Ανοικτό Πανεπιστήμιο Κύπρου

Σχολή Οικονομικών Επιστημών και Διοίκησης

Μεταπτυχιακό Πρόγραμμα Σπουδών
Enterprise Risk Management

Μεταπτυχιακή Διατριβή

Major risks for life and their perception

Χριστίνα Πηλαβάκη

Επιβλέπων Καθηγητής
Αντώνιος Ταργουτζίδης

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Η παρούσα μεταπτυχιακή διατριβή υποβλήθηκε προς μερική εκπλήρωση των
απαιτήσεων για απόκτηση μεταπτυχιακού τίτλου σπουδών
Enterprise Risk Management
από τη Σχολή Οικονομικών Επιστημών και Διοίκησης
του Ανοικτού Πανεπιστημίου Κύπρου.

Δεκέμβριος 2021

Περίληψη

Ο κύριος στόχος αυτής της διατριβής είναι να εντοπίσει τις κύριες αιτίες θανάτων με βάση τα στατιστικά δεδομένα που διεξήχθησαν στην Κύπρο και να συγκρίνει αυτά τα αποτελέσματα με την αντίληψη των ανθρώπων. Ο δευτερεύων στόχος είναι να εντοπιστούν οι παράγοντες που μπορούν να διαφοροποιήσουν την αντίληψη των ανθρώπων σχετικά με τις απειλές για τη ζωή του και να εξεταστεί εάν η αντίληψη τους μπορεί να επηρεαστεί από πηγές πληροφοριών σχετικά με τους κινδύνους θνησιμότητας.

Με τη χρήση διαδικτυακών ερωτηματολογίων, άτομα από όλη την Κύπρο συμμετείχαν προκειμένου να βοηθήσουν στην απάντηση αυτών των ερωτήσεων. Σύμφωνα με τα αποτελέσματα της έρευνας, διαπιστώσαμε ότι η πλειοψηφία των συμμετεχόντων στην Κύπρο έχει λανθασμένη αντίληψη για ορισμένες αιτίες θανάτου και αυτό οφείλεται κυρίως στις πηγές πληροφοριών που προέρχονται από το προσωπικό τους περιβάλλον (οικογένεια, φίλοι και συνάδελφοι) και από ειδησεογραφικά κανάλια όπως τηλεόραση, διαδίκτυο, μέσα κοινωνικής δικτύωσης, ραδιόφωνο κ.λπ.

Αναλυτικά, στο Κεφάλαιο 1 εισάγεται η έννοια του κινδύνου γενικότερα και η διαμόρφωση της θεωρίας της αντίληψης του κινδύνου. Το Κεφάλαιο 2 καλύπτει τη βιβλιογραφική ανασκόπηση η οποία χωρίζεται σε δύο ενότητες. Η πρώτη ενότητα περιλαμβάνει διάφορες μελέτες που σχετίζονται με την έρευνα της αντίληψης του κινδύνου και η δεύτερη ενότητα παρουσιάζει μελέτες σχετικά με τους μεγάλους κινδύνους στη ζωή και πιο συγκεκριμένα, τις πιο κοινές αιτίες θανάτου στην Κύπρο και σε άλλες χώρες. Επίσης, περιέχει κάποιες μελέτες που εξετάζουν την αντίληψη των ανθρώπων για ορισμένες αιτίες θανάτου και την επιρροή των πηγών πληροφοριών σχετικά με αυτό το θέμα.

Το Κεφάλαιο 3 περιγράφει τη μεθοδολογία που χρησιμοποιήθηκε για τη δημιουργία της έρευνας και περιγράφει τη μορφή του ερωτηματολογίου. Το Κεφάλαιο 4 απεικονίζει την ανάλυση των αποτελεσμάτων της έρευνας, συμπεριλαμβανομένου του πίνακα κατάταξης της αντίληψης των συμμετεχόντων και των γραφικών παραστάσεων που δείχνουν τα αποτελέσματα κάθε ερώτησης. Το Κεφάλαιο 5 περιλαμβάνει τη συζήτηση των ευρημάτων της έρευνας με αναφορές από μελέτες που αναφέρονται στη βιβλιογραφία και το Κεφάλαιο 6 παρουσιάζει το τελικό συμπέρασμα αυτής της έρευνας.

Summary

The aim of this thesis topic is to identify the major causes of deaths based on statistical data that were conducted in Cyprus and compare these results with people's perception. The main goal of this research is to analyze the perception of individuals for the most common causes of deaths and understand the people's point of view regarding this subject. The secondary goal is to identify the factors that may differentiate the perception of people for life threats and discover if an individual's perception can be affected from sources of information regarding mortality risks.

With the use of an online survey, individuals throughout Cyprus from various demographics have participated in order to help answering those questions. Based on the results of those questionnaires, we have found that the majority of the participants in Cyprus have misconception about certain causes of death and this is mainly due to the sources of information coming from their personal environment (family, friends and colleagues) and from news channels such as television, internet, social media, radio etc.

In detail, Chapter 1 introduces the concept of risk in general and the formation of the theory of risk perception. Chapter 2 covers the literature review which is divided into two sections. The first section includes various studies associated to the research of risk perception and the second section presents studies regarding major risks in life and more specifically, the most common causes of death in Cyprus and other countries. Also, it contains some studies that examines the peoples' perception about certain causes of death and the influence of sources of information regarding this subject.

Chapter 3 describes the methodology used to create the survey and outlines the form of the questionnaire. Chapter 4 illustrates the result analysis of the survey including the participants perception ranking table and charts that show the results of each question. Chapter 5 includes the discussion of the survey's findings with references of the studies mentioned in the literature review and Chapter 6 presents the conclusion of this research.

Acknowledgement

First of all, I would like to express my sincere gratitude to my supervisor Mr. Antonios Targoutzides for his continuous feedback, support, and motivation to complete this research.

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Contents

Chapter 1
Introduction

In everyday life, people are facing various kinds of challenges and dangers, while trying to satisfy their needs. For many years, people were avoiding possible threats depending on their instinct and experiences, but also on prejudices and religious beliefs. This began to change with the development of philosophy and science which enabled people to investigate and interpret the challenges, the uncertainties and the dangers that they were facing at individual or social level. Therefore, the concept of 'risk' was introduced or in other words was invented by people, in order to interpret and manage the uncertainties and threats of their life. People realized that risks need attention and further research and so they develop methods and technological advances to observe and prioritize the risks, analyse and evaluate each one of them, in order to manage, reduce or if possible, eliminate them as well as their negative effects.

As a result, over the last five decades, scientists, researchers, psychologists and sociologists study the risk intensively, giving it many different dimensions and definitions. At the same time, they develop methodologies for risk management in order to reduce the risk and mitigate any harmful effects from adverse events. In the context of risk management, they have been developed ways of analysing it (Risk Analysis) and assessing it (Risk Assessment). The research of Risk Management first appeared in the 1950s, due to the risks caused by the use of nuclear energy and it has found field for application in many areas of our lives such as the economy, transport, health, housing development, environmental protection, shipping, etc.

The research of risk, according to Piet Strydom (2002), includes four distinct phases since the 1950s until today. The first phase is characterized by the interest of science community on trying to assess risk. The second phase introduces the problem of comparison between

different risks and their social acceptance. The third phase arises the opposite view of the citizens in many of the scientific-technological risks and the consequent effort of risk researchers and analysts to explain its public perception (Risk Perception) based on psychological research. In the fourth and last phase which continues until today, it is observed a shift of scientists to highlight the cultural and social 'existence' of risk. Moreover, at this stage, the active participation of citizens in risk consultation is becoming more and more accepted.

A risk might be specific however, people's reaction when facing danger is completely different. This happens because each of us perceives differently the risk that arises from a specific situation. So, while a risk is objective, the risk as perceived by humans contain a degree of subjectivity. The subjective dimension of risk started to be identified when there were regular differences in the assessments of scientists and people regarding the riskiness of various technologies or how threatening were specific natural hazards to society. So, by the end of 1960, a new chapter begins in risk research, which was generally characterized as Risk Perception or Perceived Risk.

More specifically, perceptions of health-related risks are a necessity for taking protective action, adopting a healthier lifestyle, attending health screenings, and adhering to medical care. It seems inherently reasonable that the greater the perceived risk for one's own health is the greater the motivation for protective action. Therefore, it is important to understand how people perceive health risks, how accurate these perceptions are, and how information about one's own health risk is received.

Chapter 2
Literature Review

2.1. Risk Perception

"There are things known and there are things unknown, and in between are the doors of perception", (Huxley, 1954). A definition to the Perception of Risk would be the subjective judgment of people regarding the characteristics and the severity of a risk. In other words, it is people's personal belief about the likelihood of negative events such as injuries, accidents, health diseases, natural disasters and deaths.

Many researchers studied risk perception in order to identify how individuals and social groups judge and interpret information on potential losses and which factors affect the human perception of risk and most specifically, how these factors contribute to form the final judgement on a risk. The importance of studying the risk perception lies in the fact that judgments and interpretations of people, individually or in groups, are what affect their action and attitude, positive or negative, towards risk management measures.

The study of risk perception began to become more systematic from the late 1960s due to the continuous increase of citizens' mistrust and uncertainty regarding new technologies, their results and possible effects. In 1969, Chauncey Starr's study named "Social Benefit versus Technological Risk" suggests the *revealed preference approach* of risk. This approach suggests that by recognizing the risks considered acceptable by society, would reduce the citizens' doubts and suspicions regarding technological risks and specialists' conclusions. This approach was based on assumptions about the ability of risk estimation as well as the price that the society was prepared to pay for its security. He argued that society through a process of trial and error reaches an optimal balance point between the risks and rewards associated with an activity. In other words, the goal of the revealed preference and risk comparison was for experts to take the initiative in setting objective risk levels and then to

guide the public in risk acceptance. This approach almost immediately received strong criticism from a large portion of scientists.

The estimation of risk is a complex process that depends on the context within which information is presented, the personality of the individual and cultural factors. Therefore, during the 1970s, many risk researchers (Otway & Cohen, 1975) but also psychologists (Slovic et al, 1979) began to argue that the question was not what risk citizens should accept, but what exactly the citizens want. Instead of the problem of establishing specific levels of acceptable risk, it should be investigated how the risks were perceived by the citizens. Therefore, the critics of the revealed risk preference approach preferred to study two other approaches: the psychological approach and the socio-cultural approach of risk. The first approach deals mostly with individual's phycology and tries to interpret the characteristics of individual risk, while the second approach refers mainly to society and studies the socio-cultural risk. The psychological approach, also known as Psychometric Model, was the first to gain the attention and the recognition of the scientific community and influence the development in the research of perception of risk during the 1970s. This approach emerged immediately after Starr's study (1969), as a critique and reaction to the revealed preference risk approach, while the socio-cultural approach had to wait until the early 1980s to be taken seriously and accepted by the researchers of risk.

The first researchers that used the Psychometric Model were the psychologists Daniel Kahneman and Amos Tversky. They made a series of experiments based on gambling games in order to explore how people evaluate and perceive the possibilities. By investigating the human crisis under uncertainty, they discovered that humans use several heuristics methods of analysis in order to evaluate new information coming in their knowledge. Heuristic methods could be described as abbreviations of thinking that can help in drawing immediate conclusions. However, in many cases they can lead to misplaced and incorrect conclusions, so they turn into prejudices. The study of Kahneman & Tversky (1974) described three heuristics methods used by humans to estimate probabilities and presented a list of prejudices that can be caused by each of the three heuristic methods.

