The Second Victim Phenomenon: A Case Study for Malta

by

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A dissertation submitted in partial fulfilment for the Degree of Master of Science in Health Systems Management and Leadership.

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September 2025

L-Università ta' Malta

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Abstract

The Second Victim Phenomenon (SVP) refers to the emotional and occupational challenges healthcare professionals face directly or indirectly after adverse events, with global prevalence ranging from 9% to over 90%. This study investigated SVP in Malta through a nationwide survey of 900 medical practitioners, nurses, and pharmacists. The Second Victims in Deutschland (SeViD) tool, the Big Five Inventory–10 (BFI-10), and open-ended questions were used to examine how demographic, workplace, cultural, and personality traits influenced risk, symptom load, and recovery. Prevalence reached 77.7% in medical practitioners, 69.8% in nurses, and 42.3% in pharmacists. Fewer than 40% recognised the term "second victim." Event types varied by profession: medical practitioners reported patient deaths, harm, or aggression; nurses cited aggression and deaths; pharmacists noted aggression and dispensing errors. Emotional and cognitive symptoms predominated, particularly reliving the incident, self-doubt, and concentration difficulties, with prolonged symptoms reported by 18.9% of medical practitioners, 14.7% of nurses, and 11.0% of pharmacists. Risk factors differed: in medical practitioners, fewer years of experience predicted higher symptom load; in nurses, older age increased risk, while experience was protective; in pharmacists, female gender and non-Maltese nationality predicted higher symptom load, while area of practice influenced prevalence. Personality traits did not predict SVP status but shaped symptom severity, with neuroticism heightening symptoms in nurses and pharmacists and openness in medical practitioners. Support was largely informal: nurses relied on peers, medical practitioners reported minimal structured help, and pharmacists expressed stronger expectations for institutional backing. Findings aligned with European research but revealed distinctive patterns, including high prevalence and unresolved trauma in medical practitioners, age-related risk and stronger behavioural symptoms in nurses, and nationality-linked severity in pharmacists. This highlights the need for targeted interventions to build resilience, reduce stigma, and implement a phased strategy to prevent SVP and lessen its impact in Maltese healthcare.

To my late father, in loving memory and with lasting gratitude.

Acknowledgements

I am profoundly grateful to my supervisor, Dr Patricia Vella Bonanno, for her guidance, expertise, and continuous support throughout the development of this dissertation. I also wish to thank Prof. Sandra Buttigieg, Head of Department, for her leadership and commitment.

My sincere appreciation also goes to Mr Mark Debono and Prof. Liberato Camilleri for their valuable assistance with the statistical aspects of this study.

Finally, I am deeply thankful to my husband and family for their patience and encouragement, and to all the participants who generously contributed their time to this research.

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List of Abbrevations

Adj. R^2	Adjusted coefficient of determination
α	Significance level
ANOVA	Analysis of Variance
B	Regression coefficient
BCa	Bias-Corrected and Accelerated
β	Standardised regression coefficient
BFI-10	Big Five Inventory – 10 items
BFI-44	Big Five Inventory – 44 items
CI	Confidence Interval
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CPD	Continuing Professional Development
df	Degrees of Freedom
EAP	Employee Assistance Programme
ED	Emergency Department
EMS	Emergency Medical Services
ENT	Ear, Nose, and Throat
ERNST	European Researchers' Network Working on Second Victims
FHS	Faculty of Health Sciences
forYOU	Peer-support programme for second victims developed at the University of Missouri Health Care
FREC	Faculty Research Ethics Committee
GPs	General Practitioners
G*Power	Statistical power analysis software
G-MISS-HP	German version of the Moral Injury Symptom and Support Scale for Health Professionals
G-SVESTR	German version of the Second Victim Experience and Support Tool
H	Kruskal–Wallis test statistic

IBM SPSS	International Business Machines Statistical Package for the Social Sciences
ICU	Intensive Care Unit
KoHi	Krankenhausinterne Hilfe (Hospital-based peer-support framework in Austria)
LCI	Lower Confidence Interval
LLCI	Lower- Level Confidence Interval
M	Mean
MAM	Medical Association of Malta
MCFD	Malta College of Family Doctors
MEDLINE Complete (EBSCO)	Major biomedical and life sciences database, accessed via EBSCO platform
MISE	Medico Internos Second Victims
MISS-HP	Moral Injury Symptom and Support Scale for Health Professionals
Micro/Meso/Macro	Levels of healthcare intervention
MUMN	Malta Union of Midwives and Nurses
n	Sample size
NMC	Nursing and Midwifery Council
OR	Odds Ratio
p	Probability value
Participant MP	Participant Medical Practitioner
Participant N	Participant Nurse
Participant P	Participant Pharmacist
PG	Postgraduate
PICOC	Population, Intervention, Comparison, Outcome, Context
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analyses
PSI	Patient Safety Incident
PTG	Post-Traumatic Growth
PsycINFO	Database covering psychology and behavioural sciences (American Psychological Association)

ρ	Spearman’s rank correlation coefficient
r	Pearson correlation coefficient
RISE	Resilience In Stressful Events
Scopus	Abstract and citation database of peer-reviewed literature
SD	Standard Deviation
SeViD	Second Victims in Deutschland
SeViD-I	Second Victims in Deutschland – Study I
SeViD-II	Second Victims in Deutschland – Study II
SeViD-III	Second Victims in Deutschland – Study III
SeViD-IV	Second Victims in Deutschland – Study IV
SeViD-A1	Second Victims in Deutschland – Austrian Study I
SeViD-A2	Second Victims in Deutschland – Austrian Study II
SeViD-A3	Second Victims in Deutschland – Austrian Study III
SeViD-VIII	Second Victims in Deutschland – Study VIII
SeViD-IX	Second Victims in Deutschland – Study IX
SeViPOR	Second Victim study in Portugal
SeViTA	Second Victim study in Italy
SEVIMA	Second Victim Phenomenon in Malta
SPSS	Statistical Package for the Social Sciences
SVEST	Second Victim Experience and Support Tool
SVEST-R	Second Victim Experience and Support Tool - Revised

SVP	Second Victim Phenomenon
SVS	Second Victim Syndrome
U	Mann–Whitney U test statistic
UG	Undergraduate
UHM	Union Ħaddiema Magħqudin
ULCI	Upper- Level Confidence Interval
URECA	University Research Ethics Committee Application portal
VIF	Variance Inflation Factor
WHO	World Health Organization
WiHelP	Wiesbaden Institute for Healthcare Economics and Patient Safety
YOU Matter	Peer-support programme at Nationwide Children's Hospital (USA)
Z	Standardised test statistic for Mann–Whitney or related tests
χ^2	Chi-squared test statistic

Definition of Key Concepts

First victim: The first victim is the patient and often their family, who are directly harmed by a medical error or adverse event (Liukka et al., 2020). Support for first victims usually focuses on transparent disclosure, empathetic communication, appropriate emotional and informational assistance, and, where necessary, a sincere apology, to preserve trust and centre the patient in safety responses.

Second victim: The second victim is the healthcare worker affected by an adverse event. The broad consensus definition from the European Researchers' Network Working on Second Victims (ERNST) describes this as "any health care worker, directly or indirectly involved in an unanticipated adverse patient event, unintentional healthcare error, or patient injury, and who becomes victimised in the sense that they are also negatively impacted" (Vanhaecht et al., 2022, p. 2). This definition highlights that second victims include both clinical and non-clinical staff, and that the impact can be emotional, psychological, or professional. Support is structured through the five-tiered model, ranging from informal peer assistance to specialised professional care, to interrupt the vicious cycle of distress and impaired performance (Mira et al., 2024).

Third victim: The third victim refers to the healthcare organisation itself, which may suffer reputational damage, financial burdens, workforce morale decline, and cultural disruption following adverse events (Liukka et al., 2020). Support for third victims centres on institutional resilience, transparent communication, and system-wide learning to restore safety culture and public trust.

Chapter 1 – Introduction

1.1 Introduction

In Malta, as in other countries, the COVID-19 pandemic has exposed the vulnerability of healthcare workers and emphasised the urgent need to normalise conversations about psychological well-being. Since then, awareness has grown, and acceptance of discussing mental health and the emotional impact of adverse events on healthcare professionals has increased. Internationally, these concerns are often framed within the Second Victim Phenomenon (SVP), which offers a structured way to understand how adverse events affect the personal and professional lives of healthcare workers. This increased awareness on a national level, the researcher's experience as a pharmacist in the main public hospital, and motivation to support preventative and corrective actions to reduce the impact of the SVP, led to this case study.

1.2 Overview of the Second Victim Phenomenon

This section introduces the SVP by outlining the development of the concept, the debate surrounding its terminology, prevalence data, approaches to measuring its prevalence, and the support measures introduced to address its consequences.

1.2.1 Development of the concept

Adverse events in healthcare not only harm patients, the first victims, but also often affect the professionals involved. This has been formally described as the SVP, a term introduced by Wu (2000), who observed that clinicians may experience guilt, shame, and isolation following an error, often compounded by silence or blame from colleagues. While this framing was valuable for drawing attention to the hidden emotional toll of medical mistakes, it was limited by its emphasis on individual responsibility and personal error.

Building on Wu's work, Scott et al. (2009) broadened the perspective by showing that the SVP could be triggered not only by medical errors but also by a wider range of unanticipated events, including patient deaths, aggression, and systemic failures. More recently, Vanhaecht et al. (2022), through the European Researchers' Network Working on Second Victims (ERNST), advanced this understanding further by establishing a consensus definition: *"Any health care worker, directly or indirectly involved in an unanticipated adverse patient event, unintentional healthcare error, or patient injury, and who becomes victimised in the sense that they are also negatively impacted"*. These refinements reflect a shift from an error-centred focus toward a more comprehensive recognition of both individual and organisational vulnerabilities. Healthcare professionals who experienced the SVP often faced serious consequences following adverse events, ranging from guilt, shame, and withdrawal to burnout, attrition, and wider organisational repercussions such as defensive practice, reduced morale, and compromised patient safety (Scott et al., 2009; Seys et al., 2013; Mira et al., 2024). In severe cases, these effects escalated into tragic outcomes, such as the widely cited case of Kimberly Hiatt, a nurse who died by suicide after a fatal medication error and the absence of adequate institutional support (Newland, 2011). Beyond individual suffering, adverse events also affect the healthcare organisation, described as the "third victim." Researchers have highlighted that institutions may experience reputational harm, financial strain, and the need for systemic responses that include strategic planning, infrastructure development, staff training, and transparent communication (Liukka et al., 2020; Russ, 2017).

1.2.2 Debate on the Terminology

Although widely adopted in both research and practice, the term *second victim* has been the subject of sustained criticism. Tumelty (2018) raised several lines of concern. First, the author argued that describing healthcare professionals as "victims" may unintentionally diminish or overshadow the primary suffering of patients and families, shifting attention away from those most directly affected. Second, Tumelty suggested that the terminology risks portraying clinicians as passive, which may conflict with expectations of professional responsibility and accountability. Third, the author highlighted that the term can divert attention from the organisational and latent system factors that frequently underpin adverse events, thereby reinforcing an individualised rather than a systems-based view of error (Tumelty, 2018).

These concerns emphasise that while the phenomenon itself is recognised, the terminology remains sensitive and debated.

1.2.3 Prevalence and Measurement

Since Wu's (2000) initial definition, growing awareness of the SVP has prompted researchers to examine its prevalence across diverse healthcare professions and organisational settings. To address this, a number of measurement tools have been developed. The Second Victim Experience and Support Tool (SVEST) (Burlison et al., 2017) and the (Second Victims in Deutschland) SeViD tool (Strametz et al.2021) were among the first structured instruments to be used. Studies using these instruments have reported prevalence rates ranging from as low as 9% to more than 90% (Seys et al., 2013; Jain et al., 2022). This wide variation reflects not only

differences in the definitions applied but also variations in healthcare contexts, professional roles, and methodological approaches. Despite variability in prevalence, studies consistently indicated that the SVP was widespread and highlighted the necessity of support measures.

1.2.4 Support Measures and Consequences

Recognition of the risks associated with the SVP prompted the development of structured support initiatives across different contexts. Some, such as the forYOU programme at the University of Missouri (Scott et al., 2010), RISE at Johns Hopkins (Edrees et al., 2016), and the Buddy Study in Denmark (Schroeder et al., 2022), were designed as peer-level interventions, focusing on immediate collegial support and psychological first aid. Other contributions have examined broader approaches, including the Spanish MISE e-learning programme that was developed to raise awareness and strengthen coping strategies (Mira et al., 2017), the descriptive documentation of the Austrian hospital-based KoHi peer-support framework (Klemm et al., 2024), and the economic modelling of a potential national programme in Germany (Rösner et al., 2024). Collectively, these models sought to provide structured pathways for affected professionals, underscoring a growing recognition of the need to address the individual, organisational, and systemic impact of the SVP.

1.3 Contextualising the Second Victim Phenomenon in the Maltese Healthcare System

In Malta, stigma has long acted as a major barrier to psychological help-seeking. In small-state systems such as Malta, the close-knit nature of professional networks amplifies reputational concerns, as limited anonymity and heightened visibility

increase the perceived risks of disclosure (Azzopardi-Muscat et al., 2024; WHO, 2021). Broader studies of the general population have echoed this reluctance, revealing that feelings of shame and fear of judgment often prevent individuals from accessing support, with only one in three Maltese people turning to professionals when in difficulty (Scerri et al., 2023; Grech, 2019). When combined with professional reputation concerns, these cultural attitudes leave healthcare practitioners particularly vulnerable to unresolved psychological distress.

Recognition of this challenge has gradually emerged in national policy frameworks. The National Mental Health Strategy 2020–2030 (Office of the Deputy Prime Minister & Ministry for Health, 2019), was the first major step in placing mental health on the national agenda, underlining the importance of improved services and systemic support. This was reinforced by the National Health Workforce Strategy 2022–2030, which explicitly acknowledged the toll that the COVID-19 pandemic had taken on staff wellbeing. The strategy reported that healthcare workers were frequently "on the brink of burnout" due to long working hours and limited opportunities for rest (Health Management, 2022; Ministry for Health, 2022). This Strategy outlined broad commitments to expanding access to counselling, resilience initiatives, and self-care training, signalling a shift towards recognising the pressures faced by the workforce and a willingness to adopt interventions.

Signs of growing political awareness have also surfaced. On 25 October 2023, in Parliamentary Question No. 12757, Hon. Ivan Bartolo asked the Minister for Health and Active Ageing what measures were being taken to safeguard the mental health of staff working in the Accident and Emergency Department at Mater Dei Hospital and ambulance drivers. In reply, Minister Jo Etienne Abela referred directly to the *Health*

Workforce Strategy 2022–2030, noting that the issue of staff wellbeing was embedded within this overarching policy framework (Bartolo, 2023; Government of Malta, Ministry for Health, 2022).

Taken together, these developments illustrate a shift towards acknowledging the psychological burden faced by healthcare staff and formally recognition of the need for structured support. However, significant gaps remain. Both the Mental Health Strategy and the Health Workforce Strategy are framed in broad, system-wide terms and do not specifically address the unique challenges of healthcare professionals affected by the SVP in Malta. This leaves a critical need for more targeted, profession-focused interventions that move beyond general commitments to mental health and directly respond to the realities of healthcare professionals impacted by adverse clinical events in the local setting.

1.4 Scope

This study adopts the definition put forward by the European Researchers' Network Working on Second Victims (ERNST): refer to Section 1.2.1. Developed through a European consensus process, this definition has become an authoritative reference in the field.

Adopting this definition is central, as it sets a clear conceptual foundation from which to determine the prevalence of the SVP in Malta. Its wide coverage allows for a more accurate reflection of experiences across professional groups, reducing the risk of underestimation and identifying the areas where support is most critically required. Importantly, using standardised methodology and validated tools will further strengthen this approach, as they enable reliable comparison of prevalence across studies and contexts.

While national strategies have begun to recognise the importance of staff wellbeing, they remain broad in scope and do not specifically address the unique challenges posed by the SVP. This study, therefore, seeks to fill that gap by generating the first systematic evidence on SVP in Malta, providing the evidence for a national strategy that strengthens workforce wellbeing, addresses the psychological toll of adverse events, and safeguards patient safety through a resilient and supported healthcare system.

This leads to the general research question: What is the prevalence and impact of the Second Victim Phenomenon in Malta, and which strategies can prevent or address it?

1.5 Study Overview

The aim of this study is to investigate the prevalence and impact of the Second SVP among medical practitioners, nurses, and pharmacists in Malta. Additionally, it seeks to provide evidence to guide the development of effective support strategies for affected healthcare professionals.

The objectives of this study are: to determine the prevalence of the SVP among healthcare professionals in Malta; to characterise the experiences and symptoms associated with the SVP in healthcare professionals in Malta; to explore the impact of age, professional experience, and different work environments on the prevalence, severity, and coping mechanisms associated with SVP within each healthcare profession; to investigate the influence of personality traits on the severity of second victim symptoms; to assess the availability and perceived effectiveness of current support systems for second victims within each healthcare profession, according to

second victim status; to examine differences in perceived support systems across healthcare professions according to second victim status.

This dissertation is structured into six chapters. Chapter One introduces the SVP, explains the rationale for choosing the topic, situates the SVP within the local context and defines the overall aim of the research. Chapter Two reviews the international literature on the SVP, examining its prevalence, impact, and support strategies. Relevant local studies are also presented (Borg, 2006; Buttigieg et al., 2024; Scicluna Ward & Mangion, 2023; Spagnol, 2024). Chapter Three describes the aims and objectives. It also outlines the methodology, including research design, instruments, sampling, and ethical considerations. Chapter Four presents the results, organised according to the study's research objectives. Chapter Five discusses these findings in relation to existing literature and their theoretical, practical, and policy implications. Chapter Six concludes with a synthesis of results, key conclusions, and recommendations for practice and future research based on the results obtained.

Chapter 2 - Literature Review

2.1 Introduction

This chapter presents a critical review of existing literature on the Second Victim Phenomenon (SVP), drawing from both European and international research to inform the Maltese context. Given the absence of direct empirical studies on SVP within Malta, the review relies on broader healthcare literature while maintaining a focus on its applicability to small-state health systems. The chapter seeks to lay the groundwork for the current study and identify the relevance of existing models, risk factors, and organisational responses to SVP. It also gives evidence from the literature to address the research question as presented in Chapter 1: What is the prevalence and impact of the Second Victim Phenomenon in Malta, and which strategies can prevent or address it? A collation of the hypotheses emerging from the literature is presented in Section 2.12

2.2 Theoretical and Conceptual Frameworks

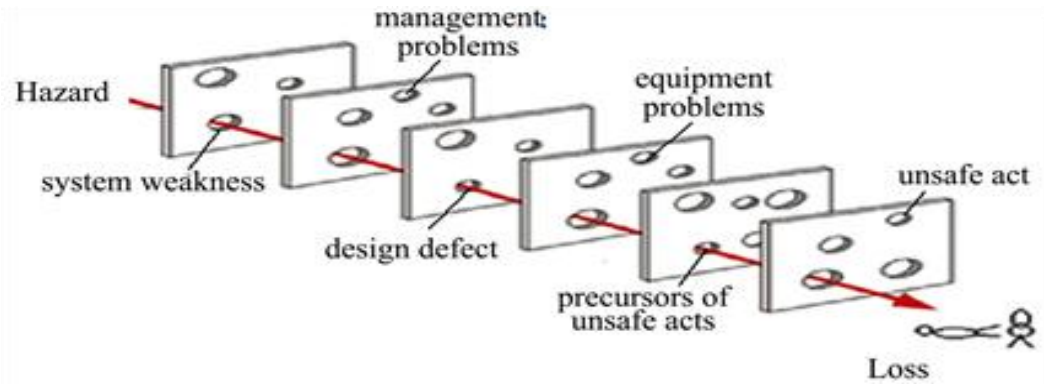
Understanding the SVP required a theoretical foundation that accounted for both individual responses of healthcare professionals and broader systemic influences. This section outlined three key frameworks that supported the study's approach: Reason's Swiss Cheese Model (1990), Scott et al.'s Five-Tier Support System (Seys et al., 2023), and the Big Five Personality Theory (Rammstedt & John, 2007). These frameworks provided insights into how adverse events affected healthcare professionals, how personal and situational factors shaped their responses, and how organisational interventions could mitigate harm.

2.2.1 Reason's Swiss Cheese Model (1990)

The Swiss Cheese Model, first introduced by Reason (1990) and later expanded in the healthcare context (Reason, 2000), is a widely used framework for understanding how adverse events occur in high-risk settings like hospitals. The model, shown in Figure 2.1, visualises an organisation's safety defences as slices of Swiss cheese, where each slice represents a barrier designed to prevent harm, and the holes indicate system flaws or vulnerabilities. A single weakness may not cause harm, but when the holes in multiple layers align temporarily, an error can pass through all the safeguards and reach the patient. These failures usually involve a combination of active errors, such as mistakes made by frontline staff, and latent conditions such as organisational issues like staffing shortages, poor communication, or flawed processes. Reason (2000) argued that incidents are rarely caused by a single individual but often reflect underlying system-level problems shaped by a healthcare organisation's safety culture.

Fig. 2.1

The Swiss Cheese Model adopted from Reason, J. (1990).



Note. Reprinted from Reason, J. (1990)

2.2.2 Big Five Personality Theory (Rammstedt & John, 2007)

The Big Five Personality Theory is a widely recognised psychological framework describing five broad traits: openness (curiosity and creativity), conscientiousness (organisation and dependability), extraversion (sociability and assertiveness), agreeableness (kindness and cooperativeness), and neuroticism (emotional instability and tendency toward anxiety). These traits are considered relatively stable over time and influence how individuals respond to emotionally distressing situations (Rammstedt & John, 2007).

As shown in Table 2.1, in healthcare, personality plays a crucial role in how professionals cope with clinical adversity, and personality traits are considered to impact the response to the SVP. (Strametz et al., 2021a; Marung et al., 2021; Potura et al., 2023, 2024; Bushuven et al., 2024). Individuals high in neuroticism are often more vulnerable to second victim experiences, as they may internalise blame or experience heightened anxiety. In contrast, traits such as conscientiousness, extraversion, and agreeableness have been associated with healthier coping mechanisms, including help-seeking and emotional regulation (Carver & Connor-Smith, 2010). These dynamics are explored further in Section 2.8, which examines the relationship between personality traits and symptom severity.

Table 2.1

The Big Five Personality Traits and Their Relevance to Second Victim Response

Aspect	Summary
Theory	Big Five Personality Theory
Core Traits	Openness, Conscientiousness, Extraversion, Agreeableness, Neuroticism
Stability	Traits are considered stable across time and contexts (Rammstedt & John, 2007)
International Findings	- High neuroticism → greater anxiety and self-blame - High conscientiousness, extraversion, agreeableness → more adaptive coping (Carver & Connor-Smith, 2010)

Note. Adapted from Rammstedt & John (2007)

2.2.3 Five-Tier Support System

The Five-Tier Support System (see Table 2.2) provides a structured, escalating approach to supporting healthcare professionals following emotionally distressing clinical events. Proposed by Seys et al. (2023) as part of the European Researchers' Network Working on Second Victims (ERNST), the model expands on the original Three-Tier Emotional Support System by Scott et al. (2009) to include prevention and culture-building and external specialist support. Five levels of support are outlined, beginning with preventive measures such as promoting a just culture and second victim awareness (Tier 1). This is followed by self-care and informal reflection (Tier 2), peer support and triage (Tier 3), structured professional support (Tier 4), and, when needed, clinical intervention (Tier 5). This model addresses both proactive cultural measures and access to specialist resources, making it more comprehensive and adaptable across diverse healthcare contexts (Mira et al., 2024).

