td>0.091</td>
</tr>
<tr>
<td>Difficulties to take care of Garden</td>
<td>-1.012</td>
<td>0.435</td>
<td>5.407</td>
<td>0.02</td>
</tr>
<tr>
<td>Irrigation System</td>
<td>0.686</td>
<td>0.442</td>
<td>2.417</td>
<td>0.12</td>
</tr>
<tr>
<td>Harmful Weeds</td>
<td>-0.78</td>
<td>0.397</td>
<td>3.863</td>
<td>0.049</td>
</tr>
<tr>
<td>Who take care for Garden</td>
<td>0.663</td>
<td>0.461</td>
<td>2.065</td>
<td>0.151</td>
</tr>
<tr>
<td>Gender</td>
<td>0.279</td>
<td>0.497</td>
<td>0.315</td>
<td>0.574</td>
</tr>
<tr>
<td>Age</td>
<td>0.956</td>
<td>0.523</td>
<td>3.347</td>
<td>0.067</td>
</tr>
<tr>
<td>Educational level</td>
<td>0.457</td>
<td>0.37</td>
<td>1.52</td>
<td>0.218</td>
</tr>
<tr>
<td>Marital Status</td>
<td>-1.557</td>
<td>0.7</td>
<td>4.939</td>
<td>0.026</td>
</tr>
<tr>
<td>Kids</td>
<td>0.907</td>
<td>0.683</td>
<td>1.761</td>
<td>0.184</td>
</tr>
<tr>
<td>Accommodation property</td>
<td>0.913</td>
<td>0.526</td>
<td>3.017</td>
<td>0.082</td>
</tr>
<tr>
<td>Yard</td>
<td>2.73</td>
<td>0.462</td>
<td>34.924</td>
<td>0</td>
</tr>
<tr>
<td>Space Capacity</td>
<td>1.614</td>
<td>0.464</td>
<td>12.101</td>
<td>0.001</td>
</tr>
<tr>
<td>work</td>
<td>-0.243</td>
<td>0.482</td>
<td>0.253</td>
<td>0.615</td>
</tr>
<tr>
<td>Income</td>
<td>0.292</td>
<td>0.279</td>
<td>1.098</td>
<td>0.295</td>
</tr>
</tbody>
</table>
3.1 Respondents Comments

All the comments were inspiring and positive, everyone supported the importance of having a home garden in these situations. Among these comments, there was a commendation of the need to educate the community and increase people's awareness about how to care and maintain a sustainable garden. Most of the responses were having fun while taking the questionnaire, and said it’s a great effort and useful research but few said it's along survey, Interesting survey that stimulates interest in home garden. The garden is a beautiful thing and is very important for any home, no matter how small or large the area in all seasons, the garden relaxes the soul, cultivation at home is a beautiful thing that calls for happiness. The garden is spiritual and visual nourishment.

The most beautiful thing is to take care of the garden and to sit in it and see the trees when they bear fruit. They advise that there is a productive garden, that each family has enough fresh vegetables and organic fruits available in his hand. It's nice for every home to be covered in green, half the aesthetic of the house is with trees. They hope to increase the green patch by encourage people to plant more. Gardens and greenery are important in human life.

Some of the suggestions include holding courses in various parts of the country to teach agriculture and how to take care of it. One of the opinions wished to include questions about agricultural problems related to agricultural pests and used pesticides. Caring for the home garden is a shared responsibility, what harms householder garden will harm someone else’s garden, as agricultural pests spread.

They wish that this project to be implemented on the real life, to benefit from the garden and spend the free time in it, and provide an agricultural engineer for
guidance and direction. Some ask that the municipalities to be cooperative in providing more land area as people are allowed to create a home garden. One of the reasons for the people's reluctance to gardening is the high price of water and the small areas of land for citizens

One of response goal after retirement is a greenhouse to grow fruits and vegetables throughout the year, one of the point of view of the responses is that the home garden is a refuge and a spiritual treatment before it is a source of recreation and food, hope everyone will actually pay attention to it and know more about what they can grow.

They prefer to attend online courses on home cultivation and that these lectures are recorded for future reference and use at any time. They hope to spread awareness among people about the importance and how agriculture affects people lives and the environment around. It is important to pay attention to such small details that have a big impact on people lives.

Offering courses for those interested in home gardening and teaching them how to make home organic fertilizer by recycling agricultural waste, and teach them how to make the home garden a source of income for the family. Provide a guide for seasonal home cultivation crops.