A remarkable category of research, related to heuristics methods and prejudices, is the evaluation of people's assessments on the degree of mortality of various risks. In other words, asking people to make mortality estimates, scientists are given the opportunity to examine how these people perceive the risk. One of the first organized efforts in this direction was made by Lichtenstein, Slovic, Fischhoff, Layman & Combs (1978). The researchers asked highly educated people to estimate the annual death rate from 40 different risks in the United States. They gave the respondents the annual number of deaths from car accidents, as a reference point. The results were then plotted against the best available public health statistics, which showed deaths from specific causes. These results showed two main systematic differences between the mean estimates and the statistical data. Firstly, respondents tended to overestimate the number of deaths from rare causes, such as tornadoes, while underestimating deaths from common causes, such as cancer and diabetes. Secondly, the exact amount of overestimation or underestimation for each risk also presents a systematic picture for both rare and common causes of death. One of the main findings of the study was that activities with a relatively high death rate, were intense and possible causes of death. This fact comes to confirm its heuristic availability.

Influenced by the research of Kahneman and Tversky, but also by the study of Chauncey Starr, a team of psychologists from Decision Research in Oregon, led by Paul Slovic, Sarah Lichtenstein and Baruch Fischhoff, began to study the perceived risk through the psychometric model. They conducted a survey with questionnaires in which participants evaluated 30 different technological activities (Fischhoff, Slovic, Lichtenstein, Read & Combs, 1978). The first important result of the investigation, in contrast to Starr's hypothesis, was that citizens considered most risks in society as unacceptably high. Taking a step forward, Slovic, Fischhoff & Lichtenstein (1980) extended the previous study and included ninety risks, which were evaluated in terms of eighteen quality risk characteristics and asked the citizens to rate each risk on a set of quality characteristics, which had assumed that they influence the formation of risk perception and acceptance.

In general, the research on the perceived risk through the theoretical framework of the psychometric model flourished in the 1970s and until today it exerts significant influence. After the first results of Decision Research, the psychometric model became the subject of

research in 1970s, 1980s, 1990s both in the United States (Lowrance, 1976; Gould et al, 1988; Kasperson et al, 1988; Flynn et al, 1994; Finucane, Slovic, Mertz, Flynn & Satterfield, 2000) and the rest of the world: Norway (Teigen et al, 1988), Hong Kong (Keown, 1989), Japan (Kleinhesselink & Rosa, 1991), Soviet Union (Mechitov & Rebric, 1990), Sweden (Slovic, Kraus, Lape, Letzel & Malmfors, 1989), France (Slovic, Flynn, Mertz, Mays & Poumadére, 1996).

Over the years the psychometric model has been constantly expanding with new studies which included new risks, new application fields of psychometric model, deeper analysis of results and new conclusions. Through questionnaire processing, it was observed and highlighted the significant difference in risk perception that men had from women (Flynn et al, 1994). Also, in the United States observed a similar variation in risk perception between white men and minority men, such as Hispanics and African American men.

In addition, the studies using the psychometric model highlighted that the stigma of an event, the emotions that it causes and their influence on people, can contribute to the formation of risk perception. The stigma refers to incidents where dangerous activities can attribute disrepute characteristics. Such stigmatized activities are judged by citizens to be morally inappropriate, completely unacceptable and harmful to anyone related to them. Consequently, the negative 'images' of an activity also evoke negative emotions, which can affect the perception of citizens about this activity. In fact, a positive or a negative feeling that pre-exists for an activity can trigger its assessment and establish the risks that attributed to it, while the opposite should happen. While initially, the risk perception was considered as an analytical procedure of processing information, over time and as the research progressed, it became apparent that risk perception depends on the instinctive and experiential way of citizens' thinking, which is shaped by their emotions and their various kinds of influences.

In general, the psychological approach to perceived risk, through the theoretical framework of the psychometric model, assumes that the risk is subjectively defined by people, who are affected by a wide range of psychological, social, structural and cultural factors. So, since the early 1980s many researchers began to look beyond purely individual, psychological considerations of human reactions to risk. Among the researchers, several anthropologists

and political scientists have addressed the risk and began to propose theories that highlighted the importance of social, cultural, political and institutional processes in the formation of perception of risk and its acceptance.

The study of M. Douglas & A. Wildavsky (1982) was crucial since they proposed the Cultural Theory for perception of risk. This study argued that people's views on risk are created and supported by social structures. In addition, they suggested the existence of four basic 'lifestyles', each of which corresponds to a specific social structure and a specific theory of risk. Each person has a unique set of values, orientations and goals based on which it perceives and evaluates each risk with its own individual way. Cultural Theory, keeping its distance from the psychometric model, caught the attention of researchers of risk perception and it was the one that 'legalized' the theory of social and cultural structure of risk. Even though it was extremely popular, especially in the UK, it was criticised and very soon researchers, such as James Short, highlighted the problems and the limitations of Cultural Theory. Short (1984) criticized the static and relatively simplistic anthropological explanation of Douglas and proposed the extension of the sociological analysis of risk, to include an analysis of the role of the media. Then other researchers, by recognizing the crucial role that different cultures play in explaining humans' differences in risk perception, they suggested their own cultural and social theories about risk, not always in agreement with the views of Douglas and Wildavsky. Some researchers were Johnson & Covello (1987), Kasperson et al (1988), Gould et al (1988), Beck (1992). In general, the socio-cultural approach created a great interest among researchers of perceived risk, but it failed to produce the empirical evidence that the psychometric model research has provided.

While initially the two approaches of risk appeared as two separate or/and conflicting theories explaining perceived risk, soon it began to be understood by the scientific community that both approaches were complementary and each one of them revealed a different aspect of perceived risk. Therefore, this result gave the opportunity to make efforts for the integration of psychological, sociological and cultural risk approaches. The first attempt for integration was through the context of social amplification of risk. In this context, it is proposed to treat a risk as a signal which emitted by a threat and then it is filtered by the media, politicians, activists and scientists before it reaches its receivers which in this case are

ordinary citizens. Hence, the signal received by the citizen - the perceived risk - may have been amplified or weakened by intermediate filters. In particular, the media allow the selection of a risk-related event and its interaction with psychological, social, institutional and political factors in such a way that they can either reinforce or weaken the individual and social perception of risk.

2.2. Major Risks for Life

One of the most well knowing survey organizations in England, Ipsos MORI, in early 2020 have contacted an online survey on 32 countries to examine whether there was a correct public awareness about the percentage of people who pass away from diseases, violent behaviors, transport accidents, sexually transmitted infections, drug overdose etc. Ipsos' Perils of Perception study showed that people in general tend to underestimate the main causes of deaths which are diseases that are related to heart or blood vessels and diseases of the neoplasm while gave a higher percentage on causes of death with lower percentages such as violent behaviors, transport accidents, drug overdose etc.

An underestimated cause of death is related to cardiovascular diseases. Most of the countries in the study selected an average percentage of 11% which is three times lower than the actual percentage of 32%, shown from statistical data. For example, participants from Romania underestimated this cause of death, giving a percentage of 12%, while the actual percentage in Romania is 56%. Moreover, deaths that were caused by cancer diseases were underestimated and had an average percentage of 15% in the survey which is much lower than the actual percentage of 24%. A relevant example is the participants from France who estimated a percentage of 16% on deaths that are caused from cancer diseases and the actual percentage is 32%.

On the other hand, some of the overestimated causes of death are related to sexually transmitted infections such as AIDS, interpersonal violence, terrorism or conflict in a yearly basis and suicides. Regarding sexually transmitted infections, almost every country selected an average of 5% which is higher than the actual percentage which is 1%. The real percentage on deaths from interpersonal violence was only just 1% while in the study, all participating

countries estimate an 8%. Regarding deaths from terrorism or conflict in a yearly basis in almost every country the average selected from the participants was 5% which is much higher from reality since the actual percentage is only 0.1%. Participants in countries such as Turkey and Colombia have selected an even higher percentage from the average selection in general. Suicides had an assumption of 7.3% while the actual percentage is 1.6%. Injuries that are caused from transportation have also been overestimated in many countries with an average percentage of 20%, which is ten times greater from the actual percentage.

Also, the Perils of Perception study raised some other questions such as what the participants felt that had least control over and what were their thoughts on the most horrible way to die. Cancer, cardiovascular disease, kidney and diabetes are the diseases that the participants are most likely affected, according to the study. When the participants were asked about what they think that is the most horrible way to die, the majority said cancer, and with lower percentages they said about accidents, terrorist activities and transport injuries. Cancer, terrorist activities and transport injuries such as car accidents are the causes which the participants think that will have little or no control over them. The survey findings also show that from all the participated countries the average sample of people think that they are most likely to get cancer (31%), be part of a transport accident (25%), or get a cardiovascular disease (25%).

There are lots of factors that can influence people's perceptions, therefore the Perils of Perception study included questions about sources that could influence participant's opinion such as which causes of death they see most in the news, internet etc. These questions intended to identify the sources of information that could manipulate the perception of the participants such as the news on TV, internet, newspapers etc. Regarding the news, the participants stated that they see and hear mostly about transport injuries, interpersonal violence and terrorist activities.

A study that was conducted by the students at University of California (Shen O., Al-Jamaly H., Siemers. M, and Stone N., 2016) attempted to compare the actual number and causes of deaths, gathered from the Centres for Disease Control and the causes of deaths that were reported by famous newspapers such as The New York Times and The Guardian. The study

also compared the use of data from the Google feature "Google Trends Search Volume" which shows how often a term is used by users on google.

The results from the study showed that the main misperceptions have to do with the cardiovascular disease, the kidney disease, the acts of terrorism, suicides and homicides. More particularly, the study discovered that the media does not give a lot of attention and publicity on deaths caused from cardiovascular or kidney diseases whereas on heavy domestic crimes and terrorism the media show a lot of attention and publicity.

Moreover, the study conducted by P. Slovic and B. Combs (1979) intended to compare the causes of death mentioned in two specific newspapers with the statistical frequencies of those causes in the US population. The study found that violent and catastrophic causes of death such as homicides, natural disasters and accidents were overreported while diseases were underreported. More specifically, deaths from homicides are mentioned three times more often than all the deaths occurring by diseases combined and the articles have double length than the articles that mention diseases and accidents.

The study claims that violent accidents and homicides are overreported because they make more interesting and exciting stories than diseases. This intense reporting of homicides and accidents does not occur only to sell more newspapers, but because these risks represent sources of common vulnerability in which people need to be informed so that they can take precautions or establish appropriate regulations. On the other hand, diseases may be less important due to the fact that they are more common and inevitable of happening and they most often take only a single life.

The above studies do not include Cyprus but the results from other countries create an overall idea about the people's risk perception regarding certain causes of death. However, there are other reliable sources and studies that contain useful data about life expectancies and causes of death in Cyprus.

The life expectancy at birth in Cyprus was one of the highest in the EU in 2017 as described by the report of the Organization for Economic Co-operation and Development (OECD) and

the European Observatory on Health Systems and Policies, in cooperation with the European Commission (*2019*). One part of the research presents the life expectancy of thirty European countries, including Cyprus and compares them with the average life expectancy of EU. Cyprus came eighth with 82.2 years compared to the first country which had 83.4 years and the average of EU which was 80.9 years. It was also observed that since 2000, the life expectancy at birth in Cyprus has increased by five years which was faster than the EU average rate. Moreover, the research indicated that the life expectancy of women in Cyprus is about 84.2 years, compared to men which is 80.2 years.

In addition, the report states the main causes of death in Cyprus in 2016 which are mainly diseases of the circulatory system and more specifically ischemic heart disease and stroke. Diabetes was also observed to be another main cause of death since its death rate is the highest in the EU, with mortality rate 53 per 100 000 inhabitants compared to 22 in EU on average. Since 2004, the death rate from ischemic heart disease has reduced by 31%, from stroke by 31% and from diabetes by 36% while death rate from lung cancer was increased due to high smoking rates.