Table 2.2

The Five-Tier Support System

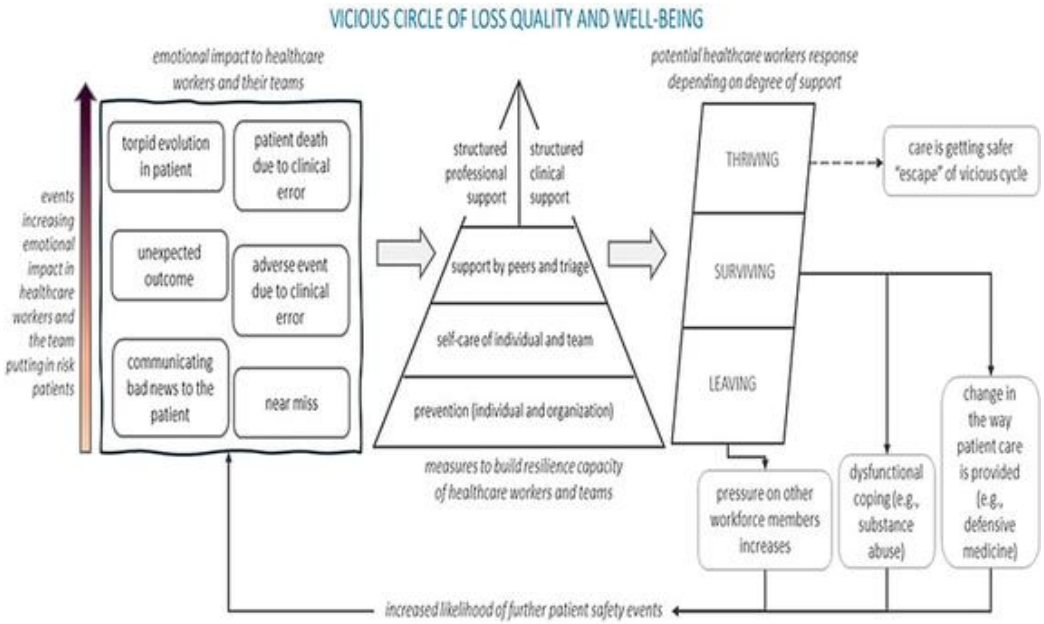
Tier	Support Level	Description
Prevention and Culture Building	Focus on safety culture and education	Promotes awareness, non-punitive responses, and institutional commitment to SVP.
Self-Care and Peer Support	Informal coping and social support	Encourages individual resilience and collegial support through peer networks.
Team-Based Support	Structured team debriefings	Facilitates reflective dialogue and learning after adverse events.
Institutional Psychological Services	Formal internal support systems	Provides in-house access to counselling or employee assistance programmes.
External Specialist Support	Referral to external services	Offers access to legal, psychological, or psychiatric expertise if required.

Note. Adapted from Seys et al. (2023)

The importance of such an approach is illustrated in Figure 2.2 by the "Vicious Circle of Loss of Quality and Wellbeing", which highlights how unaddressed emotional distress following adverse events can erode both staff wellbeing and patient safety. Without appropriate support, affected healthcare professionals may experience psychological symptoms such as anxiety, guilt, or shame, potentially leading to diminished performance, increased absenteeism, and a greater risk of further incidents, ultimately reinforcing a harmful cycle within clinical teams (Mira et al., 2024).

Figure 2.2

The Vicious circle of loss of quality and well-being



Note. Printed with permission from Mira et al., 2024

2.3 Systematic literature search

A systematic literature search was conducted using predefined thematic questions and the PICO(C) framework to guide the identification, selection, and synthesis of empirical and theoretical studies on the SVP.

2.3.1 The questions for the literature search

In line with the research question of this dissertation, the literature review was shaped by targeted search questions designed to identify both empirical and theoretical work on the SVP. The central question was intentionally broad, exploring methods for measurement of the prevalence of the SVP, how the SVP is experienced, its impacts, and strategies for prevention and support. To operationalise this focus, the search

strategy was organised around specific thematic domains, which guided the retrieval, selection, and synthesis of relevant literature. These domains were explored through the following questions:

1. What is currently known about the prevalence of the SVP in healthcare?
2. Which factors are associated with its occurrence?
3. What impacts does the SVP have on those affected?
4. How is support perceived by healthcare professionals, and what strategies are available to prevent or address the SVP?

2.3.2 Application of the PICO(C) Framework to Literature Selection

To ensure a structured and systematic approach to identifying and selecting relevant literature, the PICO(C) framework was applied. Originally developed to guide clinical research, this framework has been adapted for qualitative and mixed-methods reviews to formulate focused research questions and optimise search strategies (Methley et al., 2014). PICO(C) structures focus on five core elements: Population, Intervention, Comparison, Outcome, and Context. Each element was tailored to the research question of this study, as summarised in Table 2.3.

Table 2.3

Application of the PICO(C) Framework in This Study

PICO(C) Element	**Application in This Study**
Population	Healthcare professionals who experience the second victim phenomenon
Intervention	Support strategies for the prevention and reduction of impact of the SVP
Comparison	Professionals without SVP experience
Outcome	Prevalence, impacts
Context	Healthcare settings

2.3.3 Literature Search Strategy and Source Selection

Table 2.4 presents the inclusion and exclusion criteria established for this review. In summary, studies were eligible if they were peer-reviewed, published in English between 1 January 2005 and 31 July 2025, and examined the Second Victim Phenomenon (SVP) among healthcare professionals. Sources included both empirical studies (quantitative, qualitative, mixed-methods) and secondary works (systematic or narrative reviews, structured consensus papers). Eligible studies reported on outcomes such as prevalence, psychological distress, coping strategies, recovery, or support systems. Exclusion applied to non-empirical works, non-healthcare samples, studies focusing only on patient outcomes, or those lacking methodological clarity. Search phrases, combined with Boolean operators *AND* and *OR*, included: *(second victim OR second victim syndrome OR second victim phenomenon) AND (prevalence OR incidence OR frequency) AND (causes OR determinants) AND (effect OR outcome OR consequence) AND (peer support OR buddy system OR institutional help OR collegial support).*

The screening process is illustrated in Figure 2.3 using a PRISMA flow diagram (Page et al., 2021). The database search identified 686 records, of which 137 were removed as duplicates. After screening 549 titles and abstracts, 133 full texts were assessed for eligibility. Following this process, 57 studies met the inclusion criteria, comprising both database results and additional relevant works identified through supplementary sources.

Table 2.4

Literature Search Strategy and Summary of Eligibility Criteria

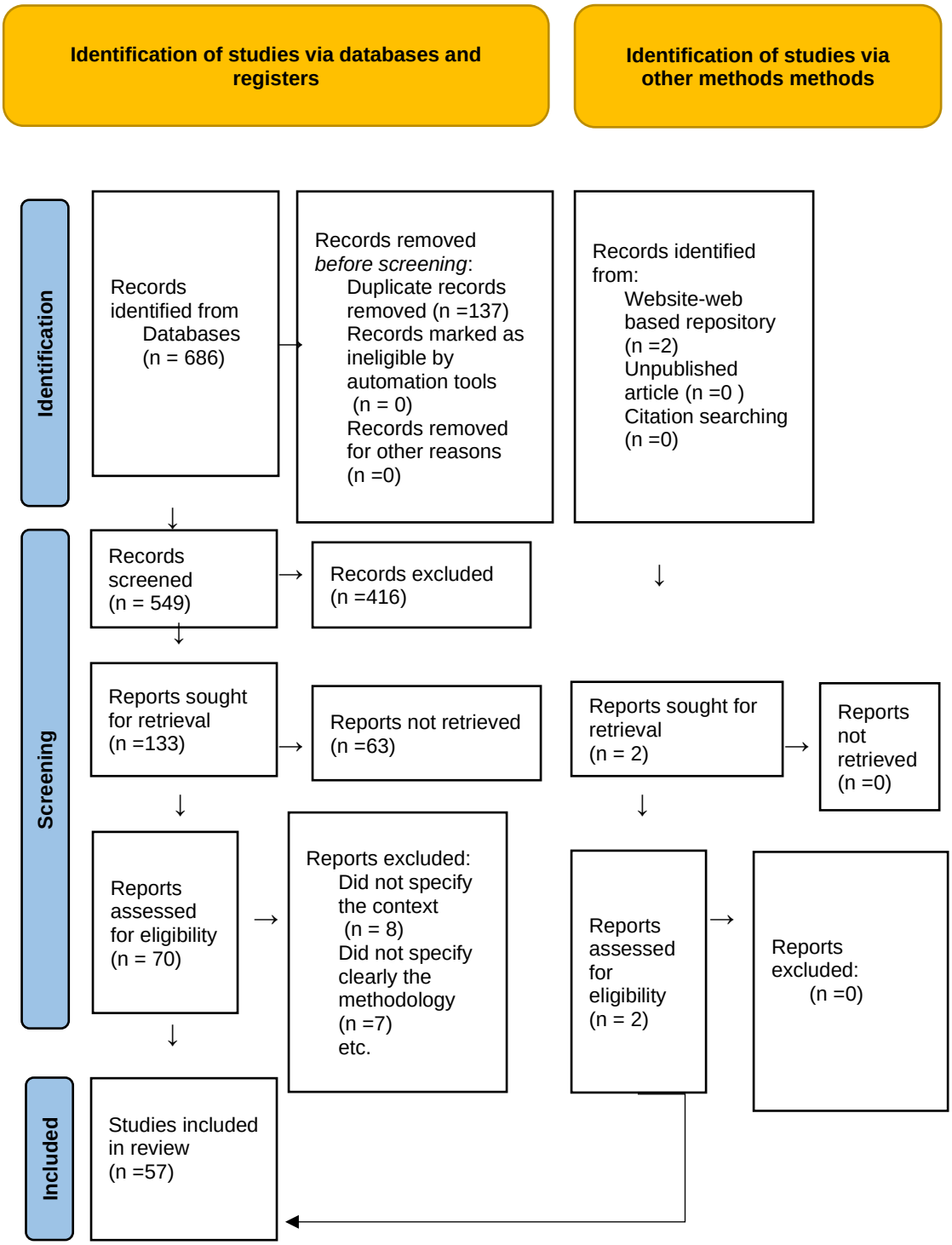
Category	Details	Rationale
Time Frame	1 January 2005 – 31st July 2025	Covers 20 years of relevant literature, including both foundational and current studies.
Language	English only	English chosen for confident interpretation of key concepts.
Inclusion Criteria	Peer-reviewed publications on the Second Victim Phenomenon among healthcare professionals, including empirical studies (quantitative, qualitative, or mixed-methods) and secondary sources (systematic or narrative reviews and structured consensus papers). Eligible studies addressed prevalence, emotional or psychological distress, coping strategies, recovery, or support systems.	To ensure comprehensive coverage of prevalence, impacts, coping, and support strategies relevant to the Second Victim Phenomenon.
Exclusion Criteria	Studies focusing solely on patient outcomes, non-healthcare worker samples, non-empirical works (e.g., editorials, commentaries), methodology not clearly defined, or the tools used were not mentioned were excluded.	To exclude opinion-based or methodologically unclear works, keeping the review focused on reliable and relevant evidence from healthcare professionals.
Databases Searched	CINAHL, MEDLINE Complete (EBSCO), Scopus, PsycINFO	Covers diverse health, psychological, and interprofessional sources.
Access Methods	University of Malta institutional subscriptions, open access (e.g., ResearchGate)	Ensures comprehensive and accessible literature retrieval.
Supplementary Sources	Website of the European Researchers' Network on Second Victims	Provides contextual European insights
Search terms	"Second victim" OR "second victim syndrome" OR "second victim phenomenon" AND "prevalence" OR "incidence"	Ensures systematic identification of relevant literature.

	OR “frequency” AND “causes” OR “determinants” AND “effect” OR “outcome” OR “consequence” AND “peer support” OR “buddy system” OR “institutional help” OR “collegial support”	
Documentation Tool	PRISMA flow diagram (Page et al., 2021)	Standard method for transparent review process documentation.

The screening process is illustrated in Figure 2.3 using a PRISMA flow diagram (Page et al., 2021). The database search identified 686 records, of which 137 were removed as duplicates. After screening 549 titles and abstracts, 133 full texts were assessed for eligibility. Following this process, a total of 57 studies met the inclusion criteria, comprising both database results and additional relevant works identified through supplementary sources.

Figure 2.3

PRISMA flow Diagram



The 57 peer-reviewed studies included 28 cross-sectional surveys, 8 qualitative studies, 6 mixed-methods investigations, 3 systematic reviews, 3 integrative reviews, 3 scoping reviews, 3 narrative reviews, and 3 consensus papers (including Delphi studies). Drawn from diverse international healthcare settings, these studies were thematically analysed across prevalence, factors and causes, impact and support and are presented in chronological order in Table 2.5.

Table 2.5

Characteristics and Thematic Findings of Studies on the Second Victim Phenomenon

Article	Country/ Region	Research Design & Sample	Thematic Findings			
			Prevalence	Factors and Causes	Impact	Support
Scott et al. (2009)	USA (multi-discipline)	Qualitative; semi-structured interviews; n=31 HCPs	Not provided	Unanticipated adverse patient events, medical errors, or patient-related injuries	Significant emotional distress**,** with potential career consequences such as burnout or departure from profession	Six-stage recovery trajectory identified; need tailored institutional support to restore confidence
Seys et al. (2013)	International (varied)	Review of 32 empirical studies + 9 non-research articles	Reported range app. 10.4-43.3% of HCPs across studies	Triggered by errors, near misses, and unexpected patient outcomes. Rooted in systemic failures and workplace pressures rather than individual mistakes	Emotional (guilt, anxiety), cognitive (loss of confidence), behavioural (defensive practice), and organisational (burnout, turnover, safety risks)	Limited formal support; reliance on peers; need for structured programmes

Mira et al. (2015)	Spain (multi-region organisations)	Cross-sectional survey; n=105 (managers/ safety officers/ HCPs)	28-57% physicians,79-895 residents; app 15% annually	Not specified; organisational focus	71% of hospitals and 61% of primary care lacked SV protocols; no contact persons were assigned	Peer support and training valued but rarely implemented.
Quillivan et al. (2016)	USA (14 hospitals)	Cross-sectional; n= 845 nurses; HSOPS +SVEST	Not reported	Weak safe culture, punitive responses, blame, and low trust in management	Emotional distress, absenteeism, and turnover intentions	Non-punitive culture valued; recommended structure, peer support, and reporting systems
Burlison et al.(2017)	USA (hospital system)	Cross-sectional web-based survey; n=303 HCPS	Not quantified (validation study)	Not addressed	Psychological and physical symptoms identified via SVEST	Peer support most preferred resource for second victims
Han et al. (2017)	USA (3 Boston teaching hospitals)	Cross-sectional web-based survey; n=126 surgeons (44.8% RR)	High, but exact % not reported	Intraoperative errors, fear of litigation, and unclear reporting	Distress, loss of confidence, impaired performance	Minimal support; need for protocols and resources
Chung et al. (2018)	USA (EM residency)	Consensus development (online + in-person summit)	Not reported	Not assessed	Not the focus	Developed SVS educator toolkit (lesson plans for wellness and SV awareness

Dukhanin et al. (2018)	USA (RISE in paediatrics)	Mixed-method case study; staff surveys + comments; -22-23% RR; n=202 respondents	22-23% response rate (not prevalence)	Blame culture, low awareness, workflow constraints	Increased support awareness and uptake; 93% recommend RISE	RISE improved emotional support accessibility; barriers included limited awareness, leadership engagement, and staff time
Merandi et al. (2018)	USA (NICU, Cincinnati Children's)	Survey-based; n=59 NICU staff	Not quantified - survey evaluated satisfaction with peer support utilisation.	Not assessed	Not measured	High satisfaction with peer support; confidentiality accessibility valued
Treiber & Jones (2018)	USA	Cross-sectional; n= 168 (nursing graduates)	>55% reported medication errors (specifically infusion-related errors).	Inexperience. high workload, and inadequate training	Emotional distress	Most felt supported:79% reported fair treatment, 61% supportive care, 62% compassionate responses

Ahmed et al. (2019)	Kuwait (tertiary govt hospital)	Cross-sectional survey; n=203 HCPs (nurses, pharmacists, physicians, radiographers, administrators)	> 60% reported medical errors (exposure proxy for SVP prevalence)	Mis-communication, workload, stress, inadequate training, and poor support systems	Impact on HCPs not reported, impact on patient readmission, side effects, and some patient deaths	Did *not* explore how institutions responded to errors in terms of support for staff
Kobe et al. (2019)	Canada (Radiation Oncology, Manitoba)	Mixed-methods; Canadian radiation therapists	86% clinical incidents; 31% had prior awareness of SVP	Clinical incidents	Emotional and physical distress common	Preference for peer support; desire structured support and a no-blame environment
El Hechi et al. (2020)	USA (Mass General Surgery)	Mixed-method intervention evaluation; surgeons & trainees	47 interventions /year; 19% declined support	Major surgical adverse events triggered support need	High satisfaction: confidentiality, trust, timeliness; 81% saw cultural improvement	Surgery-specific peer support widely used; 82% satisfaction; Improved psychological safety.

Liukka et al. (2020)	Finland (integrative review)	Integrative literature review; 25 empirical/ review papers	Not quantified (conceptual review)	Adverse events; organisational response capacities	Emotional burden, need for coping and professional adaptation	Multi-level strategy: communication, support services, training, structural change
McDaniel & Morris (2020)	USA (perinatal midwifery)	Qualitative study with practising midwives	Not quantified	Traumatic perinatal events (e.g., emergencies, births, deaths)	Lasting guilt, isolation, loss of confidence, shame, flashbacks, insomnia, helplessness	Need for peer, self-care, and organisational programmes for recovery
Burlison et al. (2021)	USA (36 hospitals)	Cross-sectional; n=3,149 clinical staff (nurses, physicians)	Not quantified	Distress following patient safety incidents	Greater SV distress → higher absenteeism and intent to leave	Supportive responses reduced these effects
Busch et al. (2021)	International	Systematic review; n=16 support programmes	Not quantified	Blame culture, low awareness, limited resources	Programmes beneficial; peer supporters found work meaningful yet challenging	12 structured, voluntary, confidential peer-based support programmes offered

Connors et al. (2021)	USA (Johns Hopkins RISE)	Mixed methods; n=27 volunteers	12% annual turnover among volunteers; 19 of 27 volunteers had served ≥ 3 years	Not applicable	Volunteers found their roles deeply meaningful and personally satisfying (100% meaning; 96% satisfaction; 93% felt impactful)	High meaning/ satisfaction; retention aided by resilience; some burnout; insights for volunteer sustainability
Edrees et al. (2021)	USA (Maryland acute care)	Qualitative interviews; n=43 safety officers/risk managers	SVP widely recognized by hospital leadership	Not assessed at individual level	EAPs available but inadequate slow, not tailored, hard to access	Inconsistent programme availability; stigma remains.
Strametz et al. (2021)	Germany	Nationwide cross-sectional; n=555 internal medicine trainees	59% lifetime; 35% past 12 months	Patient harm events: female gender risk factor	12% reported delayed recovery P1 year or no recovery).	90% valued emotional discussion, prompt debriefing, and opportunities to share learnings to prevent future incidents

Strametz et al. (2021a)	Germany (hospital nurses)	Cross-sectional; n=332 nurses SeViD-II	60% lifetime prevalence; 49% in the past year	Patient aggression as primary trigger; older age,higher neuroticism, and mid-level experience raised vulnerability	24% had recovery > 1 year	Institutional response desired
Buhlmann, Ewens & Rashidi (2022)	Australia (large tertiary hospital)	Qualitative descriptive; n=15 registered nurses	Not quantified	Critical clinical incidents	Emotional/ physical distress; internalised blame; individualised recovery; thoughts of leaving.	Organisational and collegial support needed.
Choi et al. (2022)	Republic of Korea (hospitals)	Cross-sectional; n=378 nurses	Not a single rate; three symptom profiles identified	Patient safety incidents with temporary harm; low organisational support	Nurses in the severe-symptom profile exhibited more intense distress	Three symptom profiles (mild/ moderate/ severe); severe group preferred psychological support, others' coping strategies, time off valued

Ganahl et al. (2022)	Austria (ICU in Tyrol/ Vorarlberg)	Qualitative; n=20 ICU nurses (semi-structured interviews)	Not quantified (qualitative)	Adverse events in ICU settings	Guilt and sleep disturbances were prominent	Reliance on peers/private support; need for structured psychosocial support
Jain et al. (2022)	South Asia (majority India)	Cross-sectional online survey; n=658 surgeons	91% of surgeons reported SVP symptoms	Low awareness; no specific triggers identified	Anxiety 48%, sadness 50%, sleep disturbance 39%; guilt fear, and self-doubt were common. 9.5% considered leaving; 1.5% suicidal thoughts.	Support was informal (peers, family); need structured peer-support programmes
Khansa & Pearson (2022)	USA (academic surgical training)	Cross-sectional; n=125 residents	88% involved in error;86.5% felt emotional impact; 12.5% had symptoms > 1 month	Technical/ decision errors; 44.6% with patient harm	Guilt, anxiety, and insomnia common	Only 24.3% received support; primary source was peers

Schroder et al. (2022)	Denmark (two hospital departments)	Cross-sectional + 3 interviews; n=191 total participants	Not quantified (the study assessed the peer support programme	Triggered by involvement in adverse or traumatic events; addressed via formal seminar and peer selection.	Seminar satisfaction: 91.6% positive; 69.1% found peer insight helped regulate their own emotional response	Buddy Study well-rated; improved emotional support & openness; needs ongoing promotion and broader institutional support.
Trifunovic et al. (2022)	Germany (varied settings)	Cross-sectional online survey; n=156 HCPs	Not quantified (instrument validation study)	Moral injury mediates SVP → symptom burden; neuroticism & agreeableness predict higher symptoms	Moral injury tied to distress, turnover intent, absenteeism, ↓self-efficacy & resilience	Not addressed
Vanhaecht et al. (2022)	Europe (consensus)	Systematic review informing consensus	Not applicable—this study defined the concept, not its frequency.	Involvement in an unanticipated adverse patient event, unintentional error, or patient injury, either directly or indirectly.	Negative emotional, psychological, or professional effects on the healthcare worker.	Outside the scope of this study Consensus definition of second victim to standardise identification and programme eligibility

Balogun et al. (2023)	Nigeria (UCH Ibadan, surgical residency)	Qualitative; n=31 surgical residents	90.3% involved in medical errors	Inter-operative errors, long hours, and sleep debt	Stress and negative emotions	Peer support; poor institutional support
Cohen et al. (2023)	Israel (various organisations)	Qualitative in-depth interviews; n=15 nurses (60-90 min)	Not quantified (qualitative study of affected nurses)	Adverse events; low awareness; stigma;punitive organisational culture, significant emotional/ physical distress	Emotional/ physical distress, poor emotional regulation, reduced functioning, and quality of life	Limited formal support; barriers include low awareness, stigma, and inaction
Kappes et al. (2023)	Chile (ICUs in public hospitals)	Cross-sectional cluster sample; n=326 ICU nurses (of 708 invited)	90% involved in adverse events; 67% distressed	Involvement in a general adverse event	67% reported distress post-event	Only 2.8% reported organisational support plans

Lin et al. (2023)	USA (Paediatric Surgery Depts)	Cross-sectional survey; n=73 paediatric surgeons/ trainees	84% reported distress after adverse events	Causes not specified	Emotional distress post-adverse events	82% sought peer support; 56% feared reporting repercussions
Marung et al. (2023)	Germany (EMS)	Cross-sectional using SeViD; n=401 complete responses (~12,000 invited)	53.1% lifetime; 13.7% 12-month prevalence	Unexpected patient deaths (37.1%); aggression from patients/ relatives (19.1%)	40% received no help; 11.3% had not recovered at survey time	Legal and counselling support seen as most helpful.
Naya et al. (2023)	Europe (ICU)	Systematic review and meta-analysis; 5 studies included	58% experienced SVP; ~20% had delayed or no recovery	No ICU-specific risk factors identified	Guilt, anxiety, self-anger, low confidence; ~20% delayed or incomplete recovery	Support programmes recommended, but none are detailed
Potura et al. (2023)	Austria (national paediatricians)	Cross-sectional; SeViD + BFI-10; n=414	89% reported SVPs	patient death/suicide; risk ↑ with neuroticism/ extraversion & outpatient roles	74% experienced SVPmore than once, reflecting recurring emotional impact	Support needs Shaped by neuroticism, extraversion, and outpatient roles; legal counselling most preferred