The home garden is currently considered one of the most important outlets for families' entertainment.
Chapter 4: Discussion

According to Figure 1, among the obstacles that cause unwillingness to have a productive home garden, lack of experience and knowledge was the highest constraints, because experience is the main engine of the cultivation process, it makes easier for the house holders to face and solve problems and overcome pests and obstacles, keep also aware of the planting season, the harvest season, the requirements of the amount of fertilizer and the amount of water that would help to have a healthy garden. It also saves and reduces losses and ensures the success of the cultivation. Some of the constraints of urban households from taking part in home gardening were lack of land, water and education. This requires a corporation between government and municipalities (Ogundiran et al., 2014). For the commencement of rooftop gardening as urban farming, lack of technical knowledge (Specht & Sanyé-Mengual, 2017) is one of the serious problems because of which most of the respondents do practice rooftop gardening but cannot maintain it and some of them want to start rooftop gardening but are unaware about the initial procedure (Walters & Midden, 2018; Thapa et al., 2020). According to this result it shows how important is to provide agricultural experts who has the right information to deal with house holder difficulties.

In second place, the obstacles that cause unwillingness to have a productive garden there is no enough space, which due the small amount of land available to the population, urbanization limits the size of the land grant. As the area of the gardens is limited, the activities undertaken inside the gardens could be minimal. Because of limited area, the number of species is lower. It is recommended to have a larger area in order to support a higher number of diversify tree and crop species and increase the
numbers of products providing high nutritional value (Sedami et al., 2017). The integration of edible plants with ornamental ones increases species diversity in urban areas. This helps to maintain the stability of the urban ecosystem and promote sustainable urban development (Xie et al., 2019). So, as the garden size increase that will help to increase the biodiversity of plants type. Also, the space affects the planting methods, those who did not directly planted into the soil due of lack area, they used pots or container rather than plant direct in soil.

Time matters, as allocating time of the day for planting needs to be prioritized. Some people are busy with work, others are studying, therefore, lack of time consider as obstacles that cause unwillingness to have home garden. Agricultural tools and materials need money, some of the house holder seeing its expensive and gardening is costly, due of prices of plants, seeds, pesticides and fertilizers. Lastly, it is tiring for some house holders.

According to Table 1, to cultivate plants, many methods can be used, hydroponic system was useful for most house holder, cause this method is easy and flexible, they can design any size depend on the space, vertical or horizontal, soil less, householders can cultivate many type of plant. Currently hydroponic cultivation is gaining popularity all over the world because of efficient resources management and quality food production. Moreover, cultivating plants by pots was prefer by some of house holders, because they can move the pots any place they want in their garden and it have various type and price depends of house holder preferences. On the other hand, some they don’t like this methods of cultivating this due to its need to be changed constantly depend on plant growth and root size, some container is expensive and heavy to move, lead to excess residue. Greenhouse method was the last preferred
system, because its expensive, needs large area, lots of work and maintenance, also limited sizes and specific measurements.

Regarding to Table 1, most of house holders want to have productive home garden that produce fruit and vegetables not only for aesthetic purpose, the results support the hypothesis that home gardens provide some level of food products for house holders. On the contrary, its falsely the other hypothesis that house holders want to have home garden for aesthetic reasons only. This created a new landscape, characterizing both an aesthetic effect and food production, defined as edible landscape. By being engaged in food planting, urban residents can save transportation costs, reduce food miles, and obtain healthy fresh food (Galhena et al., 2013).

Some they prefer to cultivate vegetable rather than fruit, because vegetables are easy to cultivate than fruit, and cover small area, while fruit can’t tolerate the hot climate and it’s difficult to cultivate. Everyone have different time prefer to plant, winter season was higher because it’s cool and good weather to take care of plants, otherwise, summer months are less preferred by house holders due to high temperature they can’t spend long time to care their plants.