Also, the report mentioned some behavioral risk factors that contribute to the increase of deaths (two out of every five deaths) such as smoking, diet, alcohol consumption and low physical activity. The 22% of all deaths in 2017 were due to smoking which is significantly higher compared to the EU (17%) and 20% of deaths can be attributed to dietary risks (obesity). Less than half of Cypriot adults (47%) report engaging in some physical activity which is lower than in most other EU countries and the EU average (62%). Also, this report revealed that behavioral risk factors are more common among people with low income and education, causing inequalities in health and life expectancy.

The report "Main causes of death in Cyprus" of the health monitoring unit by the Ministry of Health presents the main causes of death in Cyprus using data from 2004 until 2017. In 2017, 6,188 deaths of Cypriots and visitors were recorded with the main causes of death to be related to diseases of the circulatory system (32.3%). Neoplasms (23.7%) are coming second followed by diseases of the respiratory system (9.7%), diseases of the endocrine glands, nutrition and metabolism (7%), while deaths from injuries and poisonings from external

causes (5.2%) are the fifth most common cause of death in Cyprus. The other causes of death follow with lower rates.

The report "Health and Hospital Statistics" by the statistical service of Republic of Cyprus, provides data about all causes of death from 2012 until 2018 as well as information about patients, surgeries, outpatient visits and records on medical, nursing and paramedical staff regarding hospitals and medical institutions.

In 2018, the research recorded 5,963 deaths of Cypriots and visitors which occurred in Cyprus by which 52.9% (3,157 deaths) were men and 47.1% (2,806 deaths) were women. The results showed that the main cause of death were diseases of the circulatory system (29.9%) such as ischemic heart disease, acute myocardial infarction, diseases of the cerebral vessels and other heart diseases affecting the circulatory system. Neoplasms including all malignant neoplasms and leukemia is the second major cause of death in Cyprus with 24.9%. Other causes of death are diseases of the respiratory system (9.0%), diseases of the endocrine glands, nutrition, and metabolism (7.0%), as well as injuries and poisonings from external causes (6.0%). Mental disorders and behavioral disorders such as alcohol abuse and drug addiction follow with 4.5% and diseases of the nervous system and sensory organs with 4.1%.

Based on the report "Health and Hospital Statistics" provided by the statistical service of Republic of Cyprus, a ranking of all causes of death in 2018 is formed (Table 1) and it will be compared with the samples' result in the Result Analysis.

Ranking of the most common causes of death in 2018

		Total	Total (%)	Men	Women	Men (%)	Women (%)
1	Diseases of the circulatory system (e.g., heart attack, heart failure, stroke)	1,784	30%	951	833	53.3%	46.7%
2	Neoplasms (e.g., cancer, leukemia)	1,484	25%	837	647	56.4%	43.6%
3	Diseases of the respiratory system (e.g., Astma, pneumonia)	533	9%	314	219	58.9%	41.1%
4	Diseases of the endocrine glands of nutrition and metabolism (e.g., diabetes)	419	7%	201	218	48.0%	52.0%
5	Mental disorders (e.g., dementia)	260	4.4%	99	161	38.1%	61.9%
6	Accidents and injuries from external causes (e.g., accidental falls, injuries, drownings, or poisonings)	244	4.1%	143	101	58.6%	41.4%
7	Neurological disorders (e.g., Parkinson's disease, Alzheimer's disease)	242	4.1%	110	132	45.5%	54.5%
8	Diseases of the urogenital system (e.g., bladder or kidney infections)	221	3.7%	112	109	50.7%	49.3%
9	Diseases of the digestive system (e.g., chronic liver disease, stomach ulcer)	206	3.5%	107	99	51.9%	48.1%
10	Infectious and parasitic diseases (e.g., Viral hepatitis)	167	2.8%	87	80	52.1%	47.9%
11	Vaguely causes and unknown symptoms	148	2.5%	53	95	35.8%	64.2%
12	Transportation injuries (e.g., road accidents)	57	1.0%	42	15	73.7%	26.3%
13	Suicide and self-injury	43	0.7%	35	8	81.4%	18.6%
14	Diseases of the skin and subcutaneous tissue	40	0.7%	13	27	32.5%	67.5%
15	Diseases of the musculoskeletal system / connective tissue (e.g., Rheumatoid arthritis and osteoarthritis)	36	0.6%	10	26	27.8%	72.2%
16	Blood diseases, immune system abnormalities	31	0.5%	14	17	45.2%	54.8%
17	Some conditions concerning the perinatal period	17	0.3%	12	5	70.6%	29.4%
18	Interpersonal violence (e.g., homicide/murder)	15	0.3%	8	7	53.3%	46.7%
19	Congenital malformations and chromosomal abnormalities	10	0.2%	6	4	60.0%	40.0%
20	Substance use disorders (e.g., drug or alcohol addiction)	6	0.1%	3	3	50.0%	50.0%
	Total Deaths	**5,963**	**100%**	**3,157**	**2,806**	**53%**	**47%**

Table 1: Major causes of death according to the report "Health and Hospital Statistics" by the statistical service of Republic of Cyprus

Chapter 3
Methodology

3.1. Quantitative Research

The importance of this research is to analyze the perception of individuals and understand their point of view regarding the most common causes of death. A suitable method to achieve this is by using a quantitative research method which builds accurate and reliable measurements that allow for statistical analysis. Quantitative research is the process of collecting and analyzing numerical data which can be used to find patterns and averages, make predictions, test causal relationships, and generalize results to wider populations.

From all different types of Quantitative research, I decided to use a Survey Research approach because of its many advantages. Surveys are one of the most low-cost methods of collecting quantitative data and the results can be easily extracted and interpreted. Questionnaires can be posted on websites and social media profiles or send them by email, giving the opportunity of larger sample and faster collection of results.

 In addition to the above, I chose the questionnaire for my research because is a fundamental tool for acquiring information on participants knowledge and perception regarding the major cause of death. The results from the questionnaire will reveal the participants' attitude and opinion regarding this subject and they will also show if there are factors that can influence their perception.

3.2. Survey Design

The questionnaire was built with 21 questions and was designed in six sections. The first section is demographics which include questions regarding the gender, age, educational level, and employment sector.

In the second section, "Participants' perception", I chose 11 causes rather than all 20 causes listed in the literature review, because some of them are not very well known and the questionnaire would end up be very tedious for the participants. Therefore, I decided to select the top 7 causes, 2 from the middle and 2 from the bottom list and I asked the participants to rate them from 1 to 5 according to what they think are the most common causes of death in Cyprus, with 1 meaning "less common" and 5 meaning "very common". The results of this specific question will show the participants' perception of the most common cause of death and compare them with the results of statistical data from national registry.

In the third section, "Participants' Perception for each cause of death", there are 11 multiple-choice questions, in which participants had to choose the death rate they believe it corresponds to each cause of death separately. Also, after each question, participants had to choose which gender has the biggest death rate from that specific cause. The results of these questions will present whether the participant's estimation percentage is accurate, overestimated or underestimated regarding each cause of death.

In the fourth section, "Factors that Increase the Likelihood of Death", I listed 8 causes that can impact the likelihood of death and I asked the participants to rate them from 1 to 5, with 1 being the "least likely" and 5 being the "most likely".

In the fifth section, "Sources of information", I included two questions that concern 7 sources of information such as internet, TV, newspaper etc. In the first question, the participants were asked to rate these sources from 1 to 5, according to which of them they hear or read most often about illnesses, accidents, or deaths. In the second question, the participants were asked to rate them in relation to which source of information they think is most reliable or in

other words which source of information they are most likely to trust regarding the causes of death in Cyprus. These questions intended to identify if these sources of information are capable of manipulate the perception of the participants regarding this subject.

In the sixth section, "Sources of information for each cause of death", I included 2 questions which they will measure the participants' opinion regarding two specific sources of information. In the first question, I listed 11 causes of death and I asked the participants to rate each one of them according to which they see most often on the internet and on social media and in the second question, I asked them to rate each one of these 11 causes according to which they hear most often from family members, friends, and colleagues. From the seven sources of information listed in section 5, I chose these two sources because I believe they have greater influence in people's perception regarding this matter.

Chapter 4
Result Analysis

4.1. Sampling and Data Collection

After the questionnaire was finalized, it was translated in Greek and was circulated online through the Google forms. The period of collecting the questionnaires lasted for one month and I was able to gather 105 samples from Cypriot citizens that were willing to fill out the questionnaire.

4.2. Demographics

The majority of the participants were female (60%), in the ages between 25-34 years old (49%), with a master's degree (44%) and work in the private sector (57%).

4.3. Participants' Perception

In order to assess the perception of the participants for the selected causes of death, an average score was estimated based on the participants' scores (from 1 to 5). According to the results, responders believe that Neoplasms (e.g., cancer, leukaemia etc.) is the first common cause of death, with an average score of 4.1 out of 5. The circulatory system and the transport injuries complete the first three most common causes in the ranking list. At end of the list, we can find suicide and self-injury as well as accidents and injuries from external causes.

	Which is the most common cause of death in Cyprus	Average Score
1	Neoplasms (e.g., cancer, leukemia)	4.1
2	Diseases of the circulatory system (e.g., heart attack, heart failure, stroke)	4.0
3	Transport injuries (e.g., road accidents)	3.2
4	Diseases of the respiratory system (e.g., asthma, pneumonia)	2.7
5	Substance use disorders (e.g., drug or alcohol addiction)	2.5
6	Neurological disorders (e.g., Parkinson's disease, Alzheimer's disease)	2.4
7	Mental disorders (e.g., dementia)	2.2
8	Diseases of the endocrine glands of nutrition and metabolism (e.g., diabetes)	2.2
9	Interpersonal violence (e.g., homicide/murder)	2.0
10	Accidents and injuries from external causes (e.g., accidental falls, injuries, drownings, or poisonings)	1.9
11	Suicide and self-injury	1.8

Table 2: Perception ranking of the most common causes of death

4.4. Participants' Perception for Each Cause of Death

What percentage of deaths in Cyprus do you think is a result of circulatory system diseases?
Such as heart disease, strokes or heart failure

- 6%
- 14%
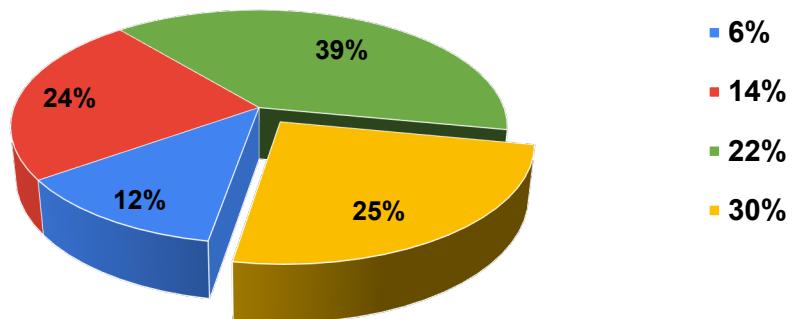- 22%
- 30%

39%
24%
12%
25%

Figure 1: Perception for circulatory system diseases

In regard to the above question, the majority of the participants underestimated the death rate from circulatory system diseases since **75%** of the participants believe that the death rate from this cause is less than 22%. Specifically, **39%** believe that the death rate is 22%, **24%** selected 14% and **12%** voted 6%. Only **25%** of the participants chose the 30% which is the actual death rate of Cypriot citizens from this cause. The **87%** of the participants believe that men have the highest death rate from this cause.