Scarpis et al. (2023)	Italy (Friuli Venezia Giulia)	Cross-sectional; Italian SVEST; n=733 HCPS	42% reported SV experiences	Not specified	Psychological distress (30.2%); severity: mild 58.7%, moderate 24.3%, severe 17%	Preferred support: colleague discussion. (78.7%), outside counselling (71.2%); severe cases favoured external, mild cases organisational
Seys et al. (2023)	Belgium/ Europe	Narrative literature review; n=104 peer-reviewed studies	~50% SV symptoms	Patient Safety Incidents; individual and organisational vulnerability	Diverse psychosocial, professional, and physical effects	Five-level adaptable support model proposed:prevention → self-care → peer → professional → clinical
Bredenkamp, Raschka, and Holmes (2024)	USA (paediatric pharmacy)	Narrative review (no primary sample	Not quantified; linked to medication errors	Medication errors	High emotional impact (guilt/fear)	Peer/group programmes exist (e.g., for YOU, RISE, YOU Matter, P2P)
Bushuven et al. (2024)	Germany (primary care)	Cross-sectional SeViD-IX; G-SVEST-R & G-MISS-HP;108 invited, 67 complete	Not specified (SVP estimated > 53% in prior studies)	Neuroticism, agreeableness predicted symptom severity; moral injury partially mediated effects	Higher symptom burden linked to these factors	Collegial support scale unreliable; formal support not explored

Catalán et al. (2024)	Multinational (students across Europe, Asia, America)	Scoping review; 7 studies	Not quantified (scoping review of 7 studies)	Medication errors, patient falls, procedural mistakes; intensified by high-pressure placements (ICU, surgery	Emotional distress (stress, hypervigilance), physical symptoms (sleep issues); outcomes split between "giving up" or "moving on."	Peer/supervisor support influenced outcomes; Institutional prevention and coping strategies recommended
Guerra-Paiva et al. (2024)	Europe (ERNST network)	Mixed methods training evaluation; n=41 HCPs across 17 countries	Not a measurement of SVP prevalence	Low awareness and stigma around SVP prompted development of the training	Enhanced understanding and awareness of SVP and support frameworks	Training 1 awareness, / stigma; enhanced readiness for SVP support implementation.
Huang et al. (2024)	China (Chongqing tertiary hospital)	Cross-sectional; n=474 HCPs (physicians & nurses)	Not quantified as a percentage. Moderate distress (M = 2.84) and Post Traumatic Growth (PMG) (M= 2.72)	PSIs, perceived threat, negative coping 1, distress, positive coping & social support distress & enhance PTG	Moderate distress; social support & positive coping boosted PTG	Positive coping & social support promoted post-traumatic growth; threat perception/ negative coping increased

Kuruvilla et al. (2024)	India (multispecialty hospitals)	Cross-sectional descriptive online survey; n=108 critical care nurses	68% experienced second victim symptoms	Unanticipated errors or near misses	Guilt (78%), low confidence (78%), anxiety (53%), self-anger (25%), physical distress (35%, absenteeism (20%), turnover intention (9%)	Strong need for peer, emotional, and informational support; recommended "YOU Matter" induction programme
Mira et al. (2024)	Europe (policy consensus	Consensus policy from 29 countries (literature/ workshops/ forums)	Not addressed (policy consensus)	Systemic healthcare failures	Emotional trauma, compromised safety.	Calls for peer programmes, just culture reforms, system-wide strategies for SVP support
Potura et al. (2024)	Austria (national nurses)	Cross-sectional; SeViD + BFI-10; n=928 (15.5% RR; ~79.6% female; mean age ~42.4)	81.6% reported SV experiences	Aggression from patients/relatives; higher impact among females/high agreeableness	Adverse effects on nurses' well-being and patient safety	Peer support (92.5%); desire to process events for understanding

Sedile et al. (2024)	Italy (Lecce, Puglia; hospital-based)	Cross-sectional; IT-SVEST; n=250 physicians and nurses	41% reported SVP-related involvement	Higher risk among males ICU physicians	23.5% psychological distress, 19.8% turnover intent, 9.9% physical distress	Support limited:23.8% no institutional support; 9.9% external help; 9.3% supervisor support
Collings et al. (2025)	Australia (multi-hospital)	Cross-sectional; n=727 0&G surgeons/trainees	High distress but not quantified	Poor outcomes (90%), severe consequences (87%), surgeon error (86%).	Guilt, anxiety, sleep disruption; stronger impact in younger, female, less-experienced surgeons	Not reported in the study
Gosselin et al. (2025)	USA (Duke & MSKCC)	Pilot evaluation	Not applicable (pilot evaluation)	Workplace stressors (errors, violence, community events) reduced stress; staff appreciated the programme.	Staff appreciated the programme; sustained institutional uptake	Reduced stress; valued by staff, adopted institutionally → sustainability demonstrated

Istrate et al. (2025)	Romania (national)	Nationwide cross-sectional survey; n=995 nurses	> 50% reported SVPS	57.9% near-misses and 30.8% serious AEs; higher safety culture (esp. in older nurses) linked to fewer negative emotions and lower reporting of incidents	Emotional/ professional burden present	88.9% interested in coping training
Johnson & Tucker (2025)	USA (Comprehensive Cancer Center Pharmacy)	Cross-sectional survey; n=94 pharmacists	Pharmacists: 53%; Technicians: 15%	Triggers not specified	60% recovered <1 month; 10% never recovered; notable psychological distress	Peer support, quiet space, time off, Employee Assistance Programme
Klemm et al. (2025)	Austria (national midwives)	National cross-sectional SeViD-A3; n=487 midwives	94.3% reported second victim symptoms	Severity linked to patient harm and neuroticism	Self-doubt (52.5%), guilt (47%), flashbacks (41.8%)	Peer support preferred; counselling less helpful

Marung et al. (2025)	Germany (EMTs)	Cross-sectional; 699 invited, 528 completed SeViD-VIII	65.3% overall; 53.3% in past 12 months	Patient death; aggression; more experience and transport-intensive roles increase risk; male gender, conscientiousness, and extraversion are protective	Major emotional/ psychological toll	Reference for legal help and counselling; peer support suggested
Neves et al. (2025)	International (multi-country)	Scoping review; 27 empirical studies	Not reported	Gendered influence: women were more judged, higher anxiety	Females showed higher anxiety	Women sought help more; faced gender-based judgment
Neyens et al. (2025)	Belgium (Flanders general practice)	Cross-sectional; n = 471 GPs who had experienced a PSI	87.2% lifetime; 55.1% last year	Patient harm/death; low disclosure from legal fears and limited support	Hypervigilance (88.2%), guilt (82.4%), stress (79.4%), shame (75%)	Desire for clarity (64.4%); value in open disclosure

Shahbazzadeh et al. (2025)	Iran (national nurses)	Cross-sectional; SVEST; n = 330 nurses	80% lifetime; 82.4% in last 12 months	Younger and less experienced nurses were more susceptible to SVP	Depression, anxiety, remorse, insomnia, loss of confidence	Not explicitly detailed
Zimonjic et al. (2025)	Serbia (community pharmacy)	Modified Delphi; 20 expert pharmacists	Qualitative (not reported)	Dispensing errors; inadequate supervision, crowding, storage issues	Patient-focused anxiety; self-blame/ resilience tension; career concerns	Consensus on training, support systems, non-punitive reporting for pharmacists

2.4 Prevalence of the Second Victim Phenomenon

The prevalence of the SVP varies widely across studies, influenced by factors such as clinical setting, professional role, cultural and organisational context, and temporal or methodological differences. The Second Victims in Deutschland (SeViD) studies represent a major line of research into the second victim phenomenon across German-speaking healthcare contexts. *SeViD* stands for *"Second Victims in Deutschland"* and refers to a coordinated series of cross-sectional surveys and follow-up analyses conducted since 2021. These studies systematically examined the prevalence, symptoms, coping, and support needs of second victims across multiple healthcare professions and countries, and several incorporated personality trait measures (e.g., BFI-10) or mediational models. Collectively, the SeViD series provides a robust framework for understanding both commonalities and profession-specific differences in second victim experiences.

An overview of the SeViD studies, their populations, domains, and principal findings is presented in Table 2.6.

Table 2.6

Overview of SeViD Studies and Key Findings

TOOL	PUBLICATION	COUNTRY	POPULATION	DOMAINS	RESULTS
SeViD I	Strametz et al. (2021)	Germany	Young physicians in training in general medicine or subspecialty	3 domains -general experience -symptoms -support strategies	59% experienced SV phenomenon
SeViD II +BFI-10	Strametz et al. (2021)	Germany	Among nurses nationwide	3 domains -general experience -symptoms -support strategies	60% experienced SV phenomenon -personality traits included
SeViD III + BFI-10	Marung et al. (2023)	Germany	Emergency medical physicians	3 domains -general experience -symptoms -support strategies	53.1% experienced SV symptoms Personality traits mediational model
SeViD A1 + BFI-10	Potura et al.(2023a)	Austria	Austrian paediatricians	3 domains -general experience -symptoms -support strategies	89% self-identified as SV Personality traits Results on a mediational model
SeViD A2 + BFI-10	Potura et al.(2023a)	Austria	Austrian nurses	3 domains -general experience -symptoms -support strategies	81.6% experienced SV phenomenon. Symptom load was higher in females and increased agreeableness

SeViD IX + BFI-10	Bushuven et al.(2024)	Germany	German general practitioners and healthcare assistants	-general experience (G-SVESTR) -moral injury -symptom load	-Tools valid; minor issues - 92% symptomatic -Neuroticism key; age effect indirect -Moral injury increased symptoms -Peer support only helped at low distress.
SeViD A3 + BFI-10	Klemm et al. (2025)	Austria	Austrian midwives	3 domains -general experience -symptoms -support strategies	Prevalence 94.3% Top symptoms: Self-doubt, flashbacks, guilt.Key events near misses and patient harm. Peer support favoured, counselling rated lower by SVs.
SeViD VIII + BFI-10	Marung et al. (2025)	Germany	Emergency Medical techniciancs (EMT)	3 domains -general experience -symptoms -support strategies	Prevalence 65.3%. Longer experience increased SVP risk. Male gender, conscientious-ness were protective. Higher extraversion reduced symptom burden. Preferred support legal advice and counselling

Variation in reported prevalence of the second victim phenomenon is shaped by multiple interacting factors, which are summarised in Table 2.7.

Table 2.7

Summary of Second Victim Phenomenon Prevalence Factor

Factor	Explanation	Key References
Clinical setting and acuity of care	High-acuity settings show higher prevalence due to frequent critical events and rapid decisions.	(Kappes et al., 2023); (Kuruvilla et al., 2024); (Marung et al., 2023) & (Marung et al., 2025); (Ganahl et al., 2022; Jain et al., 2022).
Professional role	Some roles show higher prevalence due to greater patient contact and responsibility.	(Potura et al., 2023); (Potura et al., 2024).
Cultural and organisational context	Underreporting linked to stigma, legal concerns, and limited support can lower prevalence.	(Scarpis et al., 2023); (Sedile et al., 2024); (Neyens et al., 2025).
Temporal and methodological influences	Recent higher prevalence often reflects increased awareness, cultural change, and more sensitive tools rather than a real incidence rise.	(Seys et al., 2013); (Lin et al., 2023); (Klemm et al., 2025).

2.4.1. Clinical setting and acuity of care

High-acuity clinical environments such as intensive care, emergency, and surgical settings were consistently associated with higher prevalence of the SVP. Studies reported elevated distress among ICU nurses in Chile (67%) and India (68%), with common symptoms including guilt, anxiety, and reduced self-confidence (Kappes et al., 2023; Kuruvilla et al., 2024). Comparable findings were observed in Europe, where German emergency medical personnel reported prevalence rates ranging from 53.1% to 65.3% (Marung et al., 2023, 2025). Surgical teams similarly emerged as highly affected groups (Ganahl et al., 2022; Jain et al., 2022).

2.4.2 Professional role

Certain professions demonstrate notably high prevalence rates, reflecting the intensity of patient contact, responsibility for clinical outcomes, and exposure to critical incidents. As shown in Table 2.5 Austrian paediatricians reported a prevalence of 89%, often in relation to patient death or suicide, with effects moderated by personality traits such as neuroticism and extraversion (Potura et al., 2023). Austrian nurses also reported high rates (81%), with triggers such as patient or relative aggression, and greater impact observed among women and those scoring higher in agreeableness (Potura et al., 2024).

2.4.3. Cultural and organisational context

Cultural and organisational factors influenced reporting of the SVP), with stigma, legal concerns, and limited institutional support contributing to underreporting. In Italy, prevalence ranged from 42% among healthcare professionals in Friuli Venezia Giulia to 40% among physicians and nurses in Puglia, with male ICU physicians at higher risk (Scarpis et al., 2023; Sedile et al., 2024). In Belgium, while 87.2% of general practitioners reported involvement in patient safety incidents, only 51.7% engaged in open disclosure, highlighting how cultural and legal barriers restricted transparency (Neyens et al., 2025).

2.4.4. Temporal and methodological influences

Reported prevalence of the SVP has varied due to methodological and temporal factors. Earlier reviews estimated rates of 10–43% (Seys et al., 2013), but tools such as the SVEST, which identify second victim status through symptoms, tended to inflate estimates compared with more recent SeViD studies using self-identification (Burlison et al., 2017;

Strametz et al., 2021a; Marung et al., 2023). Recent investigations documented markedly higher prevalence, including 89% among Austrian paediatricians and 94.3% among Austrian midwives (Potura et al., 2023; Klemm et al., 2025). Temporal shifts, such as awareness campaigns, cultural change, and organisational support, also contributed to greater recognition and reporting of second victim experiences (Guerra-Paiva et al., 2024; Naya et al., 2023; Scott et al., 2009).

2.5 Demographic and Workplace Factors Influencing the Second Victim Phenomenon

A range of inherent (demographic) factors**,** including gender, age, and clinical experience, have been linked to the likelihood and severity of SVP experiences (Bushuven et al., 2024; Marung et al., 2023; Potura et al., 2023; Shahbazzadeh et al., 2025; Strametz et al., 2021, 2021a). External (workplace-related) factors**,** such as clinical setting and organisational culture, have shown similar associations (Catalán et al., 2024; Kappes et al., 2023; Marung et al., 2023; Naya et al., 2023; Strametz et al., 2021a). These are summarised separately in Tables 2.7 and 2.8 and discussed in the subsections that follow, reflecting the most frequently examined variables in international literature.

2.5.1 Gender Differences in Second Victim Experiences

As shown in Table 2.8, empirical studies have consistently shown gender-related differences in second victim experiences, with women often reporting greater vulnerability. Female healthcare professionals were found to have higher odds of experiencing the SVP and more severe symptoms in Germany, as well as heightened guilt, anxiety, and symptom load in Austria (Potura et al., 2023; Strametz et al., 2021). Similar findings were observed among emergency medical technicians, where male gender was

associated with lower risk (Marung et al., 2025). In contrast, an Italian study reported higher prevalence among men, who had more than twice the odds of SVP compared to women (Sedile et al., 2024).

Table 2.8

Summary of Demographic Factors Influencing the Second Victim Phenomenon

Factor	Key Findings	Key References
Gender	Female healthcare professionals were more likely to report SVP symptoms and severe distress.	Strametz et al., 2021; Potura et al., 2023; Marung et al., 2025
	Male healthcare professionals had more than twice the odds of reporting SVP compared to females (OR = 2.069).	Sedile et al., 2024
	No significant gender differences were found among German nurses and EMS physicians.	Strametz et al., 2021a; Marung et al., 2023
	Women often experienced more guilt and anxiety, were more likely to seek help, and reported stronger self-judgment, with effects shaped by context.	Neves et al., 2025
Age & Clinical Experience	Younger and less experienced professionals reported higher symptom loads and distress.	Potura et al., 2023; Marung et al., 2022; Shahbazzadeh et al., 2025
	Older, more experienced nurses reported longer recovery times following repeated exposure to adverse events.	Strametz et al., 2021a
	Older age was associated with lower neuroticism, which in turn was linked to fewer reported symptoms.	Bushuven et al., 2024
	Neuroticism was strongly associated with both SVP experiences and moral injury.	Bushuven et al., 2024

Gender-related effects on second victim experiences were not consistent across studies. While some evidence suggested women reported greater anxiety, guilt, and self-judgment and were more likely to seek help (Neves et al., 2025), research on German nurses and emergency medical physicians found no significant gender differences in prevalence or symptom severity (Marung et al., 2023; Strametz et al., 2021a). Overall, gender influenced vulnerability to the SVP, but its impact appeared to be shaped by factors such as clinical role, workplace culture, and broader organisational context.

2.5.2 Age and clinical experience in the Second Victim Experience and Severity

Age and clinical experience influenced second victim vulnerability in complex ways. Younger and less experienced professionals often reported greater distress and symptom load, as shown among Austrian paediatricians, EMS physicians, and Iranian nurses (Marung et al., 2022; Potura et al., 2023; Shahbazzadeh et al., 2025). Conversely, some studies indicated that older, more experienced clinicians faced heightened vulnerability due to cumulative exposure and longer recovery periods (Strametz et al., 2021a). Personality traits further shaped outcomes, with neuroticism and agreeableness consistently predicting symptom severity (Marung et al., 2023; Potura et al., 2023; Strametz et al., 2021a). Older age was associated with lower neuroticism, which in turn was linked to fewer symptoms, while neuroticism also strongly correlated with moral injury (Bushuven et al., 2024).

2.5.3 Workplace setting and the Second Victim phenomenon

The workplace setting has consistently emerged as a critical factor associated with increased risk of the SVP. Results are summarised in Table 2.9.

Table 2.9

Summary of Workplace Factors Influencing the Second Victim Phenomenon

Factor	Key Findings	Key References
Workplace Setting	High-acuity settings like the ICU, ED, and paediatrics linked to higher SVP rates.	Kappes et al., 2023; Marung et al., 2023; Naya et al., 2023
	Students in high-stress placements faced greater SVP risk, especially with poor supervision.	Catalán et al., 2024
	Lack of just culture and debriefings in the ICU is linked to prolonged recovery and distress.	Strametz et al., 2021a; Naya et al., 2023

High-acuity environments such as emergency departments, ICUs, and paediatrics were consistently linked to elevated second victim prevalence, with studies reporting rates of 53–67% among clinicians and a meta-analysis estimating 58% of ICU staff affected, often with prolonged recovery (Kappes et al., 2023; Marung et al., 2023; Naya et al., 2023). As this theme was already discussed in Section 2.4.1, it is briefly noted here in relation to demographic influences.

Among students and early-career trainees, exposure to high-stress placements and insufficient supervision further heightened SVP risk. Catalán et al. (2024) found that healthcare students placed in high-pressure clinical environments such as surgical wards or ICUs experienced elevated risk of second victim phenomena, a situation that was exacerbated by limited supervision during adverse events.

Culture was also found to act as a risk factor: nurses working in settings lacking a just culture in which adverse events are met with blame rather than learning were significantly more prone to prolonged distress, even when formal support programmes existed (Strametz et al., 2021a). Naya et al. (2023) similarly found that, in ICUs, delayed recovery

was often linked to the absence of timely debriefings and insufficient institutional psychological safety.

2.6 Experiences and Symptom Load

In the context of the SVP, "experiences" refers to healthcare professionals' involvement in or exposure to adverse clinical events. Medical errors, near misses, or unexpected patient deterioration are key events that can trigger a personal and professional crisis (Wu, 2000; Scott et al., 2009). The resulting symptom load has been described across four main domains: emotional guilt, cognitive, physical and behavioural (Burlison et al., 2017; Seys et al., 2013; Edrees et al., 2011). While these domains frequently overlap, distinguishing them allows for a more detailed understanding of the ways SVP affects healthcare professionals and the targeted interventions they may require. A summary of these experiences and symptom load is presented in Table 2.10.

Table 2.10

Second Victim Phenomenon (SVP) Symptom Load Summary

Factor	Examples	References
Emotional Symptoms	Guilt, shame, fear, anxiety, emotional exhaustion, self-blame, loss of confidence, and fear of exclusion or job loss.	Strametz et al. (2021); Seys et al. (2013); Burlison et al. (2018); Kappes et al. (2023); Marung et al. (2024); Klemm et al. (2025)
Cognitive and Psychological Symptoms	Intrusive thoughts, flashbacks, rumination, impaired concentration, difficulty making decisions, delayed or no recovery.	Potura et al. (2024); Klemm et al. (2025); Mira et al. (2024); Potura et al. (2023)
Somatic and Physical Symptoms	Fatigue, chronic headaches, gastrointestinal discomfort, insomnia, muscle tension, physical exhaustion, back pain.	Potura et al. (2024); Potura et al. (2023); Marung et al. (2023); Bühlmann et al. (2022); Scott et al. (2009)

Behavioural Symptoms	Social withdrawal, avoidance of duties, substance use (alcohol/sedatives), burnout, absenteeism, risk-taking or hypervigilance.	Potura et al. (2023, 2024); Burlison et al. (2018, 2021); Liukka et al. (2020);

2.6.1 Emotional Symptoms

Emotional symptoms are among the most immediate and impactful consequences of second victim experiences, typically manifesting as guilt, shame, fear, anxiety, embarrassment, or emotional exhaustion (Burlison et al., 2018; Kappes et al., 2023; Seys et al., 2013; Strametz et al., 2021). These reactions may arise immediately or develop over time, shaped by the incident and individual coping capacity. A review of 41 studies highlighted recurring patterns of guilt, shame, and fear of professional or legal repercussions, often accompanied by sadness and anxiety (Seys et al., 2013). Strametz et al. (2021) similarly found that nearly one-third of second victims feared social exclusion and over a quarter worried about job security. Quantitative studies further confirmed guilt as highly prevalent, with 62% of U.S. physicians reporting it after medical errors, often with anger, anxiety, and fatigue (Burlison et al., 2018). Embarrassment was most common among two-thirds of Chilean ICU nurses experiencing distress (Kappes et al., 2023). Within the SeViD series (see Table 2.9), Austrian nurses, particularly women and those high in agreeableness, often reported anxiety linked to workplace aggression (Potura et al., 2024), while Austrian midwives described guilt, flashbacks, and self-doubt following near misses or patient harm, with 94.3% identifying as second victims (Klemm et al., 2025).

2.6.2 Cognitive and Psychological Symptoms

Cognitive and psychological symptoms of second victim experiences commonly include intrusive thoughts, flashbacks, impaired concentration, and difficulty making clinical decisions, which impair both well-being and patient safety (Klemm et al., 2025; Mira et al., 2024; Potura et al., 2024). In the SeViD-A2 study, 21.75% reported concentration difficulties, 34.29% re-experienced the event in similar situations, and 21.45% struggled to disengage during personal time (Potura et al., 2024). Comparable patterns were observed in other SeViD investigations, highlighting the persistent imprint of such trauma (Klemm et al., 2025; Mira et al., 2024). Recovery was often prolonged, with 12% of younger physicians, 24% of nurses, and 14% of Austrian paediatricians reporting that they never fully recovered (Potura et al., 2023; Strametz et al., 2021). These findings underscored the enduring psychological toll of the SVP and the need for sustained institutional support.