According to Table 2, results shows that house holders face difficulties to take care of the home garden, thus because they need knowledge to manage such difficulties. One of the garden enemy is the harmful weeds, as mentioned before they compete with the plants resource. The garden needs to be checked regularly, pruned, and sprayed with pesticides, and weeds must be removed, also the soil type must be checked and use high quality products and tools. Manual irrigation system was higher preferred system which is cheaper but needs effort, while automatic irrigation system is easy to use but expensive.
Figure 3 shows the source of agricultural equipment that house holders get, nurseries and market were the highest among the other. Moreover, householders prefer to buy directly from the shop instead of ordering online thus, buying from the nursery ensures that they see the quality of the product and to avoid cheat, for the same reason they prefer market, so they can check the exact size, color and features of plant or tools. Some they prefer to get equipment form municipality to ensure the quality of products because they are under the supervision of the agriculture and food authority. Recycling of materials was the lowest, due the lack knowledge to the best ways to recycle. The compost is another important consideration is the recycling of waste materials. The vegetable biomass of waste, even of a small vegetable garden, can be high and mixed with waste that would end up in the garbage (fruit skins, vegetable residues, eggshells, coffee grounds, tea bags, etc.) it becomes an excellent starting point for the production of compost. They can also add the shredded roots of the plants to replace and recover this precious soil (Sofo & Sofo, 2020).

The research discusses the impression of a garden and its importance during pandemic, the finding support that house holders are aware of the important of having productive home garden during the time of pandemics. Most of house holders think home garden are helpful to maintain human wellbeing, contribute to modify the mood and reduce depression. As well as that garden is a healthy place for children and family gathering. Children need a natural environment in the time of technology, because television screens and phone screens negatively affect the health of children’s senses and mentality. Gardening was also adopted as an activity for children, as well as, filling free time due to loss of work, canceled events, and closed businesses (Walljasper & Polansek, 2020; Chenarides et al., 2020).
Garden is a place that fits all family members, there are the elderly, children and adults. It is where the journey of adventure and happy memories begins as nature greatly reduces stress and improves mood. The results support that home gardens enhance the householder’s quality of life.

As a part of the urban green infrastructure, the edible landscape plays an important role in improving the environment, maintaining self-supporting systems, and enriching green-space functions. Gardens improve the environment and reduce air pollution; rapid urbanization leads to the increase of urban population and the replacement of agricultural lands by construction lands. With the increasing demand for food, city dwellers have to rely on processed food or that transported over long distances, which results in nutrient loss and high food prices.

The ‘nature’ of garden activity (i.e. whether gardening or relaxing) may not be as important to wellbeing during the pandemic as the amount of time spent in the garden. The first empirical evidence of a link between home garden use and greater wellbeing during the COVID-19 pandemic. In these unprecedented times of uncertainty and stress, domestic gardens may provide an outlet for mental activity as well as boosting physical health, especially for older people under extended home quarantine (Brindley et al., 2018; De Bell et al., 2020).
Chapter 5: Conclusion

In this study, a questionnaire survey was conducted to collect information about the Al Ain City’s house holders’ attitude, preferences and willingness to have Home Garden at time of pandemics. A total of 663 house holders were asked about the types of vegetables, fruit, flower and herbs in their garden, as well investigate about the obstacle that make it difficult to have a garden, 67% needs experience and knowledge, which was the highest, moreover 40.1% not enough space, 24.6% no time, 21.8% expensive, 17.7% tiring. Householders were indicated the level of agreement or disagreement for the importance of home garden during crisis, if householders ever wished to had a garden that provided with healthy food, the answer was given by the percentage of those who 71.9% Strongly Agree, 22.6 % said Agree, 4.7% Neutral, 0.2% said Disagree and 0.6% Strongly Disagrees.

In conclusion, it’s time to think positive during crisis and take advantage of such condition to focus on the home garden. In addition, householder have to change their lifestyle to ensure food security for them self, community and next generation. The findings give the impression that home garden owners are aware of the importance of a garden, and everyone's desire to provide centers to attend workshops to learn gardening principles and interest in plants. Having a healthy, productive and harm-free garden takes effort, experience and a lot of time.
References


Appendix

Survey English

Are you a resident of Al Ain? Do you have a home garden? Share us your opinion

I’m a Master Student at United Arab Emirates University (UAEU), College of Food and Agriculture. This study has been prepared for scientific research purposes only. The survey will help to collect data for my research. The data will never be used for any other purposes.