Figure 2: Perception for neoplasms

The majority of the participants (**42%**) believe that the death rate from neoplasms is 33%. The **30%** of the participants selected that 25% of deaths are caused from neoplasms, which is the actual death rate of Cypriot citizens. Twenty-five participants (**24%**) chose 17% and **5%** of them selected the lowest percentage option (9%). Furthermore, the **53%** of the participants believe that men have the highest death rate from this cause.

What percentage of deaths in Cyprus do you think is a result of interpersonal violence?
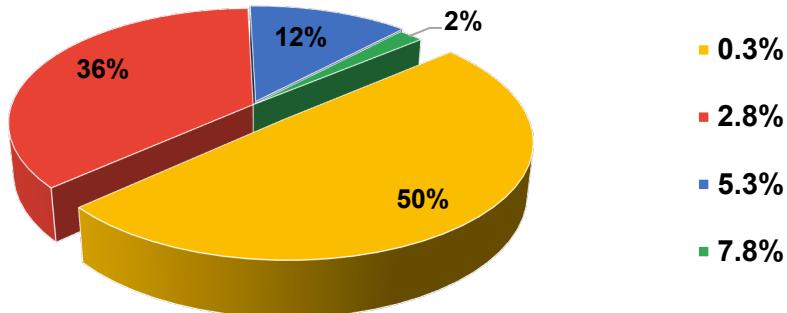*Such as homicide/ murder*

Figure 3: Perception for interpersonal violence

Half of the participants (**50%**) believe that the death rate from interpersonal violence is 0.3% which is the actual death rate in Cyprus from this cause**.** The **36%** of the participants think that 2.8% of deaths are caused from interpersonal violence and **12%** of them chose the 5.3%. Only **2%** of the participants selected the greatest percentage (7.8%). For this cause, the 56% of the participants believe that women have the biggest death rate.

What percentage of deaths in Cyprus do you think is a result of accidents and injuries from external causes?
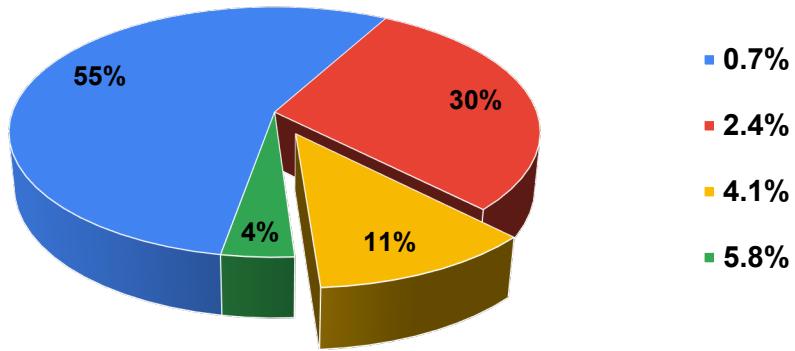*Such as accidental falls, drownings or poisonings*

Figure 4: Perception for accidents and injuries from external causes

In regard to the above question, most of the participants (**55%**) believe that the death rate from this cause is 0.7% when in reality the figure is 4.1%**.** Only the **11%** of the participants found the correct rate while the **30%** of the participants think that the actual rate is 2.4%.

The majority of the participants (84%) voted that men have the biggest death rate from accidents and injuries from external causes.
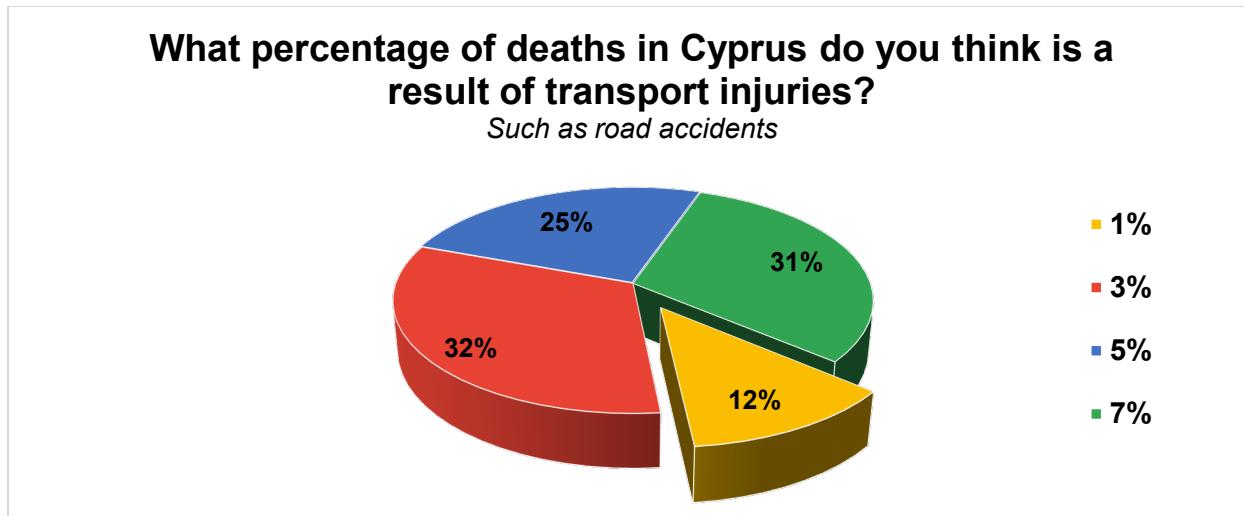
What percentage of deaths in Cyprus do you think is a result of transport injuries?
Such as road accidents

25%

31%

32%

12%

- 1%
- 3%
- 5%
- 7%

Figure 5: Perception for transport injuries

Most of the participants (**32%**) believe that the death rate from transport injuries is 3% and the **31%** of them think that is 7%. Only the **12%** of the participants chose the actual death rate for this cause which is 1%. A large percentage of the participants (92%), think that men have the highest death rate from this cause.
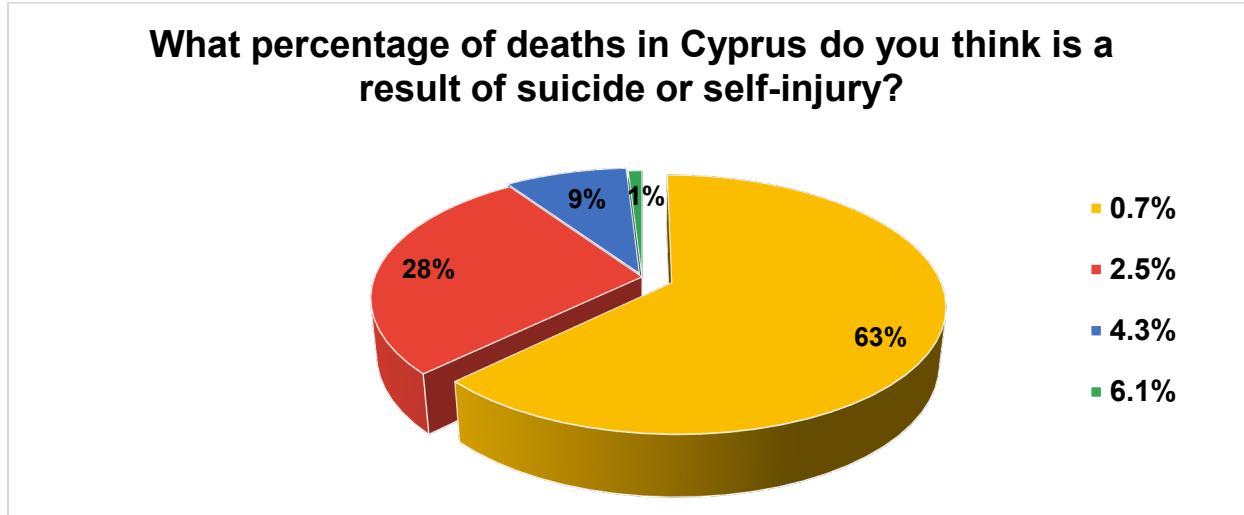
What percentage of deaths in Cyprus do you think is a result of suicide or self-injury?

9% 1%

28%

63%

- 0.7%
- 2.5%
- 4.3%
- 6.1%

Figure 6: Perception for suicide or self-injury

More than half of the participants (**63%**) believe that the death rate from suicide or self-injury is 0.7% which is the actual death rate in Cyprus from this cause. The **28%** of the participants think that 2.5% of deaths are a result from this cause and **9%** chose 4.3%. Only **1%** of the participants selected the greatest percentage (6.1%). Also, for this cause, the 73% of the participants believe that men have the biggest death rate.
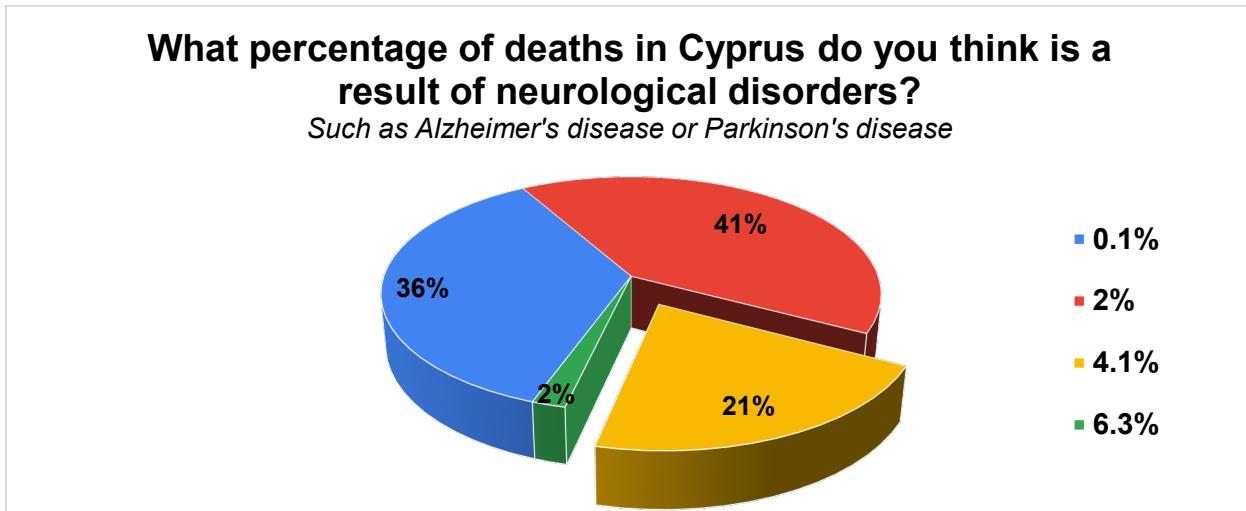