2.6.3 Somatic and Physical Symptoms

Somatic symptoms of the SVP encompass fatigue, headaches, muscle tension, gastrointestinal discomfort, and sleep disturbances, often without clear medical cause, arising in response to emotionally distressing events (Bühlmann, Ewens, & Rashidi, 2022; Marung et al., 2023; Potura et al., 2023, 2024; Scott et al., 2009). Across SeViD studies, healthcare professionals frequently reported psychosomatic complaints such as chronic headaches, back pain, and gastrointestinal issues (Potura et al., 2023, 2024). Sleep disruption was especially prevalent, affecting 45% of Austrian nurses and 40% of Austrian paediatricians (Potura et al., 2023, 2024). SeViD-III highlighted similar patterns among EMS practitioners, who described headaches and backaches linked to the stress and unpredictability of emergency work (Marung et al., 2023). Qualitative research further

confirmed that professionals not only endured emotional strain but also experienced physical exhaustion, with fatigue, sleep problems, and bodily tension reflecting the internalisation of distress (Bühlmann, Ewens, & Rashidi, 2022). Collectively, these findings underscore that the SVP extends beyond emotional and cognitive domains, with physical symptoms forming a substantial part of the burden and impairing recovery, well-being, and safe care delivery (Scott et al., 2009).

2.6.4 Behavioural Symptoms

Behavioural symptoms of the SVP involve observable changes in conduct and relationships, including withdrawal, avoidance, substance use, and altered risk-taking, often reflecting maladaptive coping with significant professional implications (Burlison et al., 2018; Liukka et al., 2020; Potura et al., 2023, 2024). In SeViD-A1, 19.5% of Austrian paediatricians reported distancing themselves from colleagues, weakening communication and teamwork, while listlessness and low mood further impaired collaboration (Potura et al., 2023). Substance use was also reported, with 3.93% of Austrian nurses and 14.3% of paediatricians admitting to alcohol, sedatives, or similar substances, findings echoed in U.S. research where unsupported staff turned to alcohol or medication (Burlison et al., 2018; Potura et al., 2023, 2024). Avoidant behaviours, such as withdrawing from procedures, were linked to burnout and intentions to leave the profession (Liukka et al., 2020). Hypervigilance was common, reported by 24.1% of nurses in SeViD-A2 and 46.3% of paediatricians in SeViD-A1, though few admitted to risk-taking. Broader workplace impacts included absenteeism and stronger turnover intentions associated with distress (Burlison et al., 2021). Behavioural and cognitive symptoms often overlapped, as seen in SeViD-A1 where withdrawal coincided with impaired concentration (Potura et al., 2023).

Altogether, these patterns illustrate how second victim experiences can erode individual well-being, teamwork, and the long-term stability of the healthcare workforce.

2.7 Personality Traits as Contributing Factors to the Second Victim Phenomenon

In applied research, personality is most often measured through self-report questionnaires, with the Big Five Inventory (BFI) being one of the most widely used. Tools, such as the Personality Inventory for DSM-5 (PID-5) which was developed for the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (Krueger et al., 2012) assess maladaptive or pathological traits typically used in clinical diagnosis. Within studies of the SVP, personality has been examined using the Big Five model, exploring how variations in these traits relate to occupational stress, coping mechanisms, and emotional resilience.

The BFI-10, a short form of the 44-item BFI, is frequently adopted in large-scale health studies because it reduces respondent burden, improves completion rates, and still provides acceptable reliability for survey-based research (Rammstedt & John, 2007). Each trait is measured with two items: one positively and one negatively keyed, while the full BFI-44 uses 8–10 items per trait, offering greater depth and internal consistency (Rammstedt & John, 2007; John & Srivastava, 1999). The BFI-10 has therefore been particularly suitable for large-scale studies such as the SeViD series, where personality is examined alongside broader measures of second victimisation.

Findings from the SeViD series have shown that the Big Five traits: neuroticism, conscientiousness, agreeableness, extraversion, and openness play a significant role in shaping second victim experiences. Neuroticism has consistently been linked to higher vulnerability, greater symptom load, and slower recovery, while agreeableness has been

associated with resilience and faster adjustment (Strametz et al., 2021a; Marung et al., 2023; Potura et al., 2023, 2024; Bushuven et al., 2024). These results underscore the importance of personality as a contributing factor to both the likelihood of becoming a second victim and the severity of its psychological and behavioural impact. A summary of these associations is provided in Table 2.11

Table 2.11

Integrated Summary of Personality Traits and Second Victim Outcomes in SeViD Studies

Personality Trait	Key Findings	Professions / Study Contexts	References
Neuroticism	Consistently predicted second victim status and higher symptom severity across SeViD-II, III, A1, and IX. In SeViD-III and A1, it also mediated the effects of age and experience. Not significant in A2, possibly due to sample homogeneity and self-selection attrition among emotionally burdened professionals.	Nurses, EMS physicians, paediatricians, general practitioners	Strametz et al., 2021a. Marung et al., 2023. Potura et al., 2023; Bushuven et al., 2024
Conscientiousness	Showed no significant association with second victim status or symptom severity in any SeViD studies. No mediation effects were observed.	Nurses, EMS physicians, paediatricians, general practitioners	Strametz et al., 2021. Marung et al., 2023. Potura et al., 2023,2024. Bushuven et al., 2024
Extraversion	Mixed findings: demonstrated a protective effect (facilitated coping or reduced symptoms) in SeViD-II, A1, and A2, particularly among paediatricians. However, it was not significant in SeViD-III or IX. In some contexts, extraversion paradoxically increased SVP risk due to	Paediatricians, nurses, EMS physicians, general practitioners	Strametz et al., 2021. Marung et al., 2023. Potura et al., 2023, 2024; Bushuven et al., 2024

Personality Trait	Key Findings	Professions / Study Contexts	References
	increased social exposure or disclosure.		
Agreeableness	Associated with increased symptom burden in SeViD-II, A2, and IX, particularly among nurses and GPs. No significant effect was found in EMS physicians or paediatricians, suggesting a context-dependent role.	Nurses, general practitioners	Strametz et al., 2021a. Potura et al., 2023, 2024; Marung et al., 2023b; Bushuven et al., 2024
Openness	Predicted longer recovery times and higher symptom load in SeViD-II and A1, especially in nurses and paediatricians. Effects were not significant in A2, III, or IX, indicating variability across professional and organisational contexts.	Nurses, paediatricians	Strametz et al., 2021a. Marung et al., 2023. Potura et al., 2023, 2024; Bushuven et al., 2024; Mira et al., 2024

2.7.1 Neuroticism

Neuroticism consistently emerged as the most influential personality trait associated with second victim vulnerability and symptom severity, particularly among physicians, paediatricians, and general practitioners. Individuals with high neuroticism tend to experience greater emotional reactivity, which predisposes them to heightened guilt, anxiety, and self-blame following adverse clinical events (Strametz et al., 2021b; Marung et al., 2023; Potura et al., 2023; Bushaven et al., 2024).

In SeViD-II, neuroticism significantly increased the odds of SVP status among German nurses (OR = 2.77, 95% CI [1.59, 4.84], $p < 0.01$), although it did not significantly predict symptom severity (Strametz et al., 2021a). SeViD-III, conducted among EMS physicians,

extended these findings by demonstrating that neuroticism predicted both SVP risk (OR = 1.44, 95% CI [1.10, 1.88]) and higher symptom load ($\beta = 0.22$, $p < 0.001$). It also partially mediated the relationship between professional experience and symptom severity, with an indirect effect of –0.27 (95% CI [–0.54, –0.06]) (Marung et al., 2023).

A similar pattern was observed in SeViD-A1, where Austrian paediatricians high in neuroticism were more likely to become second victims and report greater psychological distress. Neuroticism fully mediated the protective effect of clinical experience on symptom burden (Potura et al., 2023). SeViD-IX, which included general practitioners and healthcare assistants, identified neuroticism as the strongest personality-based predictor of symptom load (B = 1.65, BCa 95% CI [0.78, 2.52]) and as a full mediator of the relationship between younger age and higher symptom severity (indirect effect = –0.03, 95% CI [–0.06, –0.005]) (Bushuven et al., 2024).

In contrast, in SeViD-A2, a study of Austrian nurses, reported no significant associations between neuroticism and either SVP status or symptom load and no mediation effects. The authors suggested that sample homogeneity or attrition of highly neurotic individuals from clinical nursing may have accounted for these null findings (Potura et al., 2024).

In summary, neuroticism emerged as a robust predictor of second victim experiences and emotional burden in most healthcare professions studied, though its relevance may vary by clinical context and demographic composition.

2.7.2 Conscientiousness

Across the SeViD series, conscientiousness generally showed no significant associations with either the risk of becoming a second victim or the severity of symptoms. This null pattern was reported among nurses, EMS physicians, paediatricians, general practitioners,

and healthcare assistants in SeViD-II, III, A1, A2, and IX, where the trait neither predicted outcomes nor acted as a mediator (Strametz et al., 2021b; Marung et al., 2023; Potura et al., 2023, 2024; Bushuven et al., 2024). The only exception was SeViD-VIII, which found that higher conscientiousness reduced the risk of experiencing the phenomenon among emergency medical technicians (Marung et al., 2025). Despite theoretical links to error sensitivity and moral responsibility, the SeViD authors concluded that conscientiousness shows little empirical relevance for second victim vulnerability in practice.

2.7.3 Extraversion

Extraversion displayed profession-specific effects, with some evidence of emotional buffering among paediatricians In SeViD-A1, extraversion increased SVP risk but was associated with lower symptom severity, suggesting a dual effect: socially outgoing individuals may be more exposed to emotionally intense situations but are better able to cope with them (Potura et al., 2023). Similarly, SeViD-II and SeViD-A2 suggested that extraversion might facilitate coping, potentially through enhanced social support-seeking, although these trends did not reach statistical significance (Strametz et al.,2021b; Potura et al.,2024). In contrast, SeViD-III and SeViD-IX reported no significant associations (Marung et al.,2023; Bushuven et al., 2024). For EMS physicians, extraversion was unrelated to either SVP status (OR = 0.76, p = 0.32) or symptom severity (B = –0.24, p = 0.35) (Marung et al., 2023), and the same was true for general practitioners and assistants in SeViD-IX (Bushuven et al., 2024).

2.7.4 Agreeableness

Agreeableness demonstrated variable effects depending on the profession and the setting. In SeViD-A2, higher agreeableness significantly predicted greater symptom severity

among Austrian nurses, particularly following traumatic events like patient aggression or unexpected death (Potura et al., 2024). This pattern was echoed in SeViD-IX, where agreeableness independently predicted higher symptom burden (B = 0.95), likely reflecting increased emotional investment, empathy, or moral distress (Bushuven et al., 2024).

SeViD-II (Strametz et al.,2021b) showed a trend toward similar findings, though statistical significance was not reached. In contrast, SeViD-III and SeViD-A1 found no evidence that agreeableness influenced SVP status or symptom load, highlighting that the trait's emotional implications may be more prominent in relational or patient-facing professions (Marung et al., 2023; Potura et al.,2023).

2.7.5 Openness

Openness was inconsistently linked to second victim outcomes across the SeViD series. In SeViD-II, higher openness was not associated with SVP risk but significantly predicted longer recovery times (OR = 2.50, 95% CI [1.13, 5.50], p = 0.02), suggesting deeper cognitive-emotional processing may prolong distress (Strametz et al., 2021b). A similar pattern was observed in SeViD-A1, where openness predicted greater symptom load among Austrian paediatricians (Potura et al., 2023).

However, no significant effects were observed in SeViD-III, SeViD-A2, or SeViD-IX (Marung et al., 2023; Potura et al., 2024; Bushuven et al., 2024). Among EMS physicians and GPs, openness neither predicted SVP status nor symptom load. Mediation effects were also absent across all studies. Some authors proposed that organisational culture may influence whether openness manifests as vulnerability or resilience, depending on whether emotional expression is encouraged or discouraged (Mira et al., 2024).

Across the SeViD studies, neuroticism was the most consistent predictor of severe SVP-related distress, with agreeableness and openness also linked to greater emotional burden and longer recovery. Extraversion showed variable associations depending on context, while conscientiousness was generally unrelated to SVP risk or symptom severity (Strametz et al., 2021b; Marung et al., 2023; Potura et al., 2023,2024; Bushuven et al., 2024).

2.8 Coping and Recovery from Second Victim Experiences

Recovery from second victim experiences is shaped by both personal resilience and the responsiveness of institutional systems. Across the SeViD series, second victims commonly reported intense emotional reactions: guilt, anxiety, helplessness, and diminished self-confidence, often compounded by the absence of formal support (Strametz et al., 2021a; Potura et al., 2023; Marung et al., 2023; Klemm et al., 2025).A synthesis of the key coping strategies and recovery-related challenges identified across the literature is presented in Table 2.12, which summarises recurring themes, including the reliance on informal peer support, barriers to accessing structured assistance, and factors that facilitate or hinder psychological recovery.

Table 2.12

Summary of Coping and Recovery Themes among Second Victims

Factor/Theme	Summary	References
Emotional Reactions	Second victims across SeViD studies reported intense emotional distress (guilt, anxiety, helplessness), often worsened by a lack of formal support.	Strametz et al., 2021; Potura et al., 2023; Marung et al., 2023; Klemm et al., 2025
Support Perceptions (SeViD-A1 & A2)	Second victims generally rated support strategies more	Potura et al., 2023, 2024

	helpful than non-victims, except for legal advice and counselling, which non-victims rated higher, possibly due to idealised expectations.	
Support Format and Patterns	Despite varied response formats (Likert vs. % ratings), second victims consistently valued timely, structured, and emotionally sensitive support strategies.	Klemm et al., 2024; Marung et al., 2023
Professional Context Differences	Support preferences varied by profession: EMS physicians viewed time off as less helpful, while midwives strongly valued legal support and recovery time.	Marung et al., 2023; Klemm et al., 2025
International Emotional Impact	Internationally, nurses and ICU staff reported high distress levels, especially when institutional support was absent; psychological safety and social support aided recovery.	Ganahl et al., 2022; Choi et al., 2022; Huang et al., 2024
Value of Peer Support	Peer support, especially when confidential and peer-delivered, was repeatedly highlighted as a critical and trusted recovery resource.	Strametz et al., 2021; Klemm et al., 2025; El Hechi et al., 2020; Connors, 2021; Gosselin et al., 2025
Organisational Culture and Leadership	Support effectiveness was influenced by leadership visibility and safety culture. Inconsistent implementation and persistent stigma remained obstacles.	Kappes et al., 2023; Istrate et al., 2025; Edrees et al., 2021; Dukhanin, 2018
Promising Interventions	Mindfulness, resilience training, and structured debriefing are emerging as valuable but require integration into routine practice.	Chung et al., 2018; Gorlin et al., 2021
Institutional Responsibility	Coping cannot rely solely on individuals: system-level commitment to structured and empathetic support is essential for sustainable recovery.	Seys et al., 2023; Mira et al., 2024

While SeViD-A1 and A2 generally showed that second victims rated support strategies as more helpful than their non-affected peers, some exceptions stood out. Non-victims in both studies, for example, perceived psychological counselling and legal advice as more helpful, possibly due to idealised expectations. Second victims, by contrast, may have encountered barriers that tempered their views, such as limited access, delayed response, or unmet expectations (Potura et al., 2023,2024).

Perceptions around discussing emotional or ethical concerns (e.g., debriefing sessions, confidential conversations with supervisors) and participating in prevention processes (e.g., contributing to incident analysis, safety protocol revisions) also varied. In SeViD-A1, which examined Austrian paediatricians, non-victims rated these forms of support more favourably. Yet, in SeViD-A2, the Austrian nurses identified as second victims found them significantly more helpful, suggesting that those who had lived through an adverse event may better appreciate the value of reflective dialogue and system involvement (Potura et al., 2024). Although the SeViD studies used different response formats (descending Likert scale in A1 and A2; percentage ratings in SeViD-III), a shared pattern emerged: second victims consistently valued support mechanisms that were timely, structured, and emotionally responsive.

Professional context also shaped support preferences. Emergency physicians in SeViD-III viewed “time off to recover” as less helpful, likely due to the logistical constraints of their roles (Marung et al., 2023). In contrast, Austrian midwives in SeViD-A3 strongly endorsed legal consultation, peer support, and scheduled recovery time, highlighting how workplace realities influence perceived utility (Klemm et al., 2025).

International studies further echo these findings. Emotional distress, particularly among nurses and intensive care staff, was consistently reported across countries, especially when

institutional support was lacking (Ganahl et al., 2022; Choi et al., 2022). Research links emotional recovery to psychological safety and social support, with positive coping styles contributing to post-traumatic growth, while negative perceptions and silence often worsen distress (Huang et al., 2024).

Peer support consistently stood out as a key pillar of recovery. In the SeViD studies and beyond, support was most valued when delivered promptly, confidentially, and by trained colleagues. These programmes not only reduced emotional burden but also helped clinicians feel understood and supported (Strametz et al.,2021a; Klemm et al., 2025; El Hechi et al., 2020; Connors, 2021; Gosselin et al., 2025).

At a broader level, recovery was closely tied to institutional culture and leadership. While SeViD respondents valued legal guidance, procedural transparency, and structured follow-up, international data revealed inconsistent implementation. For example, nurses in Chile and Romania frequently reported distress but rarely had access to dedicated support systems (Kappes et al., 2023; Istrate et al., 2025). Even in systems committed to safety, stigma, time pressure, and poor programme visibility remained major barriers (Edrees et al., 2021; Dukhanin, 2018).

Emerging interventions such as mindfulness, resilience training, and structured debriefing show promise but must be better embedded into healthcare routines (Chung et al., 2018). Ultimately, coping and recovery cannot fall solely on the shoulders of individual healthcare professionals. When organisations provide structured, empathetic, and timely support, recovery becomes not just possible but sustainable. Without such systems in place, the risks of burnout, attrition, and long-term psychological harm remain high. (Seys et al.2023, Mira et al., 2024).

2.9 Impact of the Second Victim Phenomenon Across Professional Groups

Studies showed that the impact of the SVP varies widely across healthcare professions, influenced by role-specific risks, workplace pressures, and access to support. This section explores how medical practitioners, nurses, pharmacists, and other healthcare professionals, and students experience and respond to SVP, drawing on recent international evidence. students. A summary of the impact of the SVP across professional groups is presented in Table 2.13.

Table 2.13

Summary Table of Key Differences Across Professional Groups.

Profession	SVP Triggers	Symptoms	Support Access	Key Barriers
Medical Practitioners	Patient death, harm, litigation	Guilt, insomnia, anxiety	Limited formal, high peer reliance	Fear of blame, high pressure, stigma
Nurses	Aggression, errors, and moral distress	Shame, guilt, long-term distress	Low formal use, peer-supported	Blame culture, low psychological safety
Pharmacists	Dispensing/medication errors	Denial, fear, emotional fatigue	Very limited, isolated settings	Lack of peer access, underreporting
Students / Mixed	Errors, supervision pressure, and inexperience	Self-blame, stress, hypervigilance	Informal peer support only	Hierarchy, inexperience, fear of disclosure

2.9.1 Medical Practitioners

Medical practitioners are often central decision-makers in high-stakes environments, making them highly exposed to SVP triggers such as unexpected deaths, patient harm, and fears of litigation (Strametz et al., 2021; Marung et al., 2023). Across specialities, common emotional symptoms included guilt, anxiety, and self-doubt, often accompanied by sleep disturbances such as insomnia, as seen in SeViD-I among young German internal medicine physicians and in SeViD-III among EMS physicians. In paediatrics, SeViD-A1 found that distress was frequently intensified by child fatalities and parental aggression, with 89% meeting SVP criteria (Potura et al., 2024). Recovery patterns varied, with prolonged recovery linked to high neuroticism in EMS physicians, while surgical and emergency practitioners reported sustained distress but limited access to formal psychological support (Khansa & Pearson, 2022; Lin et al., 2023).

Peer support emerged as the most common coping strategy (Strametz et al., 2021a; Marung et al., 2023; Potura et al., 2024; Khansa & Pearson, 2022; Lin et al., 2023), but structural solutions were often missing, especially in high-pressure, blame-sensitive environments.

2.9.2 Nurses

Nurses have consistently emerged as one of the most affected groups by the SVP, given their constant frontline presence, emotional labour, and patient advocacy role. Prevalence ranged from 60% in the SeViD-II study to 81.6% in SeViD-A2, with common triggers including clinical errors, adverse events, and aggression from patients or relatives (Strametz et al., 2021b; Potura et al., 2024). Emotional and psychological responses reported across studies included guilt, shame, anxiety, and, in some cases, prolonged psychological strain persisting for over a year (Potura et al., 2024; Ganahl et al., 2022).

ICU nurses appeared particularly vulnerable, frequently experiencing sleep disruption and acute distress alongside sustained high symptom loads (Kappes et al., 2023; Ganahl et al., 2022). Coping strategies were often informal, with many nurses preferring peer conversations over institutional resources (Potura et al., 2024; Ganahl et al., 2022). Contributing factors such as younger age, lower professional experience, and personality traits especially higher neuroticism or agreeableness were linked to greater distress severity (Strametz et al., 2021b; Potura et al., 2024). Support interventions, including structured debriefing tools and psychological support sessions, demonstrated potential to reduce symptom persistence (Choi et al., 2024; Edrees et al., 2017). However, barriers to formal help-seeking, such as fear of blame, insufficient psychological safety, and organisational silence, remained persistent limitations (Cohen et al., 2023; Busch et al., 2021).

2.9.3 Pharmacists

Although pharmacists often have less direct patient contact, they remain susceptible to SVP, particularly after medication errors. Emotional reactions such as guilt, denial, and fear of recurrence were commonly reported, especially in paediatric or high-risk settings (Bredenkamp et al., 2024). A study from Serbia found that nearly half of pharmacists feared making future errors, and one in five considered leaving the profession altogether (Zimonjić et al., 2024). Unique challenges stemmed from the solitary nature of their roles, especially in hospital settings, limiting opportunities for immediate peer debriefing or emotional support. Despite this, pharmacists who accessed peer networks or participated in non-punitive reviews reported better outcomes (Johnson & Tucker, 2025). However, profession-specific data remains sparse, suggesting an urgent need for tailored SVP interventions for pharmacists.

2.9.4 Studies covering Mixed Healthcare Professional Groups and Students

Research involving mixed healthcare professional groups and students has identified high SVP prevalence alongside a wide spectrum of emotional and behavioural symptoms. In an ICU setting, 58% of staff reported experiencing SVP, with 20% requiring more than a year to recover (Naya et al., 2023). Commonly reported symptoms included hypervigilance, self-blame, disrupted sleep, and intrusive recollections of the event (Catalán et al., 2024; Treiber & Jones, 2018). Among students and residents, inexperience and limited professional autonomy were frequently associated with heightened distress, while rigid hierarchies and perceived scrutiny from senior staff contributed to feelings of isolation. Professionals in mixed roles, such as radiation therapists and midwives, similarly described enduring psychological strain, which was linked to organisational blame cultures and limited institutional awareness of SVP (McDaniel & Morris, 2020; Kobe et al., 2019).

Across these groups, peer support was consistently identified as a preferred coping mechanism (Galbis et al., 2024). Structured initiatives, such as the Danish Buddy Study, demonstrated that formal peer support models were associated with improved emotional recovery and reduced stigma following adverse events (Schrøder et al., 2022). However, several studies noted limited availability of such programmes, with institutional responses often described as lacking follow-up, training, or proactive engagement (Han et al.,2017; Jain et al., 2022; Kobe et al., 2019; McDaniel & Morris, 2020).

2.10 Recommendations from the Literature for Prevention, Mitigation, and Support Initiatives for Second Victims

Although patient safety has been a global priority for decades (World Health Organisation [WHO], 2019), structured responses to the SVP only began to take shape in the past 15 years. Early efforts centred on the development of institutional peer-support programmes. In the United States, the forYOU programme at the University of Missouri introduced a rapid-response, tiered support model for clinicians following adverse events (Scott et al., 2010). This was followed by the RISE (Resilience in Stressful Events) programme at Johns Hopkins, where trained peer responders provided psychological first aid and the model demonstrated scalability and sustainability across hospital services (Edrees et al., 2016). Shortly afterwards, the YOU Matter programme at Nationwide Children's Hospital adapted the forYOU structure, delivering more than 200 peer-led encounters and enhancing perceptions of organisational psychological safety (Merandi et al., 2017). Comparable initiatives emerged in Europe, including the MISE e-learning programme in Spain to increase awareness and coping skills among primary care professionals (Mira et al., 2017) and the Buddy Study in Denmark, which used peer seminars and self-selected "buddies" to strengthen collegial support (Schrøder et al., 2022).