Thank you for your cooperation

Noura Al Mansoori

Home garden and cultivation methods

1. Do you have a home garden?
   - Yes
   - No

2. If you do not have a garden, would you like to have a home garden that produces vegetables and fruits?
   - Yes
   - No

3. The aim of your garden is for an aesthetic purpose only?
   - Yes
   - No

4. Is there a food crop from the garden?
   - Yes
   - No

5. What crops do you have?
   - Vegetables
   - Fruits
   - Both

6. When do you prefer to plant?
   - Months of winter and spring
   - Months of summer

7. Are you planted directly in the soil?
   - Yes
   - No

8. How do you prefer to do the cultivation?
   - Seeds
   - Seedlings
9. Do you use methods of cultivation other than using soil?
   - Greenhouse
   - Hydroponics
   - Pot
   - Others
10. Do you prefer to harvest your own food from the garden?
    - Yes
    - No
    - Sometimes
11. Do you find obstacles that cause unwillingness to have a productive garden?
    - Not enough space
    - No time
    - Expensive
    - Tiring
    - Needs experience and knowledge
12. Do you prefer to design your home garden?
    - Yes
    - No
13. In your garden, what kinds of vegetables are there?
    - Cucumber
    - Tomato
    - Onion
    - Potato
    - Carrot
    - Lemon
    - Mushroom
    - Other
14. What are the types of fruit trees in the house?
    - Figs
    - Mango
    - Orange
    - Pomegranate
    - Berries
    - Bananas
    - Other
15. What are the types of leafy vegetables?
    - Lettuce
    - Coriander
    - Parsley
    - Mint
    - Rocca
    - Other
16. What are the types of flowers in your home garden?
    - Rose
    - Jasmine
    - Lavender
    - Sunflower
• Bougainvillea
• Nothing

17. What are the native plants in the garden?
• Date palm
• Gahf
• Seder
• Henna
• Arta
• Other

18. Is there a cactus in your garden?
• Yes
• No

19. Do you make a natural preparation from aloe Vera, henna, or any plant from your garden?
• Yes
• No

20. Is there a production of dates in the garden?
• Yes
• No

21. Do you prefer genetically modified plants (ornamental or vegetable)?
• Yes
• No
• Sometimes

Care and maintenance

22. Do you find it difficult to take care of your garden?
• Yes
• No

23. What irrigation system do you use?
• Manual
• Automatic

24. Are there harmful weeds?
• Yes
• No

25. Do you find it difficult to resist weeds?
• Yes
• No

26. Who takes care of the home garden?
• You
• House worker
• Company
• No one

27. How often you care your garden?
• Daily
• Weekly
• Monthly
28. If you have any difficulty dealing with the garden, what do you do?
   - Ask friend
   - Ask agricultural expert
   - Ask municipality

29. Where do you get agricultural equipment?
   - Nurseries
   - Market
   - Websites
   - Municipality
   - Recycling

30. A. Do you think the existence of a shop selling agricultural supplies is necessary in every neighborhood?
   - Strongly agree
   - Agree
   - Neutral
   - Disagree
   - Strongly disagree

   B. Do you support providing engineers and agricultural specialists for every neighborhood?
   - Strongly agree
   - Agree
   - Neutral
   - Disagree
   - Strongly disagree

   C. Do you support attending training workshops to care for the garden?
   - Strongly agree
   - Agree
   - Neutral
   - Disagree
   - Strongly disagree

Pandemic and food security

31. Please indicate the level of your agreement or disagreement with the following sentences
<table>
<thead>
<tr>
<th>Question</th>
<th>Strongly agree</th>
<th>Agree</th>
<th>Neutral</th>
<th>Disagree</th>
<th>Strongly disagree</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you see a productive home garden essential for everyone?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you see that the home garden supplies healthy, organic food to family members?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you see the importance of home garden in times of pandemics and disasters?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you think that the home garden can be an alternative to going out to the market to buy fresh products?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you think that garden products are sufficient in the event that they cannot be found in the market during the days of the ban?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you think that a home garden can contribute to local food security if necessary?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Can the home garden contribute to modifying the mood and reduce depression for people during the time of prohibition?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is the home garden a place to spend time with family members and participate in the housework?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is having a home garden important for children to get out of the walls of the house and enjoy nature during the prohibition?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Does having a garden at home teach children the importance of healthy food and make them accustomed to including it in their meals?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are you seriously thinking about starting to have a productive home garden?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Have you ever wished you had a garden that provided you with healthy food?

Do you support attending workshops on plant care?