Figure 7: Perception for neurological disorders

Most of the participants underestimated the death rate caused from neurological disorders. Around 77% of the participants believe that the death rate from this cause is lower than 2%. In particular 41% vote that the death rate from this cause is 2% and 36% selected 0.1%. Only the 21% of the participants found the actual figure which is 4.1%. Most of the participants (52%) voted that women have the biggest death rate from neurological disorders.
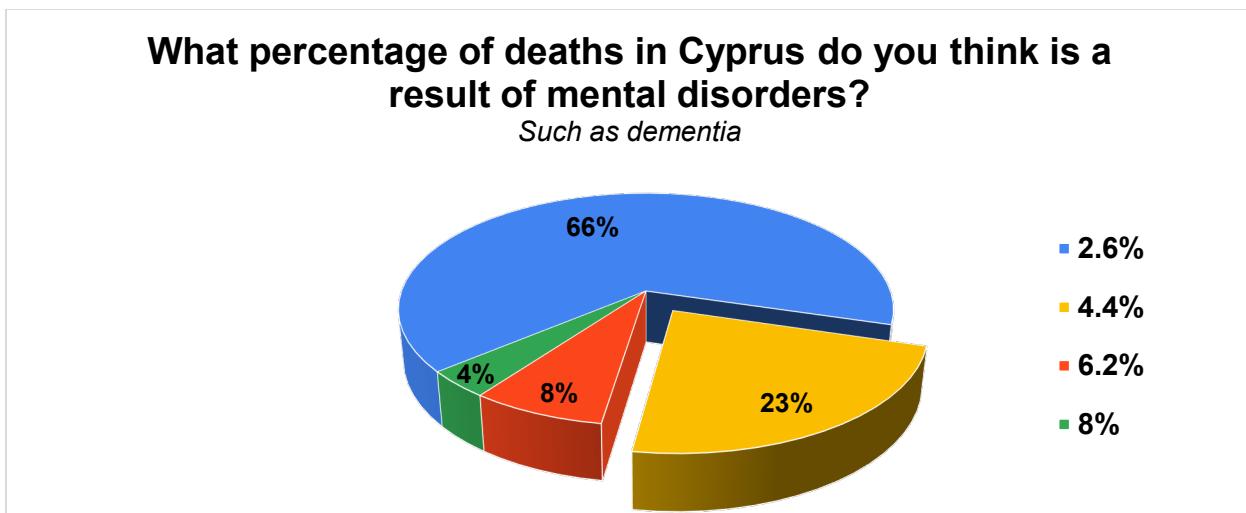

Figure 8: Perception for mental disorders

The majority of the participants (**66%**) believe that the death rate from this cause is 2.6% when in reality the figure is higher (4.4%). Only the **23%** of the participants found the correct death rate from mental disorders. Fewer participants (**8%** and **4%**) selected the figures 6.2% and 8% as the death rate of this cause. Most of the participants (53%) voted that women have the biggest death rate from mental disorders.
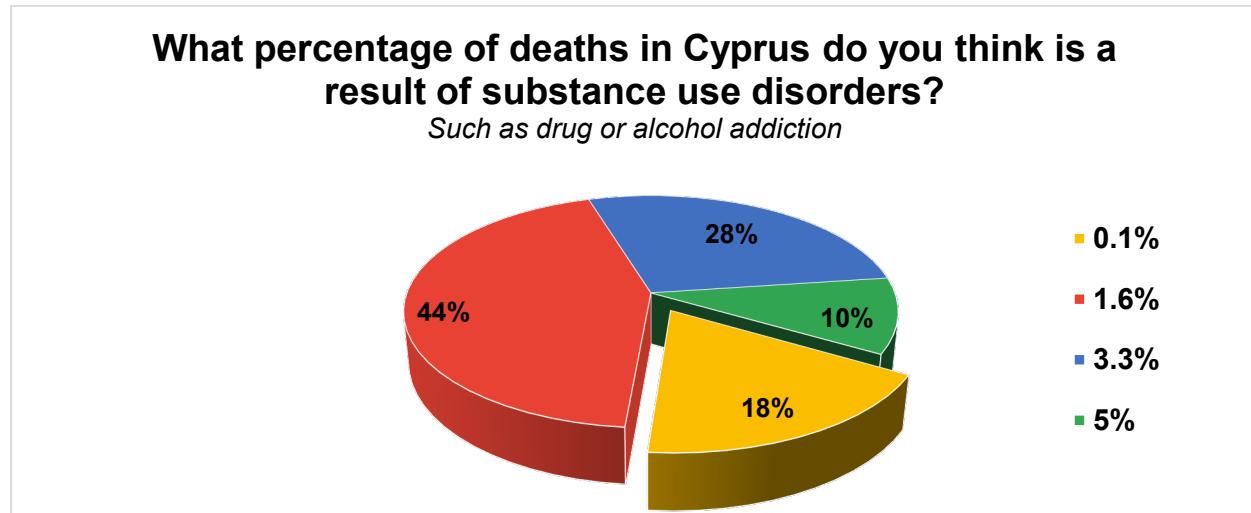

Figure 9: Perception for substance use disorders

In this question, most of the participants overestimated the death rate caused from substance use disorders since 82% believe that the rate is higher than 1.6%. Specifically, **44%** think that the death rate from this cause is 1.6%, **28%** selected 3.3% and **10%** chose 5%. Only **18%** of the participants found the actual death rate which is 0.1%. For this specific cause, all of the participants chose that men have the biggest death rate.
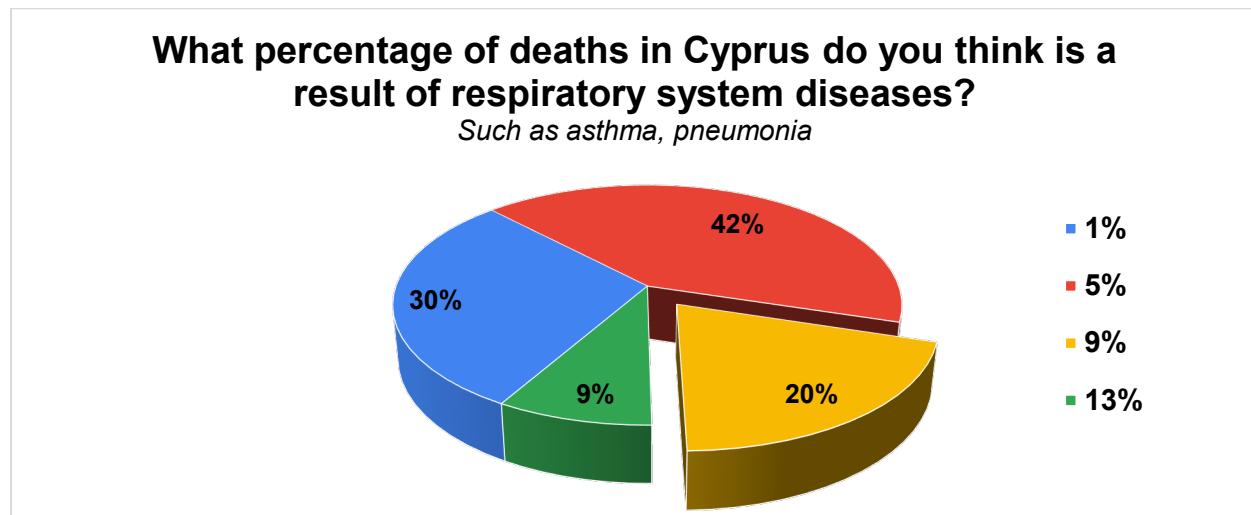

Figure 10: Perception for respiratory system diseases

In regard to the above question, the majority of the participants (**72%**) believe that the death rate from respiratory system diseases is less than 5%. The **20%** of the participants found that the actual death rate from this cause is 9%. Only **9%** of the participants believe that death rate from this cause is higher than the actual i.e., 13%. Furthermore, the 70% of the participants believe that men have the highest death rate from this cause.
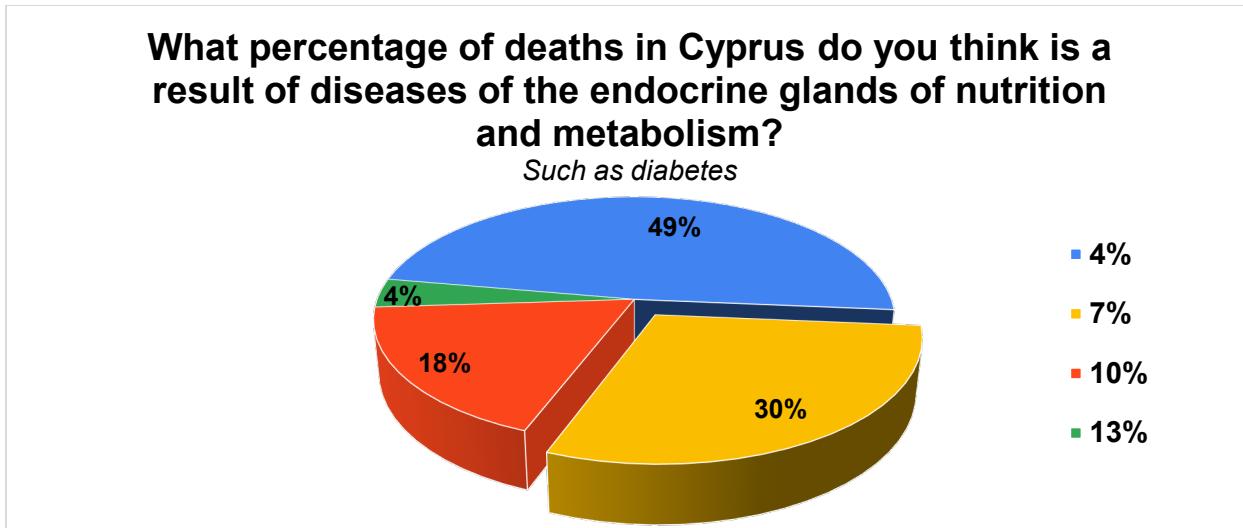

What percentage of deaths in Cyprus do you think is a result of diseases of the endocrine glands of nutrition and metabolism?
Such as diabetes

49%
4%
18%
30%

- 4%
- 7%
- 10%
- 13%

Figure 11: Perception for diseases of the endocrine glands of nutrition and metabolism

Almost half of the participants (**49%**) believe that the death rate from this cause is 4%. Only the **30%** of the participants found the actual death rate of Cypriot citizens which is 7%, whereas the remaining participants (**22%**) overestimated this cause. Furthermore, the **54%** of the participants believe that women have the highest death rate from this cause.
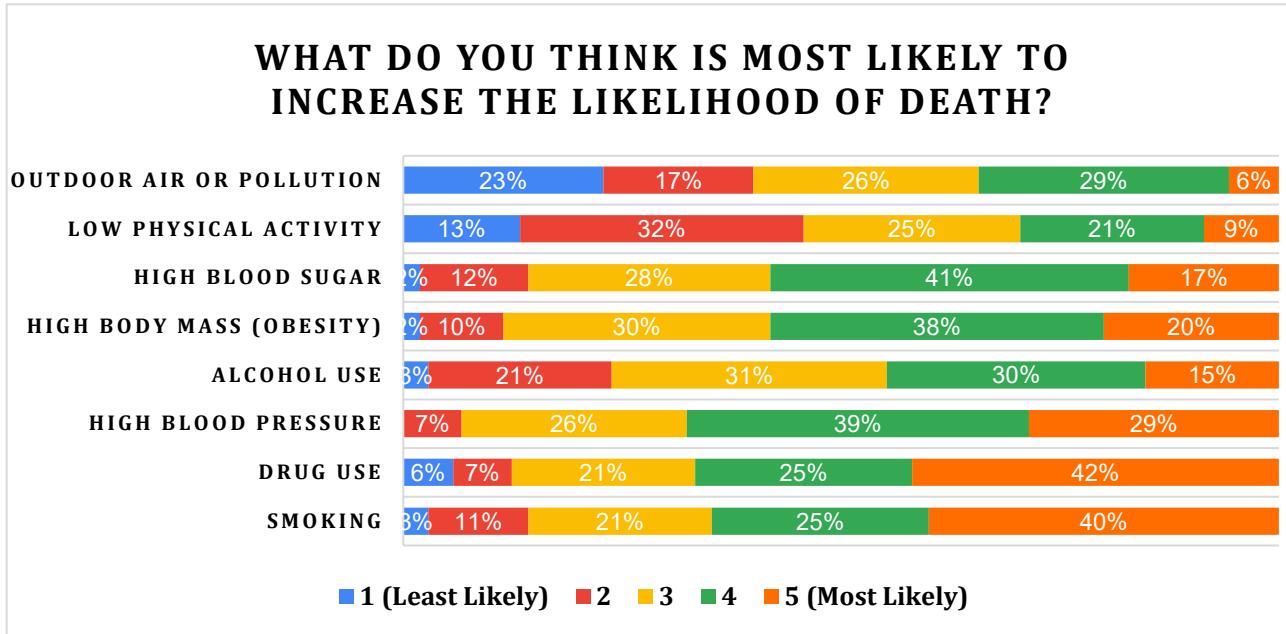
4.5. Factors that Increase the Likelihood of Death

WHAT DO YOU THINK IS MOST LIKELY TO INCREASE THE LIKELIHOOD OF DEATH?