Building on these initiatives, research turned towards systematic evaluation of education and training. A European review of 206 universities found that more than half lacked formal patient safety content, with SVP rarely included explicitly (Sánchez-García et al., 2023). The ERNST white paper (Buttigieg et al., 2024) reported similar curricular gaps, advocating integration of SVP into training at all levels, supported by interprofessional teaching, faculty readiness, and psychologically safe environments. A qualitative study across 10 European countries (Srulovici et al., 2025) confirmed that awareness of SVP

was relatively high, but actual curricular inclusion remained minimal. Barriers included curriculum overload, rigid accreditation, and prioritisation of technical over emotional competencies, while facilitators included strong leadership, interdisciplinary collaboration, and student involvement in curriculum design.

Recent programme evaluations have reinforced these conclusions. Guerra-Paiva et al. (2024) found that multimodal, feedback-driven training enhanced awareness and engagement, pointing to the benefits of embedding SVP concepts within educational and institutional frameworks.

Across the literature, effective strategies were characterised by timely, accessible support and systematic education, sustained by cultures of openness, collaboration, and psychological safety (Buttigieg et al., 2024; Sánchez-García et al., 2023; Srulovici et al., 2025). These findings resonate with the Five-Tier Support System described earlier (see Section 2.2.2), which begins with preventive culture-building (Tier 1) and extends through escalating peer, institutional, and specialist support (Tiers 2–5) (Seys et al., 2023; Mira et al., 2024). Collectively, the literature illustrates how institutional initiatives and educational reforms have converged into tiered support frameworks regarded as the most comprehensive approach to managing the second victim experience.

2.11 The Maltese Context and Contributions to Literature on the Second Victim Phenomenon

To date, no Maltese study has examined the SVP directly; however, several dissertations have explored related psychosocial, organisational, and patient safety issues that offer indirect insight into SVP-relevant factors. Table 2.14 summarises these publications.

Table 2.14

Workplace Stressors and Safety Culture among Maltese Healthcare Professionals

Author/s, Year, Country, Setting	Aim	Research Design, Sample	Main Findings
Borg (2006), Malta, University of Malta	To examine how personality traits, specifically negative affectivity and locus of control, contribute to occupational stress among Maltese nurses	Cross-sectional, 152 registered nurses	Personality traits like heightened emotional reactivity and limited perceived control were significant predictors of stress among Maltese nurses, operating through both direct and indirect pathways.
Scicluna Ward and Mangion (2023), Malta, Mater Dei Hospital	To evaluate nurses' knowledge and awareness of the local incident reporting system and to identify barriers affecting reporting behaviours	Cross-sectional design, 323 completed questionnaires (23% response rate)	Many nurses reported a lack of feedback and insufficient awareness of how the incident-reporting system works.
Spagnol (2024), Malta, Sir Anthony Mamo Oncology Centre	To explore perceptions of patient safety culture and to determine how different dimensions of safety culture relate to actual reporting of patient safety events	Cross-sectional study; medical practitioners,nurses, allied health professionals,healthcare assistants, management, and administrative staff. 129 survey respondents, 7 focus group participants	The study found systemic gaps in support and staffing, role-based differences in safety perceptions, a positive link between communication and reporting ($r = 0.384$), and a need for feedback and training.

The studies for Malta highlight factors that echo international SVP research: individual stress vulnerabilities linked to personality traits (Borg, 2006), reliance on informal peer support in high-pressure settings (Vella, 2008), and organisational barriers such as limited feedback, staffing shortages, and weak communication structures (Scicluna Ward & Mangion, 2023; Spagnol, 2024). These themes correspond to the theoretical frameworks outlined earlier, including personality-linked risk (Section 2.2.3), the role of peer support (Section 2.2.2), and latent system flaws (Section 2.2.1). While SVP was not explicitly the

focus of this research, these studies provide a baseline and show the need for directly investigating the SVP within Malta's healthcare system.

2.12 Research hypotheses emanating from literature review

Hypotheses were derived from the literature review and were organised according to the main thematic domains explored in Chapter 2. These were presented in Table 2.15. Each hypothesis is aligned with the relevant literature section to ensure theoretical consistency and traceability. The domains were prevalence, demographic, symptomatology, personality, and support-related dimensions of the SVP.

Table 2.15

Collation of Study Hypotheses

Domain	Reference to Section in Chapter 2	Hypotheses
Prevalence	2.4; 2.4.2	H_0: SVP prevalence does not differ across healthcare professions. H_1: SVP prevalence differs across healthcare professions.
	2.4.1; 2.5.3	H_0: SVP prevalence does not differ by clinical acuity. H_1: Healthcare professionals in high-acuity settings report higher SVP prevalence than those in non-acute settings.
	2.4.3	H_0: Cultural and organisational factors do not influence reporting of SVP. H_1: Cultural and organisational factors influence reporting of SVP.
Demographic and Workplace Predictors	2.5.1	H_0: Female healthcare professionals do not have increased risk of becoming second victims. H_1: Female healthcare professionals have higher odds of becoming second victims.
	2.5; 2.5.2	H_0: Age and years of experience do not predict SVP status. H_1: Younger age and fewer years of experience predict higher odds of SVP status.
	2.5.3; 2.4.1; 2.6	H_0: Clinical acuity does not predict symptom load. H_1: High-acuity environments predict greater symptom load.
	2.5.2; 2.6; 2.8	H_0: Professional experience is not associated with recovery duration among second victims. H_1: Greater professional experience predicts longer recovery among second victims.
Symptom Load and Recovery	2.6; 2.9	H_0: Mean symptom load does not differ across professions. H_1: Mean symptom load differs across professions.

	2.6; 2.8; 2.9	H_0: Prolonged recovery (≥ 3 months) does not vary by profession. H_1: Prolonged recovery (≥ 3 months) varies by profession.
	2.6; 2.6.1–2.6.4	H_0: Emotional symptoms are not rated higher than cognitive, behavioural, or physical domains. H_1: Emotional symptoms are rated higher than cognitive, behavioural, or physical domains.
Personality Traits — SVP Status (Risk)	2.7; 2.7.1	H_0: Neuroticism is not associated with SVP status. H_1: Higher neuroticism predicts higher odds of becoming a second victim.
	2.7; 2.7.4	H_0: Agreeableness is not associated with SVP status. H_1: Higher agreeableness predicts higher odds of becoming a second victim.
	2.7; 2.7.3	H_0: Extraversion is not associated with SVP status. H_1: Higher extraversion predicts higher odds of becoming a second victim.
	2.7; 2.7.2	H_0: Conscientiousness is not associated with SVP status. H_1: Higher conscientiousness predicts lower odds of becoming a second victim.
	2.7; 2.7.5	H_0: Openness is not associated with SVP status. H_1: Openness is associated with SVP status (direction exploratory).
Personality Traits — Symptom Load & Mediation	2.7; 2.7.1	H_0: Neuroticism is not associated with symptom load. H_1: Neuroticism positively predicts symptom load.
	2.7; 2.7.4	H_0: Agreeableness is not associated with symptom load. H_1: Agreeableness positively predicts symptom load.
	2.7; 2.7.3	H_0: Extraversion is not associated with symptom load. H_1: Extraversion negatively predicts symptom load.
	2.7; 2.7.2	H_0: Conscientiousness is not associated with symptom load. H_1: Conscientiousness is associated with symptom load.
	2.7; 2.7.5	H_0: Openness is not associated with symptom load. H_1: Openness positively predicts symptom load.
	2.7; 2.7.1; 2.5.2	H_0: Neuroticism does not mediate the relationship between age and symptom load.

		H_1: Neuroticism mediates the relationship between younger age and higher symptom load.
Perceived Support	2.8; 2.10	H_0: Perceptions of the helpfulness of peer support and debriefing do not differ between second victims and non-victims. H_1: Second victims perceive peer support and debriefing as more helpful than non-victims.
	2.8; 2.10	H_0: Perceptions of the helpfulness of formal counselling and legal services do not differ between second victims and non-victims. H_1: Non-victims perceive formal counselling and legal services as more helpful than second victims.
Interprofessional Variation in Support	2.8; 2.9; 2.10	H_0: Perceived availability and helpfulness of support do not differ across professions after stratifying by second-victim status. H_1: Perceived availability and helpfulness of support differ across professions after stratifying by second-victim status.

Note. H_0 = null hypothesis; H_1 = alternative hypothesis. The null hypothesis (H_0) assumes no significant difference, relationship, or effect between variables, whereas the alternative hypothesis (H_1) proposes that a significant difference, relationship, or effect exists.

2.13 Strengths and Limitations of the Current Literature

This section outlines the main strengths and limitations observed in the reviewed literature, reflecting both the valuable insights it provides into the SVP and the areas where evidence remains limited or uneven.

2.13.1 Strengths of the Literature Review

Firstly, the inclusion of studies from high-income countries such as Germany, Austria, and the United States (Potura et al., 2024; Bushuven et al., 2024; Burlison et al., 2021), as well as recent research from Australia, Canada, Chile, China, Croatia, Denmark, Finland, Israel,

Iran, Italy, Romania, and South Korea, provides diverse perspectives on the SVP and allows for comparative insights across different healthcare systems. Secondly, the search strategy was intentionally inclusive of all healthcare professions, enabling the integration of findings beyond the frequently studied medical and nursing professions. Finally, the review incorporates studies using a variety of validated SVP measurement tools, offering a richer understanding of how the phenomenon has been operationalised in different contexts.

2.13.2 Limitations of the Literature Review

Firstly, despite the breadth of international evidence, much of the existing research remains hospital-centric and concentrated in high-income settings, with limited representation from community, outpatient, and primary care environments. Secondly, although this review adopted an inclusive search strategy, the available literature continues to underrepresent certain professional groups, particularly pharmacists, trainees, and allied healthcare professionals, limiting the specificity of findings to the entire healthcare workforce. Finally, variability in SVP measurement instruments such as the SVEST, MISS-HP, and SeViD-BFI-10 (Burlison et al., 2017; Strametz et al., 2021a) complicates direct comparison between studies and may contribute to inconsistencies in reported prevalence and outcomes.

2.14 Conclusion

The literature shows that the prevalence and severity of the Second Victim Phenomenon (SVP) vary widely between healthcare systems and professional groups, shaped by differences in how the phenomenon is measured, study designs, and the cultural and organisational contexts in which it is examined (Scott et al., 2009; Strametz et al., 2021a;

Mira et al., 2024). These variations highlight the need for Malta to generate its own evidence on how SVP is experienced across professions. The literature also gives information on the different tools available for the study of the SVP, and supports the choice of methods for this study. This will be presented in Chapter 3

Chapter 3 - Methodology

3.1 Introduction

In line with the research question presented in Chapter 1, this study was designed to measure the prevalence, impact, and management of the Second Victim Phenomenon (SVP) in Malta. This study was set in collaboration and with authorisation of the SeViD research team at the University of Weisbaden, and was called the SEVIMA (SEVI – MAlta) study. It followed the same methodological framework as the other SeViD studies (Table 2.6) and was conducted in the context of Malta. The use of this established methodology enabled direct comparison with the results of the other SeViD studies. The other SeViD studies were conducted mainly with medical practitioners and nurses. These two professions were included in this study. As the researcher works as a hospital pharmacist, pharmacists were also considered. This chapter presents the study's aims, objectives, followed by the research design, data collection procedures, participant recruitment strategies, ethical considerations, data analysis methods, and conclusion

3.2. Aims and Objectives

3.2.1 Research Aims

The aim of this study was to investigate the prevalence and impact of the Second SVP among medical practitioners, nurses, and pharmacists in Malta. Additionally, it sought to provide evidence to guide the development of effective support strategies for affected healthcare professionals.

3.2.2 Research Objectives

The objectives of this study were:

1. To determine the prevalence of the SVP among healthcare professionals in Malta.
2. To characterise the experiences and symptoms associated with the SVP in healthcare professionals in Malta.
3. To explore the impact of age, professional experience, and different work environments on the prevalence, severity, and coping mechanisms associated with SVP within each healthcare profession.
4. To investigate the influence of personality traits on the severity of second victim symptoms.
5. To assess the availability and perceived effectiveness of current support systems for second victims within each healthcare profession, according to second victim status.
6. To examine differences in perceived support systems across healthcare professions according to second victim status.

3.3 Operational definition of key concept

The SVP was operationalised in line with the ERNST definition previously outlined in Section 1.2.1 (Vanhaecht et al., 2022). In this study, SVP referred to "*any health care worker, directly or indirectly involved in an unanticipated adverse patient event, unintentional healthcare error, or patient injury, and who becomes victimised in the sense that they are also negatively impacted."* This operational definition directly informed the survey design, interpretation of findings, and was communicated to participants in the information letter.

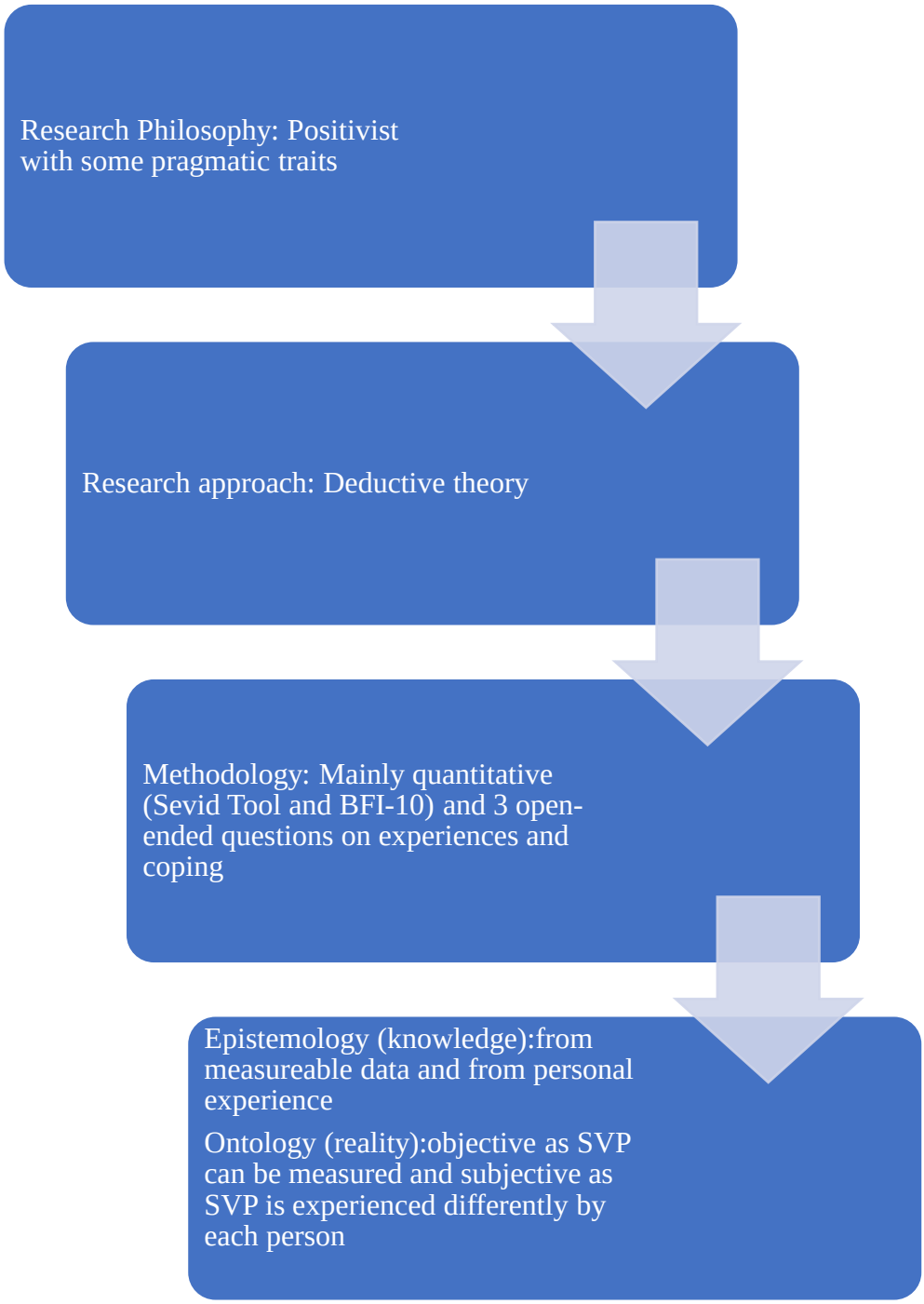
3.4 Research Philosophy

Guided by previous literature, this study adopted a primarily positivist philosophy, emphasising the objective observation and measurement of reality (Saunders et al., 2016). This perspective was appropriate for quantifying the prevalence of the SVP and examining its associations with demographic and professional characteristics among medical practitioners, nurses, and pharmacists in Malta. Consistent with this approach, a deductive framework was employed, applying established theoretical models of SVP to the Maltese healthcare context to test existing assumptions regarding prevalence, symptomatology, and support systems.

Moreover, elements of pragmatism were incorporated to address the complexity of SVP as a real-world concept. Pragmatism provides flexibility in research design and prioritises practical solutions over rigid adherence to a single paradigm (Creswell & Plano Clark, 2018). Figure 3.1 illustrates the adopted paradigm, showing its positivist base with pragmatic elements and how these philosophical assumptions informed methodological choices. From an epistemological perspective, the study recognised that knowledge can be both objective and subjective, as explained by Creswell and Plano Clark (2018). The quantitative component, using the SeViD tool, objectively measured SVP prevalence and symptom severity and enabled statistical comparison across groups. A minor qualitative component, based on 3 open-ended questions added at the end to the SeViD questionnaire, captured some subjective experiences and coping strategies. This study adopted a multi-perspective orientation consistent with constructivist interpretations as described by Guba & Lincoln (1994)

Figure 3.1

Representation of the research philosophy, methodological approach and data integration in this study



3.5 Research Design

A cross-sectional, design was adopted. Data were collected at a single point in time to provide a snapshot of SVP experiences across professional groups, an approach consistent with established health research methods for assessing prevalence and related factors (Bowling, 2014).

Quantitative data were gathered through a structured, self-administered questionnaire comprising 23 items measuring SVP prevalence, symptom intensity, and associated coping and support mechanisms. Some qualitative insights were obtained via three open-ended questions capturing participants' personal narratives and perceptions. The questionnaire employed adaptive questioning, similar to other SeViD studies, whereby participants who did not identify as second victims bypassed the symptom load section and were redirected to questions on support. Unlike other SeViD studies, participants in this research were given the option to skip any questions they preferred not to answer, with all responses remaining strictly confidential. They were also informed of their right to withdraw from the study at any stage without repercussions, ensuring a supportive and non-coercive research environment.

Online surveys offer a secure and accessible method of data collection, enhancing participation rates while safeguarding respondent anonymity (Polit & Beck, 2010). SurveyMonkey was selected as the distribution platform (SurveyMonkey, 2023), allowing participants to complete the questionnaire regardless of geographical location or workplace, thereby promoting inclusivity. Three profession-specific versions of the questionnaire were developed to enable targeted analysis, with the final versions provided in Appendix A. This methodological integration supported both

statistical analysis and contextual depth, aligning with best practice in investigating complex psychosocial phenomena described by Bowling, (2014).

3.6 Survey Instrument Selection and Adaptation

To ensure comprehensive and reliable data collection, the questionnaire was adapted from internationally recognised instruments, incorporating the Second Victim Dimensions (SeViD) tool and the Big Five Inventory-10 (BFI-10). Permission to use the SeViD tool was obtained from the research team at the University of Wiesbaden , and a copy of the approval is included in Appendix B. In contrast, the BFI-10, developed by Rammstedt and John (2007), is an open-access instrument, making it freely available for research purposes without requiring formal permission.

The SeViD instrument was chosen due to its validated reliability in assessing both SVP prevalence and symptom severity. It has been widely utilised in international research examining SVP across various healthcare systems, making it an appropriate tool for this study. The SeViD Tool also measures other domains, including the recovery patterns, and evaluates the emotional, cognitive, and behavioural reactions to adverse clinical events, as well as the effectiveness of support systems.

Table 3.1 shows the layout of the SeViD questionnaire and the BFI-10, including the domains covered by each. The complete list of items is provided in Appendix A.

Table 3.1

Layout of the Questionnaire (Second Victims in Deutschland [SeViD]; Big Five Inventory [BFI-10])

Sections	Domains	Description
Demographic data		Captures participants' background characteristics, including sociodemographic (e.g., nationality, gender, age) and professional variables (e.g., years of experience, area of practice
SeViD instrument	General Experience	Assesses involvement in patient safety incidents and frequency of occurrence.
	Symptoms	Measures emotional, psychological, and physical reactions following an incident (e.g., guilt, anxiety, sleep disturbance).
	Support Strategies	Evaluates perceived support received from colleagues, institution, and external resources, as well as desired support.
BFI-10 instrument	Extraversion	Items reflecting sociability and outgoingness (2 items, one reversed).
	Agreeableness	Items assessing trust and tendency to criticise others (2 items, one reversed).
	Conscientiousness	Items measuring diligence and tendency towards laziness (2 items, one reversed).
	Neuroticism	Items capturing stress handling and nervousness (2 items, one reversed).
	Openness to Experience	Items reflecting imagination and artistic interests (2 items, one reversed).

Note. The SeViD items were grouped into three domains (general experience, symptoms, support strategies). The BFI-10 assessed five personality traits, each with two items, following the English version by Rammstedt and John (2007). Full item wording is provided in Appendix A.

Alternative instruments were considered. The Second Victim Experience and Support Tool (SVEST), developed by Burlison et al. (2017), was primarily focused on assessing support systems rather than measuring SVP prevalence. Similarly, the Moral Injury Symptom and Support Scale for Health Professionals (MISS-HP) (Mantri et al., 2020) was primarily focused on moral distress, and this made it less suitable for capturing SVP symptomatology. Furthermore, incorporating both MISS-HP (Mantri et al., 2020) and SeViD (Strametz et al.,2021) alongside the Big Five Inventory-10 (BFI-10) (Rammstedt & John, 2007) was deemed impractical, as it would have significantly increased the questionnaire length, potentially leading to lower response rates.

To enhance the depth of analysis, the study not only assessed SVP prevalence and symptom severity but also explored how personality traits influence individuals' experiences with SVP. The BFI-10 was included in the questionnaire to assess the five major personality dimensions: openness, conscientiousness, extraversion, agreeableness, and neuroticism. By incorporating this psychological measure, the study aimed to explore whether certain personality traits influence susceptibility to SVP or affect coping mechanisms among healthcare professionals.

Given that English and Maltese are both official languages in Malta, with English being widely used in medical and academic settings, the questionnaire was administered exclusively in English. Since all healthcare professionals in Malta are proficient in English, a Maltese version of the questionnaire was deemed unnecessary. The SeViD tool, originally developed for German-speaking countries, had already undergone translation and back-translation into English by the

Wiesbaden research team to ensure linguistic accuracy and conceptual equivalence (see Appendix B for confirmation).

3.7 Face and Content Validity of the Questionnaire

Face validity refers to the extent to which a questionnaire appears to measure what it is intended to measure, while content validity examines whether the instrument adequately covers all relevant aspects of the construct under investigation (Creswell, 2018). Taken together, these forms of validity ensure that a research tool is not only clear and relevant to participants but also comprehensive enough to capture the full scope of the phenomenon being studied.

The face and content validity of the questionnaire were assessed during the pilot phase. The initial questionnaire, which included the Second Victim (SeViD) tool and the Big Five Inventory-10 (BFI-10), was given to a total of 45 Maltese healthcare professionals: 15 medical practitioners, 15 pharmacists, and 15 nurses representing the main professional groups targeted in the research. Participants completed the questionnaire and provided structured feedback on the clarity of the wording, the relevance of each item to their professional practice, and the overall appropriateness of the tool for the Maltese healthcare setting.