**Personal information**

32. Gender
   - Male
   - Female
33. Age
   - Under 18
   - 19-40
   - 41-60
   - above 60
34. Educational level
   - school student
   - university bachelor student
   - postgraduate master – phd
   - retired
35. Marital status
   - married
   - single
36. Kids
   - yes
   - no
37. Living
   - detached house
   - apartment
38. Accommodation type
   - property
   - rent
39. Do you have a yard?
   - Yes
   - No
40. Your space capacity
   - Big
   - Small
41. Do you work
   - Yes
   - No
42. Average income
   - Less 10000
   - 10000- 20000
   - more than 30000
43. Comment

.................................................................
 الاستبيان

Survey Arabic

هل انت من سكان مدينة العين؟ هل لديك حديقة منزلية؟ شاركنا رأيك

انا طالبة ماجستير في جامعة الإمارات العربية المتحدة، كلية الأغذية والزراعة. تم إعداد هذه الدراسة لأغراض البحث العلمي فقط. سيساعد المسح في جمع البيانات ليتمكن. لن يتم استخدام البيانات لأي أغراض أخرى.
شكرا لتعاونكم.

نورة المنصوري

حديقة المنزل وطرق الزراعة

1. هل يوجد لديك حديقة منزلية؟
- نعم
- لا

2. إذا لم يكن لديك حديقة هل ترغب في القيام بحديقة منزلية منتجة للخضار والفواكه؟
- نعم
- لا

3. الهدف من الحديقة هو الجمالية فقط؟
- نعم
- لا

4. هل يوجد محسول غذائي من الحديقة؟
- نعم
- لا

5. ما هي المحاصيل لديك؟
- خضروات
- فاكهة
- الأشجار

6. متى تفضل أن تقوم بالزراعة؟
- أشهر الشتاء والربيع
- أشهر الصيف

7. هل تزرع في التربية مباشرة؟
- نعم
- لا

8. كيف تفضل أن تقوم بالزراعة؟
- البذر
- الشتلات

9. هل تستخدم طرق للزراعة غير استخدام التربة؟
- البيت الزجاجي
- الزراعة المائية
- أصيص
- غير ذلك

10. هل تفضل أن تقوم بقصد الغذاء بنفسك من الحديقة؟
- نعم
لا

بعض الأوقات

هل تجد معرفة تسبب عدم الرغبة في القيام بحديقة منتجة؟

مطاطا

لا يوجد وقت

مكالف

متعب

يحتاج إلى خبرة ومعرفة

هل تفضل أن تقوم بتصميم حديقة المنزل بنفسك؟

نعم

لا

في حديقتك ما هي أنواع الخضار المتواجدة؟

خيار

طماطم

بصل

بطاطا

جزر

ليمون

مشروم

غير ذلك

ما هي أنواع أشجار الفاكهة الموجودة في المنزل؟

التين

المانجو

البرتقال

الرمان

التوت

المووز

غير ذلك

ماهي أنواع الورقية؟

خس

كزيرة

بقدوس

نعناع

جزر

غير ذلك

ما هي أنواع الزهور في الحديقة المنزلية؟

جوري

ياسمين

ربحان

ذو الحوراء

جهمية

لا يوجد
غير ذلك

1.7. ما هي النباتات الم المحلية في الحديقة؟
- التخليل
- الغاف
- السدر
- الحناء
- الأرطاط
- غير ذلك

1.8. هل يوجد صبار في حديقتكم؟
- نعم
- لا

1.9. هل تقوم بعمل مستحضر طبيعي من الصبار أو الحناء أو أي نبات من حديقتكم؟
- نعم
- لا

2.0. هل يوجد انثاotal للعمور في الحديقة؟
- نعم
- لا

2.1. هل تفضل النباتات المعدلة وراثيا (نبات زينة أو خضروات)؟
- نعم
- لا
- احيانا

العناية والصيانة

2.2. هل تجد صعوبة في العناية بالحديقة؟
- نعم
- لا

2.3. ما هو نظام الري الذي تستخدمه؟
- نظام بدي
- نظام آلي

2.4. هل يوجد حشائش ضارة؟
- نعم
- لا

2.5. هل تجد صعوبة في مقاومة الحشائش؟
- نعم
- لا

2.6. من يقوم بالعناية بالحديقة المنزلية؟
- انت
- عامل المنزل
27. هل تعتني بالنباتات؟

- يومي
- أسبوعي
- شهري
- سنوي

28. إذا واجهت أي صعوبة للتعامل مع الحديقة، ما تفعل؟

- سؤال صديق
- سؤال خبير زراعي
- سؤال البلدية

29. من ابن تحصل على المعاد الزراعية؟ (البذور - الأدوات - السماد - المبيدات)