Factor	1 (Least Likely)	2	3	4	5 (Most Likely)
OUTDOOR AIR OR POLLUTION	23%	17%	26%	29%	6%
LOW PHYSICAL ACTIVITY	13%	32%	25%	21%	9%
HIGH BLOOD SUGAR	2%	12%	28%	41%	17%
HIGH BODY MASS (OBESITY)	2%	10%	30%	38%	20%
ALCOHOL USE	3%	21%	31%	30%	15%
HIGH BLOOD PRESSURE		7%	26%	39%	29%
DRUG USE	6%	7%	21%	25%	42%
SMOKING	3%	11%	21%	25%	40%

Figure 12: Distribution of factors that increase the likelihood of death

← Least Common						Most Common →	
2.7	2.8	3.3	3.6	3.6	3.9	3.9	3.9
Outdoor air or pollution	Low physical activity	Alcohol use	High blood sugar	High body mass (obesity)	Smoking	High blood pressure	Drug Use

Table 3: average score/ranking per factors

Most of the participants rated drug use and high blood pressure to be the causes that are most likely to increase the likelihood of death with average score of 3.9. Also, the above graph shows that the rating distribution of drug use and smoking are very similar, in other words the participants gave almost the same rate which means that they believe both causes can equally affect the likelihood of death. Other causes that have similar distributions are the high blood sugar and high body mass.

Outdoor air or pollution is considered to be the least likely cause that can increase the likelihood of death. Low physical activity is also rated as least likely with an average score of 2.8 which makes it the second least likely cause.
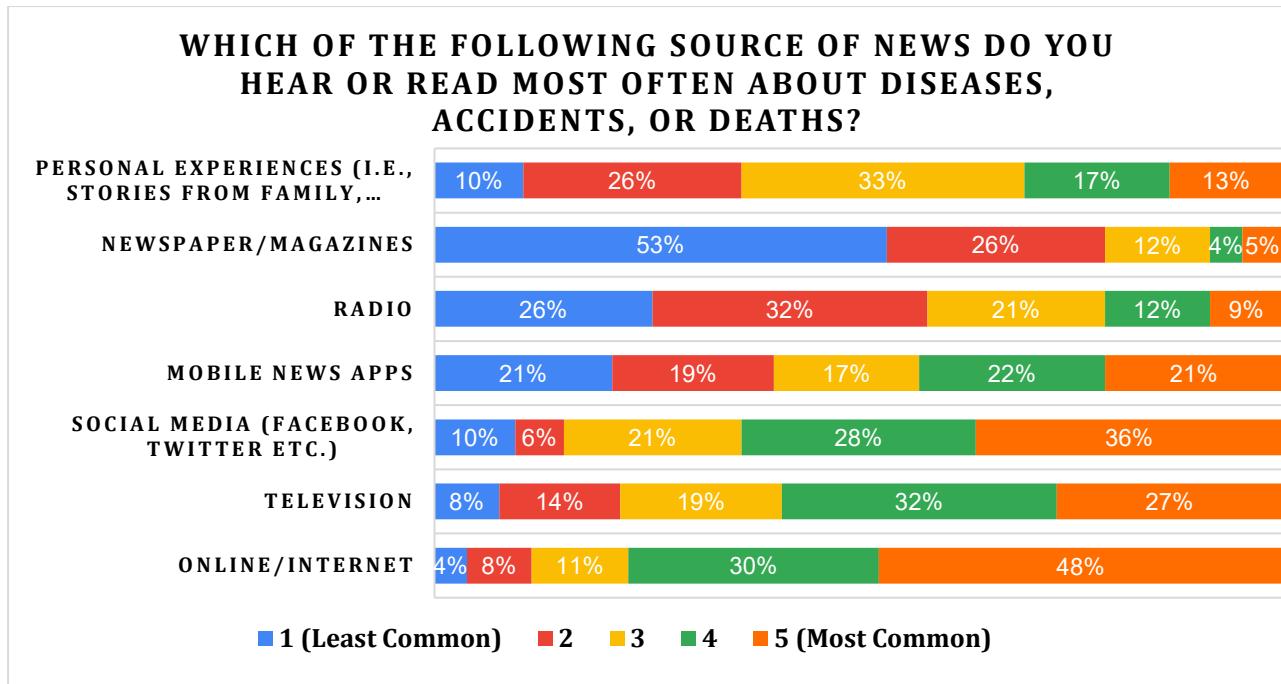
4.6. Sources of Information

Figure 13: Distribution of the most common source of news regarding deaths/accidents/diseases

← Least common						Most Common →
1.8	2.5	3.0	3.0	3.6	3.8	4.1
Newspaper/ Magazines	Radio	Personal Experiences	Mobile News Apps	Television	Social Media	Online/ Internet

Table 4: average score/ranking per source of news

Almost half of the participants (48%) rated that the most common source of news that read about diseases, accidents and deaths is the internet. The 36% of the participants voted the social media as the most common source of news and 27% of them voted the television. This outcome is also confirmed by the average score estimated for each source of news.

On the other hand, according to the participants (53%), newspapers and magazines are the least common sources of news that read about diseases, accidents and deaths, with average score 1.8 (out of 5). Second least common source of news with fewer participants (26%) and an average score of 2.5 is the radio. Personal experiences and mobile news apps have similar ranking (average score 3).
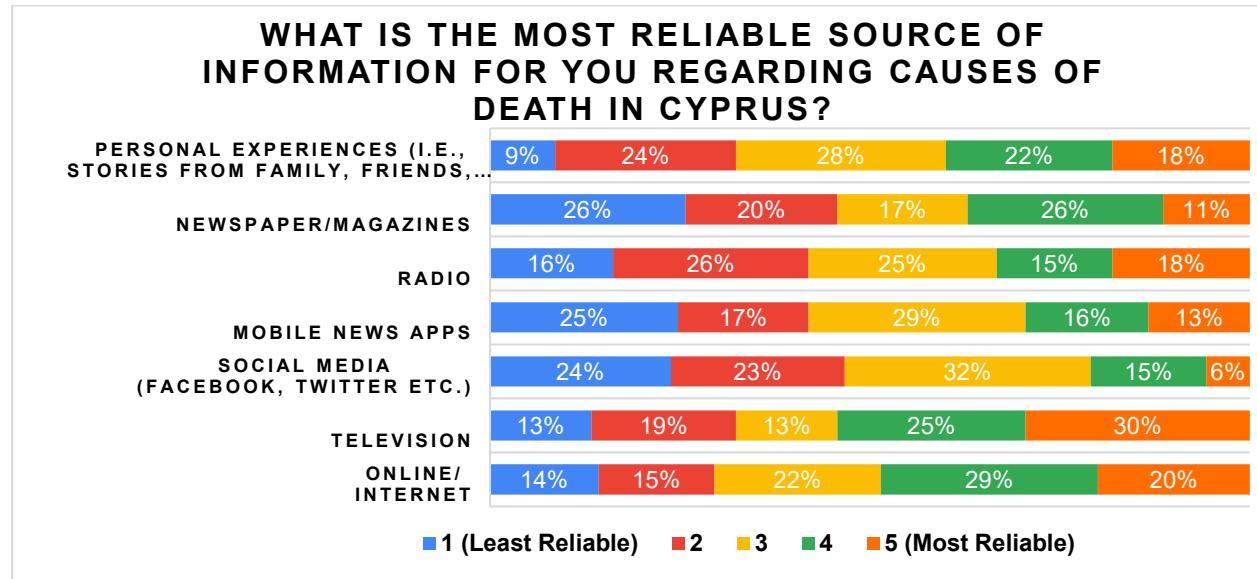
Figure 14: Distribution of the most reliable source of information regarding deaths/accidents/diseases

← Least common						Most Common →
2.6	2.8	2.8	2.9	3.2	3.2	3.4
Social Media	Mobile News Apps	Newspaper/ Magazines	Radio	Personal Experiences	Online/ Internet	Television

Table 5: average score/ranking per source of information

Television is the most reliable source of information regarding causes of death in Cyprus, with an average ranking of 3.4. This outcome can be also observed from the distribution chart since 30% of the participants rated television with a score of '5'. The second most reliable source of information is the online/internet followed by the personal experiences, which have similar average score of 3.2 (out of 5).

On the other hand, according to the average score table, the least reliable source is the social media (2.6) followed by mobile news apps and newspapers/magazines (2.8). This outcome cannot be clearly observed from the chart distribution, and thus the average score table was needed to conclude to the results.

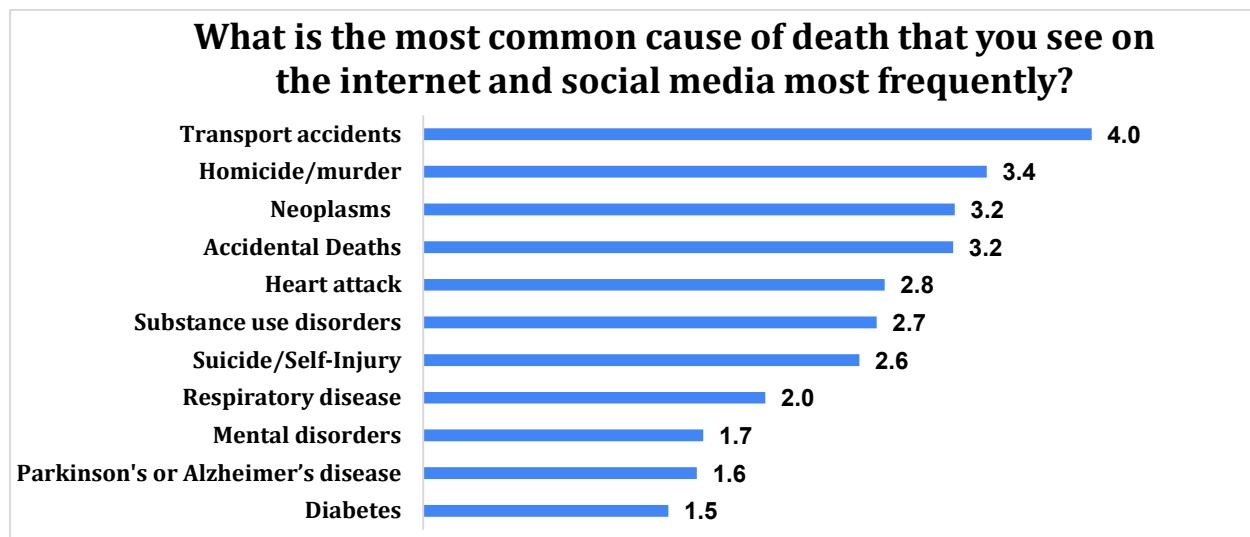## 4.7. Sources of Information for Each Cause of Death

What is the most common cause of death that you see on the internet and social media most frequently?