Feedback on the face and content validity was gathered through open-ended comment sections within the questionnaire and follow-up discussions. Participants were invited to highlight unclear or overly technical terms, flag any items they felt were irrelevant, and suggest improvements to make the tool more user-friendly. All feedback was systematically reviewed. Some minor changes were made.The explanation on SVP and its associated symptoms in the information letter was rewritten to aid

understanding among participants unfamiliar with the concept. An opt-out option was introduced, requiring non-participants to select a predefined reason for declining to take part. The closing paragraph of the letter was reworded for improved readability. A demographic question on nationality was also added to distinguish between Maltese, EU, and non-EU professionals, reflecting the diversity of Malta's healthcare workforce. As the feedback confirmed that the tool was clear and suitable for the study context, the responses from these healthcare professionals who participated in the pilot were retained in the main dataset.

3.8 Reliability Testing

Creswell (2018) defined reliability as the extent to which a measurement instrument consistently produces stable results under similar conditions, particularly when evaluating three or more items intended to measure the same construct. In this study, reliability testing was undertaken to examine the internal consistency of the Symptom Load Scale and the Support Measures Scale, which formed part of the SeViD questionnaire. Internal consistency was assessed using Cronbach's alpha, a widely recognised statistic for determining whether the items within a scale measure the same underlying concept (Taber, 2018).

The initial analysis was performed on the pilot-phase sample ($n = 45$) using IBM SPSS Statistics. All scales demonstrated satisfactory internal consistency, with Cronbach's alpha coefficients exceeding the recommended threshold of $\alpha \geq 0.70$.

To strengthen the study's methodological validity, reliability analysis was repeated on the full study population following data collection, with the resulting Cronbach's alpha values presented in the Results chapter (Section 4.2).

3.9 Research Setting

This study employed a nationwide data collection approach across Malta, encompassing a diverse range of healthcare settings, including public hospitals, private hospitals, community care facilities, industry, and other private practices.

3.10 Sampling Strategy

This section describes the sampling strategy used in the study, including participant recruitment and eligibility criteria, the determination of sample size, and the procedures implemented to maximise participation and systematically document responses.

3.10.1 Participant Recruitment and Eligibility

The study focused on medical practitioners, nurses, and pharmacists given their central role in patient care and higher likelihood of encountering key events which increase the risk of experiencing the SVP, including near misses, medical errors, patient aggression, or even death (Johnson & Tucker, 2025; Marung et al., 2023; Potura et al., 2024). Three separate survey links were created to enable profession-specific analysis.

Medical practitioners were invited to participate via an online survey circulated through professional networks, including Tobba Maltin, the Malta College of Family Doctors, and the Association of Private Family Doctors. Nurses were invited to take part via the Nursing Council and the Department of Nursing within the Ministry for Health and Active Ageing. Pharmacists were contacted through the Pharmacy Council, the national regulatory body for all registered pharmacists in Malta. Dissemination was supported by intermediaries who formally agreed to share the

survey links. Acceptance letters from intermediaries were provided in Appendix D. In addition, the Public Research Officer disseminated the survey links to Data Protection Officers under their remit, as documented in Appendix D, thereby ensuring wider circulation among healthcare professionals working within the public sector.

3.10.2 Sample Size Determination and Response Rates

Sample adequacy was assessed using GPower 3.1 (Faul et al., 2009), with a medium effect size (0.25) set as the benchmark, $\alpha = 0.05$, and power at 0.80. This required a minimum of 208 participants per group for the Mann–Whitney U test and 53 per group for the Kruskal–Wallis H test, while large effect sizes (0.40) were considered for within-group analyses. A total of 990 responses (13.5% initial response rate) were obtained, 259 from medical practitioners, 474 from nurses, and 257 from pharmacists, of which 900 (12.3% final response rate) were fully completed questionnaires, supporting adequate statistical power for the planned analyses. In addition, Creswell and Creswell (2018) recommend sampling at least 10% from populations larger than 1,000 to achieve statistically meaningful results. Based on Malta's healthcare workforce (Eurostat, 2022, 2022a, 2025), the target samples were approximately 238 medical practitioners, 414 nurses, and 81 pharmacists. The achieved sample therefore met both GPower and guideline thresholds, enhancing representativeness across Malta's healthcare sector.

3.10.3 Response Maximisation and Documentation

Research suggests that reminder communications can significantly improve response rates in online surveys (Kanuk & Berenson, 1975; Dillman et al., 2009). To enhance participation, a follow-up email was sent to intermediary organisations four weeks

after the initial survey distribution. This reminder underscored the voluntary nature of participation and encouraged further responses.

3.11. Ethical considerations

This study adhered to strict ethical standards to protect participants' rights, confidentiality, and well-being. Ethical approval was obtained from the Faculty Research Ethics Committee (FREC). In line with the University of Malta's Research Ethics Review Procedures, participation was voluntary, and no personally identifiable information was collected. Consent was obtained through an explicit agreement process, whereby participants clicked a button to confirm their willingness to take part. Those who declined participation could select from predefined reasons, allowing documentation of reasons for non-participation. Full documentation is provided in Appendix C.

Furthermore, to uphold transparency and accessibility**,** participants were provided with contact details for both the researcher and the academic supervisor**.** This ensured they had the opportunity to seek clarification or raise concerns about any aspect of the study. Approval was also obtained from the Public Service Research Office (Ministry for Health, Malta, 2023) to meet national research governance requirements.

3.12 Data Collection Methods

The data collection process was carried out through a self-administered, anonymous online questionnaire hosted on SurveyMonkey, a secure and widely recognised platform. The online format offered flexibility for participants, enabling them to complete the survey at their convenience, regardless of their geographical location or workplace. The survey incorporated adaptive questioning, which streamlined the

response process, ensuring that participants were only presented with relevant items based on their previous answers. To maintain confidentiality, SurveyMonkey's encryption and security features were utilised. Furthermore, reminder emails were issued via intermediary organisations to maximise response rates and encourage participation. These measures collectively ensured the integrity and reliability of the data collected. Data collection was conducted over two months, from 20 September to 15 November 2024

3.13 Data Analysis Approach

The data analysis in this study was structured to comprehensively examine the prevalence, impact, and coping mechanisms associated with the SVP among healthcare professionals in Malta. Quantitative statistical analyses were conducted using the results of the questionnaire and qualitative thematic analysis was conducted on the responses of the open ended questions to provide as holistic an understanding of SVP experiences as possible.

3.13.1 Variable coding and data preparation

Unlike other SeViD studies, the survey design in this study permitted participants to skip questions. Consequently, the initial stage of data cleaning involved the removal of cases with incomplete demographic or professional information, as well as missing responses on symptom experiences or support measure ratings. Following this process, responses from 35 medical practitioners, 37 nurses, and 18 pharmacists were excluded from the dataset.

In the questionnaire, participants indicated whether they had experienced the SVP *once*, *more than once*, or *never*. For inferential analysis, all participants who identified

themselves as second victims, regardless of frequency, were grouped and coded as 1, while those who reported never experiencing the SVP were coded as 0. This approach enabled the dichotomisation of SVP status.

Professional experience and age were recorded in predefined ranges (e.g., 20–29 years, 30–39 years) and kept in categorical form for both descriptive and inferential analyses. This approach followed the guidelines outlined by Field (2018) and Agresti (2007), who cautioned against assuming equal spacing between ordinal categories.

Personality traits were assessed using the Big Five Inventory-10 (BFI-10; Rammstedt & John, 2007), which measured extraversion, agreeableness, conscientiousness, neuroticism, and openness. Each trait included one positively worded item and one negatively worded item to reduce response bias and keep balance. Negatively phrased items were reverse-coded before scoring so that higher scores always indicated higher levels of each trait.

Due to a high proportion of "Other" responses for the question on area of practice among nurses and medical practitioners, this variable was analysed descriptively but excluded from inferential testing. This approach is consistent with recommendations in applied statistics texts, which caution that categorical variables with sparse or unevenly distributed categories may distort inferential results (Agresti, 2007). In the case of pharmacists, however, the area of practice categories was sufficiently detailed to allow inferential analyses.

Symptom load was calculated by summing the scores for 18 of the 21 symptoms listed in the questionnaire, consistent with the method used in other SeViD studies. The remaining three symptoms were classified as "desires" and excluded from the total

symptom load. Responses were scored on a three-point Likert scale, with “strongly pronounced” scored as 1, “weakly pronounced” scored as 0.5, and “not at all” scored as 0. Responses of “I don’t know” were treated as missing values.

Preferred support measures were assessed on a five-point Likert scale scored in descending order, where higher scores indicated lower perceived helpfulness. Specifically, “not helpful at all” was scored as 5, “rather not helpful” as 4, “neutral” as 3, “rather helpful” as 2, and “very helpful” as 1.

3.13.2 Quantitative Data Analyses

All analyses were performed using IBM SPSS Statistics for Windows (Version 30.0; IBM Corp., 2024) and were structured according to the study’s six research objectives. To allow for profession-specific interpretation, analyses were conducted separately for each professional group.

First, descriptive statistics were generated to summarise demographic and work-related characteristics, with categorical variables (e.g., gender, nationality, professional role, work setting) reported as frequencies and percentages.

To examine group differences in SVP prevalence, chi-square tests of independence were used to assess whether SVP status varied significantly across categorical predictors such as gender, nationality, work setting (only in the case of pharmacists), and professional experience within each profession. The chi-square test, being a non-parametric method, was appropriate because both the predictors and the outcome variable were categorical, and it did not rely on assumptions of normality. Binary logistic regression analyses were then carried out separately for each group to identify demographic, work-related, and personality factors associated with the SVP

experience (yes vs. no). Although logistic regression is a parametric technique, it was suitable for this binary dependent variable and can accommodate categorical and ordinal predictors through SPSS's inbuilt dummy coding system. As the model assumes a binomial rather than normal distribution, normality testing was not required. In *line* with Field (2018) and Tabachnick and Fidell (2019), bootstrapping with 1,000 bias-corrected and accelerated (BCa) resamples was applied to generate robust confidence intervals and reduce bias from small or uneven group sizes and potential non-normality. This was also done in line with other SeViD studies.

As symptom load was treated as a continuous outcome, initial bivariate associations with demographic and personality variables were examined using Spearman's rank-order correlations, a non-parametric method suitable for ordinal data and non-normally distributed variables.

Multiple linear regression analyses were then conducted separately for each professional group to assess the combined influence of gender, age, nationality, professional experience, and Big Five traits on symptom load. Bootstrapping estimates confidence intervals empirically from repeated resampling, thereby ensuring valid and robust inference even under non-normal conditions. As in earlier steps, 1,000 BCa bootstrap resamples were used to improve estimate stability and accuracy in line with Field (2018) and Tabachnick and Fidell (2019).

Potential mediation pathways between predictors and symptom load were explored in line with Hayes (2022). Simple mediation models were run separately for each profession, with professional experience as the predictor, each Big Five trait as the mediator, and symptom load as the outcome. This was repeated with nationality and gender as predictors to explore possible indirect effects of these demographic

variables. Detailed working of simple mediation can be found in Annex F Table F29 and corresponding matrix on pages 429-442. Parallel mediation models were subsequently tested, entering all five personality traits simultaneously as mediators, and were again repeated using nationality and gender as predictors. Since bootstrapping was also applied in all mediation analyses, separate normality testing was unnecessary; the empirical resampling approach accounts for skewed sampling distributions and provides bias-corrected confidence intervals that strengthen result reliability (Hayes, 2022). Across all mediation analyses, 1,000 BCa bootstrap samples were used to produce robust indirect effect estimates and bias-corrected confidence intervals.

Differences in perceived support between second victims and nonsecond victims were examined within each profession using the Mann–Whitney U test, following assessment of data normality. Tests of normality (Kolmogorov–Smirnov and Shapiro–Wilk) showed that all support perception variables across the three professional groups significantly deviated from normality ($p < 0.001$) for both second victim and nonsecond victim groups (see Tables F10–F12). The Shapiro–Wilk test, which provides greater accuracy in smaller samples, confirmed these findings. Accordingly, the nonparametric Mann–Whitney U test was selected for subsequent group comparisons. Inspection of Q–Q and detrended Q–Q plots (F2a–F7b) further demonstrated deviations from normality in both groups, particularly among second victims, with points diverging from the diagonal line at the tails. Similarly, histograms (e.g., F1a–F1b) displayed skewed distributions, confirming that data were not normally distributed. These findings supported the use of the Mann–Whitney U test as a suitable nonparametric alternative to the independent samples t test for comparing two independent groups on ordinal data.

To examine differences in perceived support across the three professional groups, the Kruskal–Wallis H test was used. This nonparametric test is suitable for comparing three or more independent groups when data are ordinal or not normally distributed. Tests of normality (Kolmogorov–Smirnov and Shapiro–Wilk) showed significant deviations from normality ($p < 0.001$) for most support perception variables and for symptom load across all professions (see Annex F, Tables F13–F16). Although the Shapiro–Wilk test for total symptom load was not significant among pharmacists, suggesting approximate normality in this subgroup, normality was violated in other professions (Table F16). Therefore, the Kruskal–Wallis H test was retained as a consistent and conservative method. This test does not assume a normal distribution or equal variances and is appropriate for skewed or Likert-type data. It was used to compare perceived support, symptom load, and total symptom load among medical practitioners, nurses, and pharmacists. Q–Q and detrended Q–Q plots also showed deviations from normality across groups (Fig. F10-F11). The histograms for all three professions for the total symptom load also showed positively skewed distributions (F13-F16). Kruskal-Wallis H test was used as a non-parametric alternative to one-way ANOVA.

3.13.3 Qualitative Data Analysis

Thematic analysis was undertaken to examine the qualitative feedback provided by nurses, pharmacists, and medical practitioners regarding their awareness, perceptions, and experiences of the SVP. This analytical approach was selected for its flexibility and suitability in identifying and interpreting meaningful patterns across diverse professional narratives. The analysis was guided by Braun and Clarke's (2006) six-phase framework: familiarising oneself with the data, generating initial codes,

searching for potential themes, reviewing themes, defining and naming themes, and producing the final report. Manual coding methods were employed, whereby responses were carefully reviewed, annotated, and systematically organised into broader thematic categories. Manual analysis enabled close engagement with the data, ensuring that themes accurately reflected participants' perspectives.

The findings from this analysis are presented in detail in the results section of this dissertation. To preserve the depth and contextual accuracy of the findings, key themes were illustrated using direct participant quotes, ensuring that the lived experiences of second victims were authentically represented.

3.13.4 Interpretation of Findings

The interpretation of the findings drew on both quantitative statistical trends and qualitative thematic insights to provide a holistic understanding of SVP prevalence, symptom severity, and support mechanisms among healthcare professionals in Malta. Descriptive statistics highlighted demographic patterns and the distribution of SVP across professional groups, while inferential analyses tested for significant differences by profession, gender, and workplace environment. Regression models further identified key predictors of symptom severity, including high-stress workplace settings, limited institutional support, and personality traits such as neuroticism. Complementary qualitative findings contextualised these results by illustrating the psychological distress associated with SVP, challenges in accessing support, and suggestions for workplace improvements.

3.14 Conclusion

This study used a cross-sectional, design based on the validated SeViD framework and supplemented by the BFI-10, allowing for both international comparison and local relevance. The approach combined solid quantitative analyses with thematic exploration of open-ended responses, ensuring that SVP prevalence, symptom severity, and influencing factors were studied alongside personal healthcare experiences.

Chapter 4 - Results

4.1 Introduction

This chapter presents the key findings from the study, which explored the Second Victim Phenomenon (SVP) among healthcare professionals in Malta. As outlined in Chapter Three (Methodology), data were collected through online questionnaires administered to medical practitioners, nurses, and pharmacists (see Appendix A). The questionnaires had a few demographic questions which were specific to the respective profession, but the rest of the questions were similar to enable descriptive and comparative statistics. The questionnaires, distributed via SurveyMonkey, included mainly closed-ended (quantitative) and a few open-ended (qualitative) questions to capture both measurable trends and personal experiences related to SVP.

The results of the internal consistency and reliability measures of the multi-item survey scales showed a high reliability of the measurement tools.

Given the study's predominantly positivist design, the results were organised by the six research objectives, with a primary emphasis on quantitative analysis. The chapter begins with descriptive statistics, summarising participants' demographic and professional characteristics. This is followed by analyses addressing SVP prevalence, symptom severity, personality traits, and associations with demographic and work-related factors.

In addition to the quantitative findings, the final section of this chapter presented a thematic analysis of participants' open-ended responses, offering a richer understanding of their personal experiences and perceived need for support, while also triangulating the results.

4.2 Internal Consistency Reliability of Survey Scales

The Symptom Load scale and the Support Measures scales, which formed key components of the SeViD questionnaire, exhibited good to excellent internal consistency across all professional groups. Cronbach's alpha values ranged from 0.880 to 0.942 for the Symptom Load Scale and from 0.916 to 0.942 for the Support Measures Scale (see Table 4.1).

Table 4.1

Cronbach's Alpha for Multi-Item Scales (by Profession)

Scale	Medical Practitioners (α, n = 224)	Nurses (α, n = 437)	Pharmacists (α, n = 239)	Interpretation Range
Symptom Load Scale	0.881	0.880	0.885	Good (≥ 0.80)
Support Measures Scale	0.916	0.942	0.916	Excellent (≥ 0.90)

Note. Cronbach α interpreted following George & Mallery (2003) and Field (2018).

4.3 Descriptive statistics across the three professions

According to Eurostat (2022), the practising healthcare workforce in Malta included 2,384 medical practitioners, 4,136 nurses, and 806 pharmacists.

The study initially received 990 survey responses: 259 from medical practitioners, 474 from nurses, and 257 from pharmacists. These totals reflected both complete and partial submissions. After applying data cleaning procedures and excluding respondents with missing demographic or professional information (35 medical practitioners, 37 nurses, and 18 pharmacists), the final valid sample consisted of 900 participants.

4.3.1 Response Rates by Profession

As shown in Table 4.2, the survey yielded 990 responses, of which 900 remained valid after data cleaning, corresponding to an initial response rate of 13.5% and an effective response rate of 12.3%. According to G*Power 3.1, the required sample sizes were 208 participants per group to detect medium effects (0.25) and 81 for large effects (0.40) in Mann–Whitney U tests, and 53 and 20 participants per group for medium and large effects, respectively, in Kruskal–Wallis H tests (Faul et al., 2009). The overall dataset exceeded medium-effect thresholds, while smaller intra-professional subgroups met large-effect requirements. Representativeness was also achieved, with valid samples meeting or exceeding Creswell and Creswell's (2018) 10% benchmark for medical practitioners (n = 224 vs. 238 target), nurses (n = 437 vs. 414 target), and pharmacists (n = 239 vs. 81 target).

Table 4.2

Survey Responses and Required Sample Sizes by Profession (Eurostat 2022 Data)

Category	Medical Practitioners	Nurses	Pharmacists
Practising (Eurostat, 2022)	2,384	4,136	806
Complete Responses	224	437	239

Note. "Complete responses" refer to cleaned and retained questionnaires.

4.3.2 Baseline Characteristics by Profession

Descriptive analyses provided an overview of participants' demographic and professional profiles (see Table 4.3).

Table 4.3

Demographic and Occupational Profile of Healthcare Professionals in Malta

		Profession					
		Medical Practitioners		Nurses		Pharmacists	
		Count(n)	Column %	Count(n)	Column %	Count(n)	Column %
Nationality	Maltese	214	96.0	388	89.0	221	92.5
	Non-Maltese	9	4.0	48	11.0	18	7.5
Gender	Male	107	47.8	98	22.5	83	34.9
	Female	117	52.2	337	77.5	155	65.1
Age	20-29	28	12.6	76	17.4	36	15.1
	30-39	60	26.9	130	29.7	53	22.2
	40-49	40	17.9	83	19.0	68	28.5
	50-59	44	19.7	105	24.0	76	31.8
	60+	51	22.9	43	9.8	6	2.5
Employment	Public	131	60.4	417	96.5	89	37.2
	Private	51	23.5	9	2.1	133	55.6
	Both	35	16.1	6	1.4	17	7.1
Professional Experience (years)	0-9	52	23.9	119	27.4	57	23.8
	10-19	52	23.9	121	27.8	50	20.9
	20-29	38	17.4	72	16.6	75	31.4
	30-39	46	21.1	84	19.3	57	23.8
	40+	30	13.8	39	9.0	0	0.0
Working mode	Shifts with night	61	27.4	137	31.6	6	2.5
	Same time each day	98	43.9	77	17.7	141	59.0
	Shifts no nights	12	5.4	178	41.0	65	27.2
	Irregular no shifts	15	6.7	9	2.1	16	6.7
	Others	37	16.6	33	7.6	11	4.6
Awareness of the term "Second victim" before the study	Yes	80	35.9	153	35.0	55	23.1
	No	143	64.1	284	65.0	183	76.9

Most respondents across all three professional groups were Maltese, with the highest proportion observed among medical practitioners (96.0%, n = 214), followed by pharmacists (92.5%, n = 221) and nurses (89.0%, n = 388). Gender distributions varied, as nurses (77.5%, n = 337) and pharmacists (65.1%, n = 155) were predominantly female, whereas medical practitioners (52.2%, n = 117) had a more balanced gender split. Age patterns showed that medical practitioners were the oldest group, with 22.9% (n = 51) aged 60 years or above, compared to 9.8% of nurses (n = 43) and 2.5% of pharmacists (n = 6). By contrast, younger respondents aged 20–29 years were more common among nurses (17.4%, n = 76) and pharmacists (15.1%, n = 36), while medical practitioners had the smallest representation in this age range (12.6%, n = 28). Employment sector patterns reflected professional roles: nearly all nurses worked in the public sector (96.5%, n = 417), most pharmacists were privately employed (55.6%, n = 133), and medical practitioners were more evenly distributed across public (60.4%, n = 131), private (23.5%, n = 51), and dual roles (16.1%, n = 35). Professional experience also differed across groups, with medical practitioners reporting the widest range, including 13.8% (n = 30) who had over 40 years of practice. Pharmacists were most represented in the 20–29 years of experience category (31.4%, n = 75), whereas nurses were more evenly distributed, with the largest subgroup reporting 10–19 years of practice (27.8%, n = 121). Working patterns reflected further differences: most pharmacists worked fixed daily schedules (59.0%, n = 141), while nurses more often worked shifts with nights (31.6%, n = 137) or without nights (41.0%, n = 178). Medical practitioners showed mixed arrangements, with 43.9% (n = 98) on fixed schedules and 27.4% (n = 61) undertaking night shifts. Awareness of the term “second victim” was reported by 35.9% of medical practitioners (n = 80), 35.0% of nurses (n = 153), and 23.1% of pharmacists (n = 55).

4.3.3 Clinical Specialisation and Practice Settings by Profession

Results from Table 4.4 show that among medical practitioners (n = 221), most (65.2%, n = 144) selected *Other*, while the most reported specific specialisations were paediatrics (9.5%, n = 21), emergency care (6.3%, n = 14), and ophthalmology (3.1%, n = 7). For nurses (n = 435), nearly half (45.3%, n = 197) chose *Other*, with geriatrics (16.8%, n = 73), mental health (7.8%, n = 34), and emergency care (7.6%, n = 33) most frequently reported. Among pharmacists (n = 239), the largest group worked in community pharmacy (45.6%, n = 109), followed by hospital pharmacy (23.4%, n = 56), regulatory affairs (8.4%, n = 20), and importation/wholesale roles (7.5%, n = 18), with 11.3% (n = 27) selecting *Other*. The high proportion of *Other* responses meant inferential analysis by specialisation was not feasible for medical practitioners and nurses.