- المشتغل
- السوق
- المواقع الإلكترونية
- البلدية
- إعادة تدوير

30. هل ترى وجود محل بيع أعشاب الزراعة ضروري في كل حي؟

- اتفق بشدة
- اتفق
- محايد
- لا اتفق
- لا اتفق بشدة

ب. هل تؤيد توفير مهندسين وختصاصين للزراعة لكل حي؟

- اتفق بشدة
- اتفق
- محايد
- لا اتفق
- لا اتفق بشدة

ج. هل تؤيد حضور ورشات تدريبية للعناية بالحديقة؟

- اتفق بشدة
- اتفق
- محايد
- لا اتفق
- لا اتفق بشدة

الجوانحة والأمن الغذائي

31. يرجى الإشارة إلى مستوى موافقتك على الجمل التالية:
<table>
<thead>
<tr>
<th>الغش بشدة</th>
<th>لا الغش</th>
<th>محدود</th>
<th>لا الغش بشدة</th>
</tr>
</thead>
<tbody>
<tr>
<td>هل ترى وجود حديقة منزلية منتجة لكل فرد؟</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>هل ترى أن الحديقة المنزلية تم غلاء الصحي العصبي لأفراد الأسرة؟</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>هل ترى أهمية للحديقة المنزلية في زمن الجائحة والكوارث؟</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>هل ترى أن الحديقة المنزلية ممكن أن تكون بديلًا للخروج إلى السوق لشراء المنتجات الخارجية؟</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>هل ترى أن منتجات الحديقة كافية في حالة تغير تواجدها في الأسواق خلال أيام الحظوة؟</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>هل ترى أن الحديقة المنزلية ممكن أن تساهم في الأمان الغذائي المحلي إذا تواجه الأمر كذلك؟</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>هل الحديقة المنزلية ممكن أن تساهم في تغذية الحالة المنزلية وتقلل الالكتاند لدى الأطفال في زمن الحظر؟</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>الغش بشدة</th>
<th>لا الغش</th>
<th>محدود</th>
<th>لا الغش بشدة</th>
</tr>
</thead>
<tbody>
<tr>
<td>هل الحديقة المنزلية ممكن أن تضاء الوقت مع أفراد الأسرة والمشاركة في الأعمال المنزلية؟</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>هل يوجد حديقة منزلية مهما للأولاد للخروج من أسرار المنزل والاستمتاع بالطبيعة أيام الحظر؟</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>هل يوجد حديقة المنزلية بكم للأولاد أهمية الغداء الصحي وتعلمهم على إدراج في طعنهم؟ حديقة منزلية منتجة؟</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>هل تفكر بجدية حول الدفء بإنشاء حديقة منزلية؟ راكدات حديقة تمتد بالغاء الصحي؟</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>هل تود تحسين ورشات عن العناية بالنباتات؟</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### المعلومات الشخصية

- **الفئة:**
  - ذكر
  - أنثى

- **العمر:**
  - تحت 10
  - 10-19
  - 20-44
  - فوق 44
المستوى التعليمي
• طالب مدرسة
• طالب بكالوريوس جامعي
• دراسات عليا ماجستير – دكتوراه
• مقاعد

الحالة الاجتماعية
• متزوج
• أعزب

الأبناء
• نعم
• لا

السكن
• بيت مستقل
• شقة

نوع السكن
• ملك
• إيجار

هل لديك فناء؟
• نعم
• لا

المساحة التي تمتلكها؟
• كبيرة
• صغيرة

هل تمتلك وظيفة؟
• نعم
• لا

متوسط الدخل؟
• تحت 1000
• 1000-2000
• أكثر من 2000

شكرنا
رأي...
Appendix Figures
Distribute posters

Figure 4: Survey Poster; prepared poster to be displayed in different places to encourage Al Ain residents to participate in the survey of the study.
Distribute Posters

Figure 5: Preparation of flyers easy to be distributed and motivational awards to attract people to participate in the survey.

Figure 6: Poster displayed at different frequently visited places such MU Café, Al Ain city.
Figure 7: Poster displayed at different frequently visited places such as Malls and supermarkets, Al Jimi Mall, Al Ain city.

Figure 8: Poster displayed the at UAE university main entrance at Crescent building, Al Ain city
Figure 9: Posters displayed at different nurseries and plant shops such as at Al Bawadi Nurseries

Figure 10: Poster displayed at Vegetables Market
Figure 11: Poster displayed at AlDallah AlShamihah restaurant, Al Ain city