Cause	Score
Transport accidents	4.0
Homicide/murder	3.4
Neoplasms	3.2
Accidental Deaths	3.2
Heart attack	2.8
Substance use disorders	2.7
Suicide/Self-Injury	2.6
Respiratory disease	2.0
Mental disorders	1.7
Parkinson's or Alzheimer's disease	1.6
Diabetes	1.5

Figure 15: Average score/ranking of the most frequent causes of death on the internet and social media

The first four most common causes of death that are seen most often on the internet and social media are the Transport accidents (4.0), Homicide/murder (3.4), Neoplasms and Accidental deaths from external causes (3.2). The three causes of death that are the least frequent are the diabetes (1.5), Parkinson's or Alzheimer's disease (1.6) and other mental disorders (1.7).

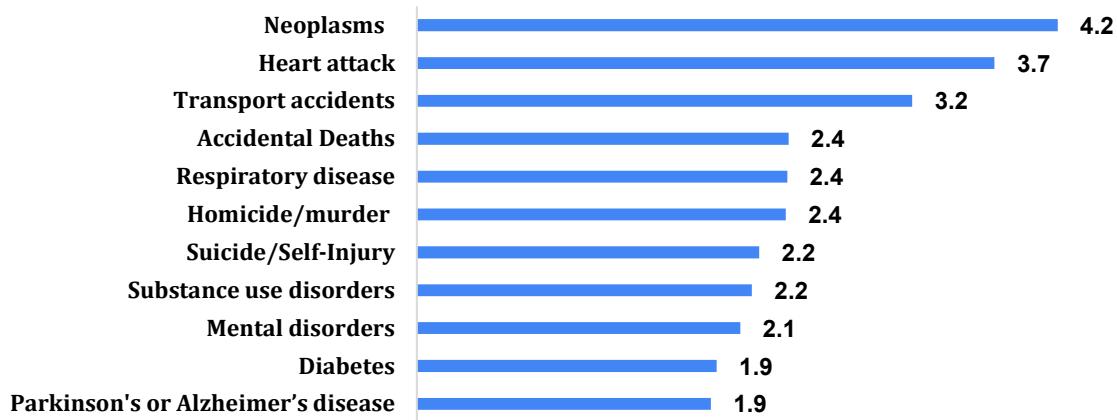**What is the most common cause of death that you hear from family members, friends and co-workers?**

Cause	Score
Neoplasms	4.2
Heart attack	3.7
Transport accidents	3.2
Accidental Deaths	2.4
Respiratory disease	2.4
Homicide/murder	2.4
Suicide/Self-Injury	2.2
Substance use disorders	2.2
Mental disorders	2.1
Diabetes	1.9
Parkinson's or Alzheimer's disease	1.9

Figure 16: Average score/ranking of the most frequent causes of death hearing from family members, friends and co-workers

According to participants, the causes of death that they hear most frequently from their personal environment are the Neoplasms with an average score of 4.2, Heart attacks (3.7) and Transport accidents (3.2). Mental disorders, Diabetes and Parkinson's or Alzheimer's disease were rated with the lowest score and they actually had similar ranking order as in previous question regarding the internet and social media.

Chapter 5

Discussion

Based on the results analysis of the participants' perception and the actual death rates presented in the Literature Review, the below chart was created to present the causes of death that are overestimated or underestimated from the participants. In addition, a table is presented below that compares the ranking of causes of death from the actual death rates versus the participants' perception of the most common cause of death.
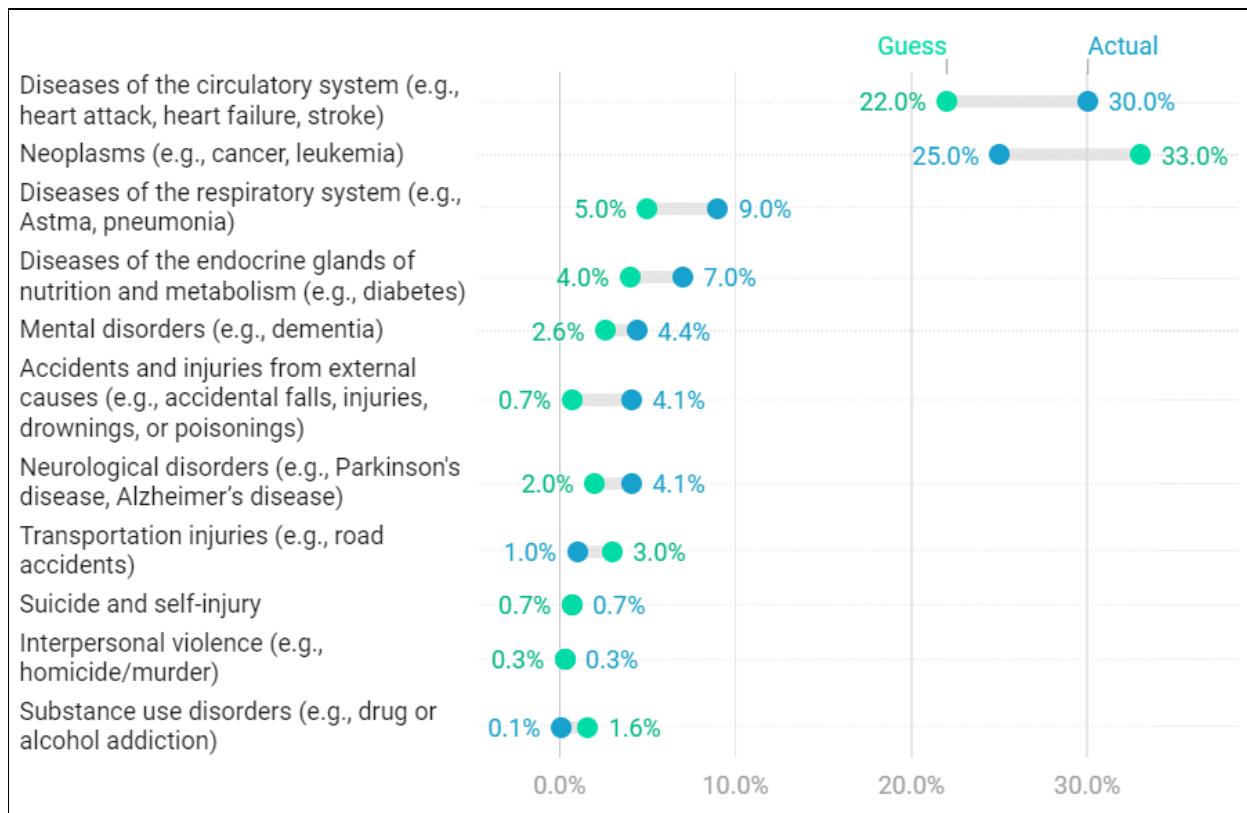

Figure 17: Actual death rate versus Participants' Perception

	The most common Causes of Death in Cyprus from National Registry (2018)		Participant's Perception for Most Common Causes of Death in Cyprus
1	Diseases of the circulatory system (e.g. heart attack, heart failure, stroke)		Neoplasms (e.g. cancer, leukemia)
2	Neoplasms (e.g. cancer, leukemia)		Diseases of the circulatory system (e.g. heart attack, heart failure, stroke)
3	Diseases of the respiratory system (e.g. Asthma, pneumonia)		Transport injuries (e.g. road accidents)
4	Diseases of the endocrine glands of nutrition and metabolism (e.g. diabetes)		Diseases of the respiratory system (e.g. Asthma, pneumonia)
5	Mental disorders (e.g. dementia)		Substance use disorders (e.g., drug or alcohol addiction)
6	Accidents and injuries from external causes (e.g. accidental falls, injuries, drownings or poisonings)	VS	Neurological disorders (e.g. Parkinson's disease, Alzheimer's disease)
7	Neurological disorders (e.g. Parkinson's disease, Alzheimer's disease)		Mental disorders (e.g. dementia)
8	Transport injuries (e.g. road accidents)		Diseases of the endocrine glands of nutrition and metabolism (e.g. diabetes)
9	Suicide and self-injury		Interpersonal violence (e.g. homicide/ murder)
10	Interpersonal violence (e.g. homicide/murder)		Accidents and injuries from external causes (e.g. accidental falls, injuries, drownings or poisonings)
11	Substance use disorders (e.g. drug or alcohol addiction)		Suicide and self-injury

Table 6: Actual Ranking VS Perception Ranking of the Most Common Causes of Death

According to participant's perception, neoplasms were rated to be the most common cause of death which is very close to the reality since neoplasms appears to have the second position in the ranking list. In particular, the majority of the participants overrated this cause of death since their guess for the death rate was 30% while the actual death rate is 25%. This outcome is contradicting with the study of Ipsos' Perils of Perception where most people in other countries actually underestimated this cause.

Diseases of circulatory system is the second most common cause of death based on the survey results while in reality is the leading cause of death in Cyprus (according to the report "Health and Hospital Statistics" provided by the statistical service of Republic of Cyprus) and in other

countries based on the study of Ipsos' Perils of Perception. Furthermore, most of the participants underestimated the death rate from this cause since their guess rate was 25% while the actual rate is 33%.

An unexpected outcome was that two causes of death, the transport injuries and the substance use disorder, appeared to be in the third and fifth place of the participants' ranking respectively, while in reality they have a much lower place in the ranking. Also, in both cases the majority of the participants (around 85%) overestimated these causes since their guesses were much higher than the actual death rates. The same perception about these causes of death exists across the majority of all 32 countries that participated in the Ipsos' Perils of Perception study.

According to the report of the OECD and the European Observatory on Health Systems and Policies, diabetes is one of the leading cause of death in Cyprus and its mortality rate is the highest in the EU. However, this cause was underestimated from most of the participants among with some other important cause such as diseases of the respiratory system, mental disorders, neurological disorders and accidents from external causes.

Men have the highest death rate in eight causes of death (out of 11) and women have higher percentage in only three causes of death such as the diseases of the endocrine glands of nutrition and metabolism, mental disorders and neurological disorders, based on the report "Health and Hospital Statistics" provided by the statistical service of Republic of Cyprus. Participants' perception was mainly in line with the above actual results apart from the cause of Interpersonal violence for which most of the participants believe that women have the highest death rate.

Based on my research in literature review, there are some factors that can affect people's perception including sources of information such as television, internet, social media, personal experience etc. In the questionnaire, I included questions that asked about the reliability of these sources and how often they mention certain causes of death in order to see if there is an influence in certain causes of death from some sources of news.

Transport injuries were rated as the first cause of death that they see most often on internet and social media and the third cause that they hear most frequently from their family, friends and co-workers. This result explains the fact that the majority of the participants overrated this cause and ended up being in a high position in the ranking list.

Furthermore, the fact that neoplasms were overestimated by most of the participants is because they hear this cause more often from their personal environment which is more likely to trust especially when it comes to these kind of issues. In addition, the negative 'images' of an event, mainly from personal experience, can create powerful emotions which can affect the perception of an individual regarding this event.

On the other hand, causes of death that are not seen more often on internet and social media or hear from personal environment such as diseases of the endocrine glands of nutrition and metabolism, mental disorders and neurological disorders, were underestimated by the participants and were found in lower positions in the ranking list.

The above suggest that people can be actually affected from these factors and can create a misconception about certain causes of death. Also, the internet and personal experience (i.e., stories from family, friends and colleagues) are the two most trustworthy sources of information according to participants and therefore there is no doubt that these factors influence people's perception.

Suicide or self-injury as well as interpersonal violence are the causes of death that most of the participants in Cyprus found the actual death rate, however, participants in other countries specifically in USA are more likely to overestimate the proportion of people who die from these causes, according to the study that was conducted from the students of University of California (Shen O., Al-Jamaly H., Siemers M., and Stone N., 2016). It was also observed that the general media is not giving the adequate attention and awareness on the most common causes of death such as cardiovascular or kidney diseases and instead they give more attention to other causes of death with lower mortality rates such as heavy drug use, suicides and homicides.