Table 4.4

Clinical Areas of Practice and Specialisation by Profession

Area of Practice/Specialisation	Medical Practitioners		Nurses		Pharmacists	
	Count (n)	Column %	Count (n)	Column %	Count (n)	Column %
Cardiology	1	0.5	21	4.8	0	0.0
Dermatology	4	1.8	1	0.2	0	0.0
Emergency Care	14	6.3	33	7.6	0	0.0
Endocrinology	2	0.9	0	0.0	0	0.0
ENT	4	1.8	9	2.1	0	0.0
Gastroenterology	2	0.9	11	2.5	0	0.0
Geriatrics	6	2.7	73	16.8	0	0.0
Mental Health	4	1.8	34	7.8	0	0.0
Oncology	3	1.4	9	2.1	0	0.0
Ophthalmology	7	3.1	2	0.5	0	0.0
Orthopaedics	4	1.8	14	3.2	0	0.0
Paediatrics	21	9.5	23	5.3	0	0.0
Pain Management	2	0.9	1	0.2	0	0.0
Renal	3	1.4	7	1.6	0	0.0
Other	144	65.2	197	45.3	27	11.3
Industry	0	0.0	0	0.0	9	3.8
Community Pharmacy	0	0.0	0	0.0	109	45.6
Importation and wholesale dealing (including medical representation)	0	0.	0	0.0	18	7.5
Hospital	0	0.0	0	0.0	56	23.4
Regulatory Affairs	0	0.0	0	0.0	20	8.4
Total	221	100	435	100	239	100

Note: Valid percentages with no missing data

4.3.4 Key Events Associated with Second Victim Experiences

Table 4.5 presents the distribution of key events reported by medical practitioners, nurses, and pharmacists. While all professions encountered a range of adverse situations, the types of incidents most frequently identified differed notably across groups.

Table 4.5

Key Events Reported by Medical Practitioners, Nurses, and Pharmacists

	Occupation					
	Medical practitioners		Nurses		Pharmacists	
Key event	Count (n)	Column %	Count (n)	Column %	Count (n)	Column %
Incident with patient harm	28	21.5	20	9.9	8	11.3
Incident without patient harm	27	20.8	19	9.4	20	28.2
Unexpected death/suicide of a patient	32	24.6	27	13.4	5	7.0
Unexpected death/suicide of a colleague	7	5.4	28	13.8	2	2.8
Aggressive behaviour of a patient/relative	35	26.9	103	51.0	31	43.7
Other (please specify)	1	.8	5	2.5	5	7.0
Total	130	100.0	202	100.0	71	100.0

The most common event reported was aggressive behaviour by a patient or relative, affecting 26.9% of medical practitioners (n = 35/130), 51.0% of nurses (n = 103/202), and 43.7% of pharmacists (n = 31/71). Among medical practitioners, the second most frequent event was unexpected patient death or suicide (24.6%, n = 32/130), while nurses most often cited unexpected death or suicide of a colleague (13.8%, n =

28/202). Pharmacists frequently reported aggression incidents without patient harm (28.2%, n = 20/71). Incidents involving patient harm were noted by 21.5% of medical practitioners (n = 28/130), 9.9% of nurses (n = 20/202), and 11.3% of pharmacists (n = 8/71). Less common events included unexpected patient death or suicide among pharmacists (7.0%, n = 5/71) and unexpected colleague death or suicide (2.8%, n = 2/71). Events categorised as *Other* were rare across all groups, with 0.8% of medical practitioners (n = 1/130), 2.5% of nurses (n = 5/202), and 7.0% of pharmacists (n = 5/71).

4.4 Objective 1: Prevalence of the Second Victim Phenomenon

This section summarises the self-reported prevalence of Second Victim Phenomenon (SVP) experiences among medical practitioners, nurses, and pharmacists in Malta.

4.4.1 Prevalence of Second Victim Experiences by Profession

Participants were asked if they had ever experienced a work-related event leading to psychological traumatisation consistent with SVP (see Table 4.6 and Figure 4.1). Among medical practitioners (n = 224), 42.0% (n = 94) reported experiencing such an event once, and 35.7% (n = 80) reported multiple experiences. Only 22.3% (n = 50) had no such experience.

A similar trend emerged among nurses (n = 437), with 45.3% (n = 198) reporting one SVP event and 24.9% (n = 107) reporting multiple occurrences. Conversely, pharmacists (n = 239) reported lower overall exposure: 28.4% (n = 68) experienced SVP once, 13.4% (n = 32) more than once, and the majority (58.2%, n = 139) reported no experience.

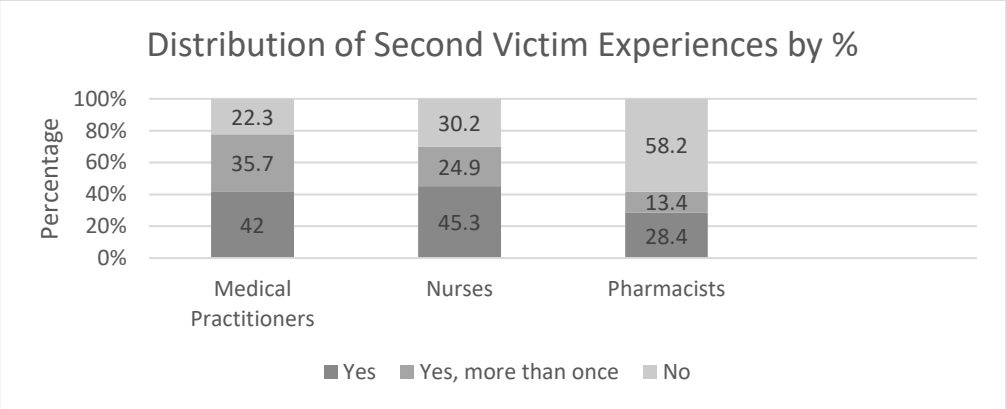
Table 4.6

Frequency of Self-Reported Second Victim Experiences by Profession.

Experienced this traumatisation	Medical Practitioners n (%) (n = 224)	Nurses n (%) (n = 437)	Pharmacists n (%) (n = 239)
Yes	94 (42.0)	198 (45.3)	68 (28.4)
Yes, more than once	80 (35.7)	107 (24.9)	32 (13.4)
No	50 (22.3)	132 (30.2)	139 (58.2)

Figure 4.1

Distribution of Second Victim Experiences as percentage (%)



4.4.2 Overall Prevalence of the Second Victim Phenomenon by Profession

As shown in Table 4.7, 77.7% of medical practitioners, 69.8% of nurses, and 42.3% of pharmacists reported experiencing SVP at least once. A chi-square (χ^2) test was applied to assess the association between profession and second victim status (yes/no). The null hypothesis stated that no association existed between the variables and would be retained if the p-value exceeded the 0.05 significance level. The alternative hypothesis specified that an association existed and would be supported if the p-value

was less than the 0.05 level of significance. The analysis confirmed significant variation across the three professional groups, χ^2 (2, N = 900) = 73.92, p < 0.001.

Table 4.7

Second Victim Phenomenon by Profession

Second Victim Experience		Yes	No	Total
Medical Practitioners	Count	174	50	224
	% within Occupation	77.7%	22.3%	100.0%
Nurses	Count	305	132	437
	% within Occupation	69.8%	30.2%	100.0%
Pharmacists	Count	101	138	239
	% within Occupation	42.3%	57.7%	100.0%
Total	Count	580	320	900
	% within Occupation	64.4%	35.6%	100.0%

$X^2(2) = 73.916$, < 0.001 (result is very significant)

4.4.3 Second Victim Phenomenon Incidents in the Past 12 Months

In Table 4.8, recent experiences of SVP (within the past year) showed similar trends across professions. Among medical practitioners (n = 133), 44.4% (n = 59) reported experiencing SVP in the previous 12 months. Rates were comparable for pharmacists (41.9%, n = 31 out of 74) and nurses (39.9%, n = 83 out of 208). The remaining respondents reported no SVP experience within the past year.

Table 4.8

Self-Reported Second Victim Experiences in the Past 12 Months by Profession

SVP in the last 12 months	Medical Practitioners Count (n) / Column %	Nurses Count (n) / Column %	Pharmacists Count (n) / Column %
Yes	59 / 44.4	83 / 39.9	31 / 41.9
No	74 / 55.6	125 / 60.1	43 / 58.1
Total	133 / 100.0	208 / 100.0	74 / 100.0

4.4.4 Summary of Findings for Objective 1

Lifetime SVP prevalence was highest among medical practitioners (77.7%) and nurses (69.8%), with pharmacists reporting substantially lower rates (42.3%). 12-month prevalence rates were similar across all groups: 44.4% among medical practitioners, 39.9% among nurses, and 41.9% among pharmacists. These findings suggest that while pharmacists reported fewer lifetime SVP experiences, their recent exposure rates were comparable to those of other professions (see Table 4.9).

Table 4.9

Summary of Prevalence of Second Victim Phenomenon (SVP) by Profession

Prevalence Measure	Medical Practitioners	Nurses	Pharmacists
Ever experienced SVP	77.7	69.8	42.3
SVP in the past 12 months	44.4	39.9	41.9

Note. Percentages reflect respondents identifying as Second Victims.

4.5 Objective 2: Symptoms and Experiences Associated with the Second Victim Phenomenon

This section summarises the psychological and emotional symptoms reported by second victims, along with predictors of symptom load and typical recovery times, analysed by profession.

4.5.1 Medical Practitioners

As shown in Table 4.10, medical practitioners reported emotional and cognitive symptoms more often than behavioural or somatic ones. The most pronounced symptoms were reliving the situation in similar contexts (53, 40.5%), reliving it

outside work (45, 34.1%), and self-doubt (41, 31.3%). Feelings of guilt (32, 24.4%) and depressive mood (28, 21.4%) were also frequent. Cognitive issues included concentration problems (24, 18.2%), while somatic responses such as insomnia or excessive sleep (22, 16.7%) were noted. Behavioural symptoms were less common, though defensive or overly cautious behaviour was reported by 39 participants (29.8%). In contrast, aggressive behaviour (1, 0.8%) and alcohol or drug use (0, 0.0%) were rare.

Table 4.10

Descriptive Statistics for Trauma Response Variables for Medical Practitioners

Variables	Count n	Strongly Pronounced n (%)	Weakly Pronounced n (%)	Not at All n (%)	I Don't Know n (%)
Fear of exclusion by colleagues	131	14 (10.7)	38 (29.0)	74(56.5)	5 (3.8)
Fear of losing a job	132	19 (14.4)	36 (27.3)	71 (53.8)	6 (4.5)
Listlessness	128	25 (19.5)	52 (40.6)	33 (25.8)	18 (14.1)
Depressive mood	131	28 (21.4)	65 (49.6)	29(22.1)	9 (6.9)
Concentration difficulties	132	24 (18.2)	65 (49.2)	36 (27.3)	7 (5.3)
Reliving the situation outside the professional activity	132	45 (34.1)	57 (43.2)	24 (18.2)	6 (4.5)
Reliving the situation in similar professional situations	131	53 (40.5)	44 (33.6)	25 (19.1)	9 (6.9)
Aggressive, intentionally risky behaviour	132	1 (8.0)	8(6.1)	116 (87.9)	7 (5.3)
Defensive, overly cautious behaviour	131	39 (29.8)	57 (43.5)	35(26.7)	0 (0.0)
Psychosomatic reactions (eg.headaches, back pain)	131	20 (15.3)	31 (23.7)	77 (58.8)	3 (2.3)
Insomnia or excessive need for sleep	132	22 (16.7)	52 (39.4)	55 (41.7)	3 (2.3)
Use of alcohol/drugs due to the event	132	0 (0.0)	7 (5.3)	118 (89.4)	7 (5.3)
Feelings of shame	131	25 (19.1)	40 (30.5)	56 (42.7)	10 (7.6)
Feelings of guilt	131	32 (24.4)	55 (42.0)	42 (32.1)	2 (1.5)

Variables	Count n	Strongly Pronounced n (%)	Weakly Pronounced n (%)	Not at All n (%)	I Don't Know n (%)
Self-doubt	131	41 (31.3)	61 (46.6)	25 (19.1)	4(3.1)
Social isolation	132	8 (6.1)	24 (18.2)	95 (72.0)	5 (3.8)
Anger/rage towards others	132	13 (9.8)	32 (24.2)	82 (62.1)	5 (3.8)
Anger/rage towards myself	131	15(11.5)	44 (33.6)	68 (51.9)	4 (3.1)

4.5.2 Nurses

As shown in Table 4.11, the most frequently strongly pronounced symptoms were primarily **emotional in nature**, including reliving the situation outside work (81, 40.1%), depressive mood (69, 34.5%), and self-doubt (59, 29.8%). In addition, **cognitive difficulties** such as problems with concentration (71, 35.7%) and **somatic manifestations,** including insomnia or excessive need for sleep (65, 32.5%) were also reported by nearly a third of participants.

Behavioural symptoms remained less frequent overall. Defensive, overly cautious behaviour was the most prominent, strongly pronounced in 67 nurses (33.7%). In contrast, aggressive behaviour was reported by 20 (10.0%), social isolation by 25 (12.7%), and use of alcohol or drugs by 10 (5.0%).

Table 4.11

Symptom Severity Among Nurses Following a Second Victim Event

Symptom	Count n	Strongly Pronounced n (%)	Weakly Pronounced n (%)	Not at All n (%)	I Don't Know n (%)
Fear of exclusion by colleagues	201	34 (16.9)	44 (21.9)	103 (51.2)	20 (10.0)
Fear of losing job	201	46 (22.9)	34 (16.9)	106 (52.7)	15 (7.5)
Listlessness	197	42 (21.3)	55 (27.9)	49(24.9)	51 (25.9)
Depressive mood	200	69 (34.5)	82 (41.0)	37 (18.5)	12 (6.0)
Concentration difficulties	199	71 (35.7)	88 (44.)	36 (18.1)	4 (2.0)
Reliving the situation outside the professional activity	202	81 (40.1)	73 (36.1)	38 (18.8)	10 (5.0)
Reliving the situation in similar professional situations	201	72 (35.8)	78 (38.8)	38 (18.9)	13 (6.5)
Aggressive, intentionally risky behaviour	201	20 (10.0)	35 (17.4)	132 (65.7)	14 (7.0)
Defensive, overly cautious behaviour	199	67 (33.7)	88 (44.2)	36 (18.1)	8(4.0)
Psychosomatic reactions (headaches,back pain, etc.)	200	58 (29.0)	66 (33.0)	61 (30.5)	15 (7.5)
Insomnia or excessive need for sleep	200	65 (32.5)	69 (34.5)	56 (28.0)	10 (5.0)
Use of alcohol/drugs due to the event	199	10 (5.0)	17 (8.5)	156 (78.4)	16 (8.0)
Feelings of shame	198	33 (16.7)	52 (26.3)	100(50.5)	13 (6.6)
Feelings of guilt	199	45 (22.6)	65 (32.7)	73 (36.7)	16 (8.0)
Self-doubt	198	59 (29.8)	78 (39.4)	54(27.3)	7 (3.5)
Social isolation	197	25 (12.7)	48 (24.4)	107 (54.3)	17 (8.6)
Anger/rage towards others	199	45 (22.6)	56 (28.1)	85 (42.7)	13 (6.5)
Anger/rage towards myself	198	39 (19.7)	58 (29.3)	96 (48.5)	5 (2.5)

4.5.3 Pharmacists

Table 4.12 presents the distribution of symptom severity among pharmacists following a second victim event.

Table 4.12

Symptom Severity Among Pharmacists Following a Second Victim Event

Symptom	Count n	Strongly Pronounced n (%)	Weakly Pronounced n (%)	Not at All n (%)	I Don't Know n (%)
Fear of exclusion by colleagues.	72	8 (11.1)	15(20.8)	45 (62.5)	4 (5.6)
Fear of losing a job	73	13 (17.8)	22 (30.1)	37 (50.7)	1 (1.4)
Listlessness	73	11 (15.1)	29 (39.7)	25 (34.2)	8 (11.0)
Depressive mood	73	19 (26.0)	37 (50.7)	16 (21.9)	1 (1.4)
Concentration difficulties	73	26 (35.6)	32 (43.8)	14 (19.2)	1 (1.4)
Reliving the situation outside the professional activity	72	29 (40.3)	24 (33.3)	15 (20.8)	4 (5.6)
Reliving the situation in similar professional situations	72	19 (26.4)	34 (47.2)	17 (23.6)	2 (2.8)
Aggressive, intentionally risky behaviour	73	1 (1.4)	15 (20.5)	55 (75.3)	2 (2.7)
Defensive, overly cautious behaviour	73	24 (32.9)	34 (46.6)	13 (17.8)	2 (2.7)
Psychosomatic reactions (headaches, back pain etc.)	73	15 (20.5)	15 (20.5)	37 (50.7)	6 (8.2)
Insomnia or excessive need for sleep	73	21 (28.8)	19 (26.0)	32 (43.8)	1 (1.4)
Use of alcohol/drugs due to the event	73	1 (1.4)	3 (4.1)	64 (87.7)	5 (6.8)
Feelings of shame	73	9 (12.3)	21 (28.8)	41 (56.2)	2 (2.7)
Feelings of guilt	73	16 (21.9)	26 (35.6)	30 (41.1)	1 (1.4)
Self-doubt	73	20 (27.4)	34 (46.6)	18 (24.7)	1 (1.4)
Social isolation	72	4 (5.6)	22 (30.6)	45 (62.5)	1 (1.4)

Symptom	Count n	Strongly Pronounced n (%)	Weakly Pronounced n (%)	Not at All n (%)	I Don't Know n (%)
Anger/rage towards others	73	10 (13.7)	20 (27.4)	41 (56.2)	2(2.7)
Anger/rage towards myself	73	9 (12.3)	24 (32.9)	36 (49.3)	4 (5.5)

Among pharmacists (n = 73), the most strongly pronounced symptoms were concentration difficulties (26 participants, 35.6%), reliving the situation outside work (29, 40.3%), and defensive, overly cautious behaviour (24, 32.9%). Emotional symptoms such as depressive mood (19, 26.0%) and self-doubt (20, 27.4%) were also commonly reported.

As with the other groups, behavioural symptoms were infrequently reported. Only one participant (1.4%) indicated a strongly pronounced use of alcohol or drugs, and one (1.4%) reported aggressive behaviour. Social isolation was strongly pronounced in four participants (5.6%).

4.5.4 Interprofessional Differences in Symptom Load Severity

As shown in Table 4.13, nurses reported the highest symptom load scores following a second victim experience (M = 7.69, SD = 3.72; median 7.41), followed by pharmacists (M = 6.72, SD = 3.68; median 6.50) and medical practitioners (M = 6.50, SD = 3.56; median 6.00). The Kruskal–Wallis test was used here. In Kruskal Wallis Test we test whether the difference between the mean symptom load scores of the three professions is significant. HO means there is no significant difference in the mean rank of the symptom load between the three professions. H1 means there is a significant difference in the mean rank of symptom load between the three professions. The Kruskal–Wallis test indicated that these differences were statistically significant, $H(2) = 9.13$, $p = 0.010$.

Table 4.13

Symptom Load Scores by Occupation

Occupation	Mean	Median	N	Std. Deviation
Medical Practitioners	6.5042	6.0000	132	3.55686
Nurses	7.6874	7.4118	200	3.71798
Pharmacists	6.7227	6.5000	73	3.68393
Total	7.1279	7.0000	405	3.69346

Note.Kruskal-Wallis H(2) =9.127, p = 0.010

4.5.5 Interprofessional Differences in Emotional and Behavioural Responses to Adverse Events

As shown in Table 4.14, the Kruskal–Wallis H test was used to examine interprofessional differences in emotional and behavioural responses among medical practitioners, nurses, and pharmacists, based on ordinal data from a three-point Likert scale. Significant differences were found for aggressive or intentionally risky behaviour, H(2) = 23.69, p < 0.001; psychosomatic symptoms, H(2) = 23.94, p < 0.001; concentration difficulties, H(2) = 12.34, p = 0.002; and sleep disturbances, H(2) = 11.50, p = 0.003, with nurses and pharmacists generally reporting higher symptom burdens than medical practitioners. Substance use also differed significantly, H(2) = 8.89, p = 0.012, as did social isolation, H(2) = 8.60, p =0.014, and anger or rage directed towards others, H(2) = 14.03, p = 0.001, where nurses consistently ranked highest. No significant differences were observed for fear of exclusion, H(2) = 2.31, p = 0.315; fear of job loss, H(2) = 0.60, p = 0.743; listlessness, H(2) = 2.20, p = 0.333; depressive mood, H(2) = 5.27, p = 0.072; reliving the situation outside work, H(2) = 0.61, p = 0.738; reliving it in similar professional contexts, H(2) = 3.65, p = 0.161; defensive behaviour, H(2) = 2.62, p = 0.270; feelings of shame, H(2) = 3.12, p = 0.210; guilt, H(2) = 1.37, p = 0.504; self-doubt, H(2) = 1.45, p = 0.484; and anger or rage directed at oneself, H(2) = 1.61, p = 0.448.

Table 4.14

Comparison of Symptom Load Across Professions

	Medical Practitioners		Nurses		Pharmacists		**Kruskal-Wallis(H)**	**p**
	N	Mean Rank	N	Mean Rank	N	Mean Rank		
Fear of exclusion by colleagues	126	185.83	181	194.60	68	174.45	2.313	0.315
Fear of losing the job	126	187.10	186	194.33	72	197.22	0.595	0.743
Listlessness	110	163.37	146	165.50	65	146.88	2.201	0.333
Depressive mood	122	177.31	188	203.38	72	184.53	5.265	0.072
Concentration difficulties	125	169.35	195	209.69	72	207.90	12.339	**0.002**
Reliving the situation outside the professional activity	126	187.68	192	196.82	68	194.91	0.607	0.738
Reliving the situation in similar professional situations	122	199.48	188	170.56	70	170.56	3.648	0.161
Aggressive, intentionally risky behaviour	125	165.32	187	209.37	71	193.24	23.689	**0.000**
Defensive, overly cautious behaviour	131	184.46	191	203.41	71	202.15	2.617	0.270
Psychosomatic reactions(head aches, backpain,etc.)	128	161.19	185	216.32	67	175.20	23.936	**0.000**
Insomnia or excessive need for sleep,	129	174.32	190	214.22	72	186.78	11.496	**0.003**
Use of alcohol/drugs due to event	125	179.72	183	197.46	68	180.51	8.887	**0.012**
Feelings of shame	121	200.86	185	186.27	71	175.90	3.122	0.210
Feelings of guilt	129	200.77	183	189.84	72	184.43	1.370	0.504
Self-doubt	127	204.72	191	191.09	72	190.09	1.451	0.484
Social isolation	127	171.09	180	202.24	71	190.13	8.597	**0.014**

Anger rage towards others	127	169.49	186	211.59	71	183.65	14.026	**0.001**
Anger rage towards myself	127	187.39	193	201.52	69	190.78	1.608	0.448

4.5.6 Time to Recovery by Profession

Table 4.15 shows the distribution of time to recovery among medical practitioners, nurses, and pharmacists following a second victim experience.

Table 4.15

Time to recovery by Profession

Profession	Medical practitioners		Nurses		Pharmacists	
Time to recovery	Frequency n	Valid Percent %	Frequency n	Valid Percent %	Frequency n	Valid Percent %
Less than a week	18	13.6	29	14.2	26	35.6
Within a week	19	14.4	44	21.6	18	24.7
Within a month	46	34.8	61	29.9	8	11.0
Within a year	15	11.4	27	13.2	8	11.0
More than a year	9	6.8	13	6.4	5	6.8
I have not fully recovered yet	25	18.9	30	14.7	8	11.0
Total Second Victims	132	100.0	204	100.0	73	100.0
Missing	92		233		166	
Total participants	224		247		239	

As shown in Table 4.15, 34.8% of medical practitioners (n = 46 out of 132) and 29.9% of nurses (n = 61 out of 204) recovered within one month, while pharmacists most often reported recovery in less than a week (35.6%, n = 26 out of 73). Recovery within a year was noted by 11.4% of medical practitioners (n = 15), 13.2% of nurses (n = 27), and 11.0% of pharmacists (n = 8). Non-recovery was reported by 18.9% of medical practitioners (n = 25), 14.7% of nurses (n = 30), and 11.0% of pharmacists (n = 8).