Moreover, violent accidents and homicides are overreported from some sources of information, particularly from newspapers based on the study conducted by P. Slovic and B. Combs (1979). Newspapers mention these causes more often and dedicate more length to this articles because they create more interesting and exciting stories than other causes of death and this may help in the sale of more newspapers. Another reason of this intense reporting of homicides and accidents is because people need to be informed about this risks in order to take necessary safety measures or establish appropriate regulations. On the other hand, diseases may be less important to the public, due to the fact that they are more common and inevitable of happening and they do not threaten the life of other people.

The report of the OECD and the European Observatory on Health Systems and Policies, outlines some behavioural risk factors that contribute to the increase of deaths such as smoking, diet, alcohol consumption and low physical activity. More specifically, the death rate in Cyprus caused by smoking and dietary risks (obesity) is significantly higher compared to the death rate of EU.

Most of the participants believe that drug use, high blood pressure and smoking are the factors that are most likely to increase the likelihood of death. The same risk factors were chosen by the participants of all countries in the Ipsos' Perils of Perception study. Generally, the participants' perception regarding these factors can influence their opinion of specific causes of death such as substance use disorder which in this case is overestimated by the participants of both studies.

Chapter 6
Conclusion

The present dissertation had a dual purpose. The first goal was to analyze the perception of individuals for the most common causes of deaths and compare these results with the actual statistical data from national registry. The second goal was to determine the factors that may differentiate people's perception and more specifically if sources of information can affect their opinion regarding mortality risks.

In conclusion, most of the participants of this survey recognized that the two most common causes of death are the circulatory system diseases and neoplasms. However, some important causes of death were misjudged and ended up being in a lower place of the perception ranking list such as the diseases of the respiratory system, mental disorders and others, while causes like transport accidents and substance use disorders were overestimated by the participants of this study. This misperception regarding certain causes of death was also observed in other studies that conducted in various countries.

Moreover, this study observed that sources of information such as internet and social media have an influence in people's perception, creating misconception regarding certain causes of death such as transport accidents, homicides and substance use disorders. Additionally, the information and the stories that they hear from their personal environment such as family, friends and co-workers, can create negative emotions which are enough to influence their perspective about major risks in life.

Annex A
Questionnaire

A.1 Questionnaire

Please spend a few moments to complete our service satisfaction survey. This survey is for academic study and it will not take more than 10 minutes to complete. Your responses will be kept confidential.

1. **What is your gender?**

   ○ Male
   ○ Female

2. **What is your Age?**

   ○ 18-24
   ○ 25-34
   ○ 35-44
   ○ 45-54
   ○ 55-64
   ○ 65 and above

3. **What is your highest level of education?**

  ○ Primary education

  ○ Secondary education

  ○ Bachelor's Degree

  ○ Master's degree

  ○ Doctorate Degree

  ○ Professional Qualification

4. **What is your employment sector?**

  ○ Government/Public Sector

  ○ Private Sector

  ○ Health Sector

  ○ Self-Employed

  ○ Pensioner

  ○ Housewife

  ○ Unemployed

  Other ….………….......

5. **The list below contains all the causes of death that concern residents of Cyprus.**
   Rate the following causes from 1 to 5, according to what you think are the most common causes of death in Cyprus, with 1 meaning "least common" and 5 meaning "most common".

	1 Least Common	2	3	4	5 Most Common
Interpersonal violence (e.g., homicide/murder)	☐	☐	☐	☐	☐
Diseases of the endocrine glands of nutrition and metabolism (e.g., diabetes)	☐	☐	☐	☐	☐
Transport injuries (e.g., road accidents)	☐	☐	☐	☐	☐
Neoplasms (e.g., cancer, leukemia)	☐	☐	☐	☐	☐
Diseases of the respiratory system (e.g., asthma, pneumonia)	☐	☐	☐	☐	☐
Mental disorders (e.g., dementia)	☐	☐	☐	☐	☐
Substance use disorders (e.g., drug or alcohol addiction)	☐	☐	☐	☐	☐
Parkinson's or Alzheimer's disease	☐	☐	☐	☐	☐
Diseases of the circulatory system (e.g., heart attack, heart failure, stroke)	☐	☐	☐	☐	☐
Suicide and self-injury	☐	☐	☐	☐	☐
Accidents and injuries from external causes (e.g., accidental falls, injuries, drownings or poisonings)	☐	☐	☐	☐	☐

6. **What percentage of deaths in Cyprus do you think is a result of neoplasms?**
Such as cancers or leukemia

     ○ 9%
     ○ 17%
     ○ 25%
     ○ 33%

    Who do you think has the biggest percentage of deaths from the above cause?

   ○ Men   ○ Women

7. **What percentage of deaths in Cyprus do you think is a result of interpersonal violence?**
Such as homicide/murder

     ○ 0.3%
     ○ 2.8%
     ○ 5.3%
     ○ 7.8%

    Who do you think has the biggest percentage of deaths from the above cause?

   ○ Men   ○ Women

8. **What percentage of deaths in Cyprus do you think is a result of accidents and injuries from external causes?**
Such as accidental falls, drownings or poisonings

     ○ 0.7%
     ○ 2.4%
     ○ 4.1%
     ○ 5.8%

    Who do you think has the biggest percentage of deaths from the above cause?

   ○ Men   ○ Women

9. **What percentage of deaths in Cyprus do you think is a result of transport injuries?**
Such as road accidents

    ○ 1%

    ○ 3%

    ○ 5%

    ○ 7%

    Who do you think has the biggest percentage of deaths from the above cause?

    ○ Men   ○ Women

10. **What percentage of deaths in Cyprus do you think is a result of suicide or self-injury?**

    ○ 0.7%

    ○ 2.5%

    ○ 4.3%

    ○ 6.1%

    Who do you think has the biggest percentage of deaths from the above cause?

    ○ Men   ○ Women

11. **What percentage of deaths in Cyprus are a result of neurological disorders?**
Such as Alzheimer's disease or Parkinson's disease.

    ○ 0.1%

    ○ 2%

    ○ 4.1%

    ○ 6.3%

    Who do you think has the biggest percentage of deaths from the above cause?

    ○ Men   ○ Women

12. **What percentage of deaths in Cyprus are a result of Mental disorders?**
Such as dementia

○ 2.6%

○ 4.4%

○ 6.2%

○ 8%

Who do you think has the biggest percentage of deaths from the above cause?

○ Men   ○ Women

13. **What percentage of deaths in Cyprus are a result of substance use disorders?**
Such as drug or alcohol addiction.

○ 0.1%

○ 1.6%

○ 3.3%

○ 5%

Who do you think has the biggest percentage of deaths from the above cause?

○ Men   ○ Women

14. **What percentage of deaths in Cyprus are a result of circulatory system diseases?**
Such as heart disease, strokes or heart failure.

○ 6%

○ 14%

○ 22%

○ 30%

Who do you think has the biggest percentage of deaths from the above cause?

○ Men   ○ Women

15. **What percentage of deaths in Cyprus are a result of respiratory system diseases?**
Such as asthma, pneumonia

○ 1%
○ 5%
○ 9%
○ 13%

Who do you think has the biggest percentage of deaths from the above cause?

○ Men   ○ Women

16. **What percentage of deaths in Cyprus are a result of diseases of the endocrine glands of nutrition and metabolism?**
Such as diabetes

○ 4%
○ 7%
○ 10%
○ 13%

Who do you think has the biggest percentage of deaths from the above cause?

○ Men   ○ Women

17.What do you think is most likely to increase the likelihood of death?
Rate the following causes from 1 to 5, with 1 being the "least likely" and 5 being the "most likely"

	1 Least Likely	2	3	4	5 Most Likely
Smoking	☐	☐	☐	☐	☐
Drug Use	☐	☐	☐	☐	☐
High blood pressure	☐	☐	☐	☐	☐
Alcohol use	☐	☐	☐	☐	☐
High body mass (obesity)	☐	☐	☐	☐	☐
High blood sugar	☐	☐	☐	☐	☐
Low physical activity	☐	☐	☐	☐	☐
Outdoor air or pollution	☐	☐	☐	☐	☐

18. **Which of the following source of news do you hear or read most often about diseases, accidents, or deaths?**
Rate the following sources from 1 to 5, with 1 being the "least common" and 5 being the "most common".

	1 Least Common	2	3	4	5 Most Common
Online/Internet	☐	☐	☐	☐	☐
Television	☐	☐	☐	☐	☐
Social Media (Facebook, twitter etc.)	☐	☐	☐	☐	☐
Mobile News Apps	☐	☐	☐	☐	☐
Radio	☐	☐	☐	☐	☐
Newspaper/Magazines	☐	☐	☐	☐	☐
Personal Experiences (i.e., stories from family, friends, colleagues)	☐	☐	☐	☐	☐

19. **What is the most reliable source of information for you regarding causes of death in Cyprus? Which source of information is more likely to trust?**
Rate the following sources from 1 to 5, with 1 meaning "less reliable" and 5 meaning "very reliable"

	1 Least Reliable	2	3	4	5 Most Reliable
Online/Internet	☐	☐	☐	☐	☐
Television	☐	☐	☐	☐	☐
Social Media (Facebook, twitter etc.)	☐	☐	☐	☐	☐
Mobile News Apps	☐	☐	☐	☐	☐
Radio	☐	☐	☐	☐	☐

Newspaper/Magazines	☐	☐	☐	☐	☐
Personal Experiences (i.e., stories from family, friends, colleagues)	☐	☐	☐	☐	☐

20. What is the most common cause of death that you see on the internet and social media most frequently?
Rate from 1-5, with 1 being the "less frequent" and with 5 being the "more frequent".

	1 Less Frequent	2	3	4	5 More Frequent
Homicide/murder	☐	☐	☐	☐	☐
Diabetes	☐	☐	☐	☐	☐
Transport accidents	☐	☐	☐	☐	☐
Neoplasms	☐	☐	☐	☐	☐
Respiratory disease (e.g., asthma, pneumonia)	☐	☐	☐	☐	☐
Mental disorders (e.g., dementia)	☐	☐	☐	☐	☐
Substance use disorders (e.g., drugs or alcohol)	☐	☐	☐	☐	☐
Parkinson's or Alzheimer's disease	☐	☐	☐	☐	☐
Heart attack	☐	☐	☐	☐	☐
Suicide	☐	☐	☐	☐	☐
Accidental deaths (drowning, falls or poisoning)	☐	☐	☐	☐	☐

21. What is the most common cause of death that you hear from family members, friends, and coworkers?
Rate from 1-5, with 1 being the "less frequent" and with 5 being the "more frequent".

	1 Less Frequent	2	3	4	5 More Frequent
Homicide/murder	☐	☐	☐	☐	☐
Diabetes	☐	☐	☐	☐	☐
Transport accidents	☐	☐	☐	☐	☐
Neoplasms	☐	☐	☐	☐	☐
Respiratory disease (e.g., asthma, pneumonia)	☐	☐	☐	☐	☐
Mental disorders (e.g., dementia)	☐	☐	☐	☐	☐
Substance use disorders (e.g., drugs or alcohol)	☐	☐	☐	☐	☐
Parkinson's or Alzheimer's disease	☐	☐	☐	☐	☐
Heart attack	☐	☐	☐	☐	☐
Suicide	☐	☐	☐	☐	☐
Accidental deaths (drowning, falls or poisoning)	☐	☐	☐	☐	☐

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