4.5.7 Summary of Findings for Objective 2

Table 4.16 summarises the main findings for Objective 2, outlining the most common and least reported symptoms, prominent emotional and cognitive responses, typical recovery times, non-recovery rates, overall symptom load severity, and interprofessional differences across medical practitioners, nurses, and pharmacist**.**

Table 4.16

Summary of Symptoms, Recovery, and Interprofessional Differences in Symptom Load

Category	Medical Practitioners (n = 132)	Nurses (n = 204)	Pharmacists (n = 73)
Most Common Strongly Pronounced Symptoms	Reliving in professional situations (53, 40.5%) Reliving outside work (45, 34.1%) Self-doubt (41, 31.3%)	Reliving outside work (81, 40.1%) Concentration difficulties (71, 35.7%) Depressive mood (69, 34.5%)	Reliving outside work (29, 40.3%) Concentration difficulties (26, 35.6%) Defensive behaviour (24, 32.9%)
Prominent Emotional/Cognitive Symptoms	Depressive mood (28, 21.4%) Concentration difficulties (24, 18.2%) Feelings of guilt (32, 24.4%)	Depressive mood (69, 34.5%) Self-doubt (59, 29.8%) Insomnia/excessive sleep (65, 32.5%)	Depressive mood (19, 26.0%) Self-doubt (20, 27.4%) Insomnia/excessive sleep (21, 28.8%)
Least Reported Strongly Pronounced Symptoms (Behavioural)	Alcohol/drug use (0, 0.0%) Aggressive behaviour (1, 0.8%) Social isolation (8, 6.1%)	Alcohol/drug use (10, 5.0%) Aggressive behaviour (20, 10.0%) Social isolation (25, 12.7%)	Alcohol/drug use (1, 1.4%) Aggressive behaviour (1, 1.4%) Social isolation (4, 5.6%)
Most Frequent Time to Recovery	Within a month (46, 34.8%)	Within a month (61, 29.9%)	Less than a week (26, 35.6%)
Non-Recovery Rates	25 (18.9%)	30 (14.7%)	8 (11.0%)

Symptom Load Severity (Mean, SD; Median)	M = 6.50, SD = 3.56; Median = 6.00	M = 7.69, SD = 3.72; Median = 7.41	M = 6.72, SD = 3.68; Median = 6.50
Kruskal–Wallis Interprofessional Differences	Lower symptom load overall; lowest in psychosomatic, concentration, and sleep symptoms	Highest symptom load overall; highest in aggressive/risky behaviour, psychosomatic reactions, concentration difficulties, sleep problems, substance use, social isolation, anger at others	Intermediate symptom load; consistently higher than medical practitioners but lower than nurses

4.6 Objective 3: Influence of Demographic and Work-Related Factors on Second Victim Status and Symptom Severity

Analyses consisted of chi-square tests, which assessed associations between demographic or workplace factors and second victim status but did not indicate the direction of the relationship. Logistic regression was then applied to estimate the risk of becoming a second victim (a yes/no outcome), while linear regression was used to examine how these factors influenced symptom load, which in this study was measured on a Likert scale and treated as a continuous outcome. To enhance reliability, all logistic and linear regression analyses were bootstrapped with 1,000 samples. Bootstrapping is a resampling method that repeatedly draws new samples (with replacement) from the dataset to produce more stable coefficients and confidence intervals, reducing the influence of sample-specific fluctuations. The results below present key associations and significant findings for each professional group.

4.6.1 Demographic and Work-Related Differences in Second Victim Phenomenon Prevalence

Table 4.17 summarises demographic variables. Chi-square analyses revealed no statistically significant associations between second victim status and demographic variables, including nationality, gender, age group, or professional experience across the three professions (all $p > 0.05$). However, among medical practitioners, professional experience was close to significance regarding second victim status, χ^2 (4) = 8.36, p = 0.074, with those in earlier career stages appearing more frequently affected. A similar trend was observed among nurses, where professional experience was also nearly significantly associated with second victim status, χ^2 (4) = 9.21, p = 0.056; nurses with less experience reported higher rates of distress. For pharmacists, gender showed a near-significant association, χ^2 (1) = 3.09, p = 0.079, with a higher proportion of female pharmacists reporting second victim experiences compared to their male counterparts. Details of how the chi squared tests were worked out for medical practitioners are given in Appendix F1-F9. Similar methodology was used for nurses and for pharmacists.

Table 4.17

Demographics and Second Victim Status by Profession

	Medical Practitioners (n = 224)		Nurses (n = 437)		Pharmacists (n = 239)	
Variable	Yes n (%)	No n (%)	Yes n (%)	No n (%)	Yes n (%)	No n (%)
Nationality						
Maltese	168 (78.5)	46 (21.5)	274 (70.6)	114 (29.4)	92 (41.6)	129 (58.4)
Non-Maltese	5 (55.6)	4 (44.4)	30 (62.5)	18 (37.5)	9 (50.0)	9 (50.0)
χ^2(df), p	χ^2 (1) = 1.462, p =0.227		χ^2 (1) = 0.977, p = 0.323		χ^2 (1) = 0.196, p = 0.658	
Gender						
Male	81 (75.7)	26 (24.3)	64 (65.3)	34 (34.7)	28 (33.7)	55 (66.3)
Female	93 (79.5)	24 (20.5)	240 (71.2)	97 (28.8)	72 (46.5)	83 (53.5)
χ^2(df), p	χ^2 (1) = 0.270, p = 0.604		X ² (1) = 0.995, p = 0.319		χ^2 (1) = 3.085, p =0.079	
Age Group						
20–29	22 (78.6)	6 (21.4)	55 (72.4)	21 (27.6)	15 (41.7)	21 (58.3)
30–39	52 (86.7)	8 (13.3)	85 (65.4)	45 (34.6)	23 (43.4)	30 (56.6)
40–49	32 (80.0)	8 (20.0)	52 (62.7)	31 (37.3)	31 (45.6)	37 (54.4)
50–59	29 (65.9)	15 (34.1)	81 (77.1)	24 (22.9)	29 (38.2)	47 (61.8)
60+	39 (76.5)	12 (23.5)	32 (74.4)	11 (25.6)	3 (50.0)	3 (50.0)
χ^2(df), p	X ² (4) = 6.548, p = 0.162		X ² (4) = 6.573, p = 0.160		X ² (4) = 1.013, p = 0.908	
Professional Experience						
0–9	43 (82.7)	9 (17.3)	71 (59.7)	48 (40.3)	24 (42.1)	33 (57.9)
10–19	46 (88.5)	6 (11.5)	85 (70.2)	36 (29.8)	23 (46.0)	27 (54.0)
20–29	25 (65.8)	13 (34.2)	52 (72.2)	20 (27.8)	31 (41.3)	44 (58.7)
30–39	33 (71.7)	13 (28.3)	65 (77.4)	19 (22.6)	23 (40.4)	34 (59.6)
40+	27 (69.2)	12 (30.8)	30 (76.9)	9 (23.1)	0 (0.0)	0 (0.0)
χ^2(df), p	X ² (4) = 8. 362, p =0 .074		χ^2 (4) = 9. 212, **p = 0.056**		χ^2 (3) = 0.399, p = 0.941	

Note. Percentages reflect the proportion within each subgroup reporting second victim status. Chi-square tests assessed associations; continuity corrections were applied where df = 1. Due to space constraints, chi-squared values and corresponding percentages may appear misaligned in the table.

4.6.2 Associations Between Area of Practice and Second Victim Status Among Pharmacists

For pharmacists, a **significant association was found between area of practice and second victim experience**, χ^2 (5) = 11.608, p = 0.041 (see Table 4.18). Community pharmacists (38.5%) and hospital pharmacists (44.6%) reported the highest proportions of second victim experiences, while those working in industry (33.3%) and regulatory affairs (30.0%) reported lower prevalence. The "Other" category also showed a notably high percentage (70.4%) of second victim reports.

Table 4.18

Association Between Area of Practice and Second Victim Experience Among Pharmacists

	Second Victim Experience		
Area of Practise	1 Yes	2 No	Total
Industry	3	6	9
Community Pharmacy	42	67	109
Importation and wholesale dealing (including medical representation)	6	12	18
Hospital	25	31	56
Regulatory Affairs	6	14	20
Pharmacists Others	19	8	27
Total	101	138	239

$X^2(5) = 11.608$, p = 0.041

4.6.3 Predictors of Second Victim Status

Table 4.19 presents the results of bootstrapped logistic regression analyses examining demographic and professional predictors of second victim status across medical practitioners, nurses, and pharmacists.

Table 4.19

Bootstrapped Logistic Regression Results for Predictors of Second Victim Status

Bootstrap for Variables in the Equation

Occupation		B	Bias	Std. Error	Sig. (2-tailed)	Bootstrap[a] 95% Confidence Interval Lower	Upper
Medical Practitioners	Nationality	1.089	-0.168[b]	3.294[b]	0.084[b]	-0.934[b]	2.778[b]
	Gender	0.050	0.025[b]	0.373[b]	0.903[b]	-0.646[b]	0.789[b]
	Age	0.242	0.005[b]	0.382[b]	0.528[b]	-.0497[b]	1.021[b]
	Professional Experience (years)	0.057	0.003[b]	0.264[b]	0.845[b]	-0.451[b]	0.567[b]
	Constant	-3.372	0.071[b]	3.448[b]	0.003[b]	-6.579[b]	-0.662[b]
Nurses	Nationality	0.034	-0.018	0.336	0.911	-0.693	0.673
	Gender	-0.338	0.002	0.257	0.186	-0.835	0.165
	Age	**0.539**	0.005	0.193	**0.003**	0.144	0.943
	Professional Experience (years)	**-0.661**	-0.011	0.180	**<0.001**	-1.044	-0.343
	Constant	-0.082	0.024	0.687	0.904	-1.435	1.229
Pharmacists	Nationality	-0.332	-0.015	0.586	0.557	-1.506	0.764
	Gender	-0.529	-0.011	0.303	**0.077**	-1.139	0.029
	Age	0.013	-0.017	0.293	0.966	-0.578	0.560
	Professional Experience (years)	-0.025	0.016	0.287	0.936	-0.568	0.548
	Constant	1.584	0.050	0.956	0.083	-0.137	3.566

Note.a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

b. Based on 999 samples

Logistic regression was used to explore how different factors predicted whether participants identified as second victims. The unstandardised coefficient (B) shows the strength and direction of each effect, while the p-value indicates if it was statistically significant. Bootstrapped 95% confidence intervals were applied to give a more reliable estimate of the true effect; if the interval did not cross zero and the p-value was below 0.05, the result was significant. Bootstrapping improved the robustness of the analysis by resampling the data to produce more stable confidence intervals without relying too heavily on strict statistical assumptions.

Logistic regression showed no significant predictors of SVP among medical practitioners, though nationality was marginally associated (B = 1.089, p = 0.084). For nurses, age was a significant positive predictor (B = 0.539, p = 0.003), while professional experience was a significant negative predictor (B = –0.661, p < 0.001), indicating reduced risk with greater experience. Among pharmacists, no predictors reached significance, although gender showed a near-significant effect (B = –0.529, p = 0.077).

4.6.4 Predictors of Symptom Load

As shown in Table 4.20, professional experience was a significant negative predictor of symptom load among medical practitioners (B = –1.315, p = 0.010), while age showed a near-significant positive effect (B = 1.104, p = 0.060); the model explained 5.9% of the variance (Adjusted R^2 = 0.059). For nurses, no predictors were significant (all p > 0.05), with the model accounting for only 2.0% of the variance (Adjusted R^2 = 0.020). Among pharmacists, non-Maltese nationality (B = 4.589, p =0.009) and female gender (B = 2.496, p = 0.005) were significant positive predictors, with the model explaining 19.1% of the variance (Adjusted R^2 = 0.191).

In this context, **Adjusted R^2** shows how much of the variation in symptom load was explained by the predictors in each model. For example, the pharmacist model (Adjusted R^2 = 0.191) explained about 19% of the variation in symptom severity, while the nurse and medical practitioner models explained far less.

Table 4.20

Bootstrapped Multiple Linear Regression Coefficients Predicting Symptom Load by Profession

Bootstrap for Coefficients

Occupation	Model	B	Bootstrap[a] Bias	Std. Error	Sig. (2-tailed)	95% Confidence Interval Lower	Upper
Medical Practitioners Adjusted R-squared 0.059	(Constant)	8.164	0.142[b]	2.106[b]	0.001[b]	4.479[b]	12.895[b]
	Nationality	-2.021	-0.026[b]	1.497[b]	0.114[b]	-4.820[b]	1.530[b]
	Gender	0.600	-0.053[b]	0.616[b]	0.325[b]	-0.704[b]	1.790[b]
	Age	1.104	0.009[b]	0.591[b]	0.060[b]	0.037[b]	2.327[b]
	Professional Experience (years)	**-1.315**	-0.022[b]	0.467[b]	**0.010[b]**	-2.264[b]	-0.435[b]
Nurses Adjusted R-squared 0.02	(Constant)	9.043	0.062	1.749	<0.001	5.746	12.631
	Nationality	-0.317	-0.042	1.043	0.753	-2.531	1.655
	Gender	0.116	-0.015	0.628	0.857	-1.199	1.252
	Age	-0.067	-0.003	0.510	0.896	-1.048	0.965
	Professional Experience (years)	-0.367	0.004	0.435	0.393	-1.218	0.517
Pharmacists Adjusted R-squared 0.191	(Constant)	-2.750	-0.132	2.849	0.335	-8.408	2.790
	Nationality	**4.589**	0.003	1.643	**0.009**	1.329	7.731
	Gender	**2.496**	-0.015	0.811	**0.005**	0.879	4.027
	Age	-0.627	0.113	0.860	0.437	-2.060	1.400
	Professional Experience (years)	0.717	-0.075	0.834	0.364	-1.076	2.144

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples
b. Based on 988 samples

4.6.5 Summary of Results for Objective 3

Table 4.21 provides a summary of the key findings from Objective 3, consolidating results from chi-square tests, logistic regression, and linear regression analyses across medical practitioners, nurses, and pharmacists.

Table 4.21

Summary of findings for Objective 3

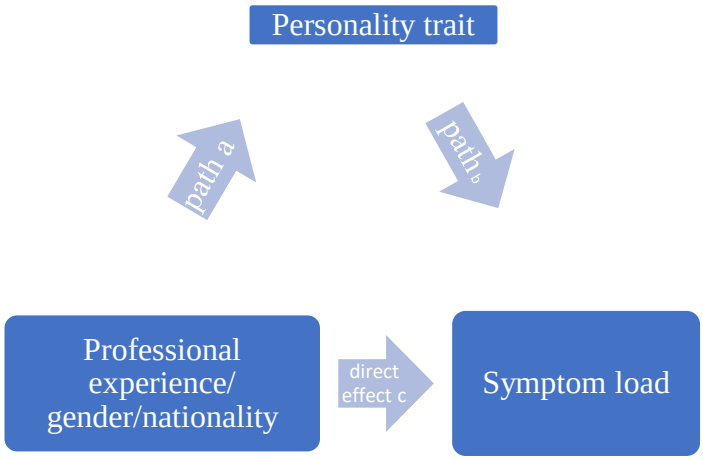
Analysis	Medical Practitioners	Nurses	Pharmacists
Test (SVP Prevalence)	Professional experience approached significance ($\chi^2(4) = 8.36$, $p = 0.074$); Early-career doctors more affected.	Professional experience approached significance ($\chi^2(4) = 9.21$, $p = 0.056$); less experienced nurses more affected.	The area of was significant ($\chi^2(5) = 11.608$, $p = 0.041$); hospital and community sectors had the highest SVP rates.
Logistic Regression (SVP Predictors)	No significant predictors. Nationality approached significance ($B = 1.089$, $p = 0.084$).	Age was a positive predictor ($B = 0.539$, $p = 0.003$); experience was protective ($B = –0.661$, $p < 0.001$).	No significant predictors. Gender approached significance ($B = –0.529$, $p = 0.077$).
Linear Regression (Symptom Severity)	The model explained 5.9% of symptom load (Adj. $R^2 = .059$). Less experience ($B = –1.315$, $p = 0.010$) and older age ($B = 1.104$, $p = 0.060$) predicted distress.	The model explained 2.0% of symptom load (Adj. $R^2 = 0.020$). No significant predictors.	Model explained 19.1% of symptom load (Adj. $R^2 = .191$). Non-Maltese ($B = 4.589$, $p = 0.009$) and female pharmacists ($B = 2.496$, $p = 0.005$) reported significantly higher load.

4.7 Objective 4: Examining the Impact of Personality Traits on Symptom Risk and Symptom Severity

To address Objective 4, binary logistic regression was applied to test whether the Big Five personality traits predicted second victim status, both independently and when controlling for demographics. Spearman's rank-order correlations were then used to examine associations between demographics, personality traits, and symptom load. The relationship between personality traits and symptom load was further analysed through bootstrapped multiple linear regression, followed by simple mediation (Figure 4.2) and parallel mediation models (Figure 4.3).

Figure 4.2

Simple Mediation Model Illustrating the Role of Personality Traits in Predicting Symptom Load

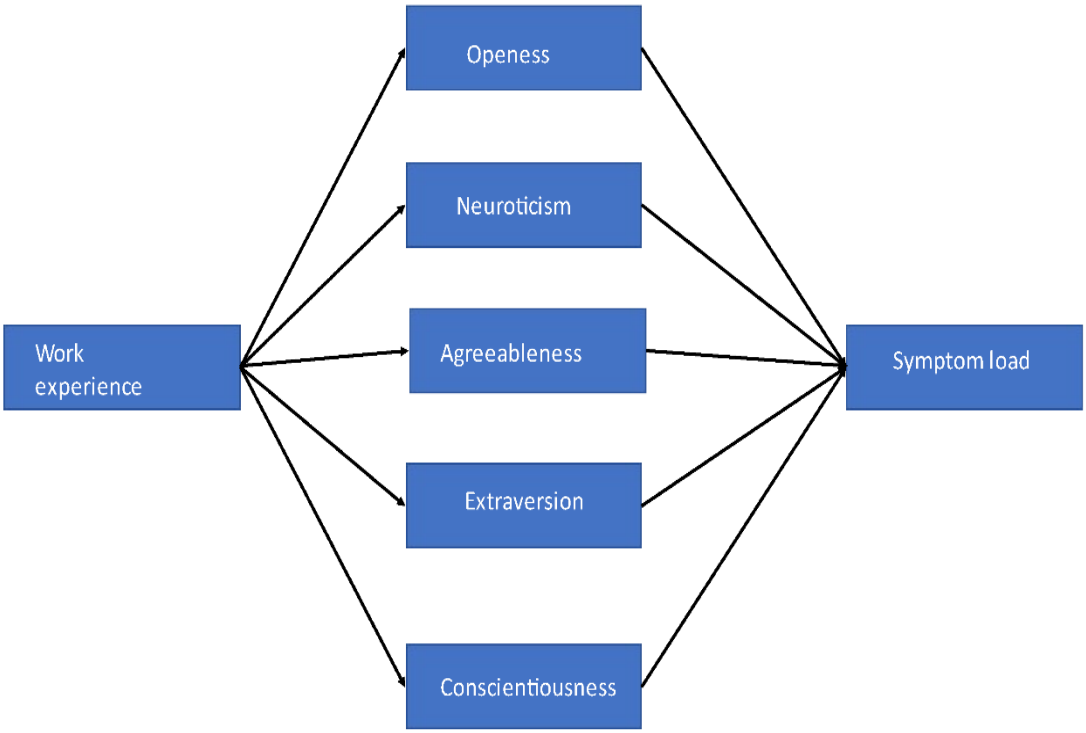


Note: Simple mediation occurs when the effect of one variable on an outcome is explained, at least in part, through a third variable known as the mediator. For each mediation model, the a-path tested whether the demographic variable predicted the

personality trait (mediator), the b-path tested whether the mediator predicted symptom load, and the indirect effect (a × b) assessed mediation.

Figure 4.3

Parallel mediation model testing the indirect effect of work experience on symptom load via the Big Five personality traits.



Note: A **parallel mediation model** tests whether several mediators (in this case, personality traits) **simultaneously explain** the relationship between an independent variable (*work experience*) and a dependent variable (*symptom load*). Each mediator is considered at the same time, and the model estimates how much of the effect of *work experience* on *symptom load* goes through each personality trait **independently of the others**. *Reprinted* from Potura et al. (2024).

4.7.1 Impact of personality traits on symptom risk

Table 4.22 summarises the **bootstrapped logistic regression results** testing whether **personality traits (Big Five)** predicted **second victim status** among medical practitioners, nurses, and pharmacists.

Table 4.22

Personality Traits as Predictors of Second Victim Status by Profession

Bootstrap for Variables in the Equation

			Bootstrap[a]				
						95% Confidence Interval	
Occupation	Occupation	B	Bias	Std. Error	Sig. 2-tailed	Lower	Upper
Medical Practitioners	Extraversion	-0.035	-0.014	0.151	0.820	-0.325	0.248
	Agreeableness	0.182	0.002	0.155	0.209	-0.109	0.497
	Conscientiousness	-0.058	0.004	0.198	0.755	-0.455	0.310
	Neuroticism	0.161	0.004	0.159	0.266	-0.156	0.473
	Openness	-0.160	-0.007	0.126	0.183	-0.417	0.085
	Constant	-1.951	0.029	1.843	0.223	-5.461	1.478
Nurses	Extraversion	-0.032	0.003	0.105	0.737	-0.235	0.182
	Agreeableness	0.076	-0.002	0.088	0.367	-0.101	0.251
	Conscientiousness	-0.074	-0.001	0.091	0.393	-0.240	0.097
	Neuroticism	-0.070	0.000	0.067	0.259	-0.210	0.065
	Openness	-0.067	-0.007	0.084	0.380	-0.260	0.096
	Constant	0.306	0.011	1.248	0.777	-2.164	2.822
Pharmacists	Extraversion	0.075	0.002	0.079	0.316	-0.071	0.239
	Agreeableness	-0.017	-0.003	0.094	0.849	-0.202	0.165
	Conscientousness	-0.100	-0.007	0.112	0.327	-0.339	0.109
	Neuroticism	-0.003	-0.005	0.091	0.978	-0.183	0.173
	Openness	0.076	0.002	0.096	0.393	-0.102	0.285
	Constant	0.515	0.109	1.565	0.734	-2.312	3.809

Note. a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

As shown in Table 4.22, none of the Big Five personality traits significantly predicted second victim status across the three professions. Among medical practitioners, agreeableness (B = 0.182, p = 0.209) and neuroticism (B = 0.161, p = 0.266) showed

small, non-significant positive associations. For nurses, all traits were non-significant, with neuroticism trending slightly negative (B = –0.070, p = 0.259). Among pharmacists, no associations were found, including for neuroticism (B = –0.003, p = 0.978). When personality traits were added to logistic regression models alongside demographic and work-related factors, results remained unchanged (see Table 4.23). The only significant predictor was professional experience among nurses (B = –0.723, p = 0.002), indicating a protective effect, while personality traits did not alter the previously observed patterns.

Table 4.23

Bootstrapped Logistic Regression Results for Demographics and Personality Predictors of Second Victim Status by Profession

Bootstrap for Variables in the Equation

			Bootstrap[a]				
						BCa 95% Confidence Interval	
Occupation		B	Bias	Std. Error	Sig. (2-tailed)	Lower	Upper
Medical Practitioner	Nationality	-0.059	-6.083[b]	10.297[b]	0.629[b]	-21.173[b]	3.050[b]
	Gender	0.699	0.126[b]	0.540[b]	0.136[b]	-0.419[b]	2.479[b]
	Age	-0.074	0.049[b]	0.544[b]	0.874[b]	-1.245[b]	1.216[b]
	Professional Experience (years)	0.530	0.047[b]	0.393[b]	0.118[b]	-0.241[b]	1.593[b]
	Extraversion	-0.088	-0.010[b]	0.172[b]	0.573[b]	-0.414[b]	0.201[b]
	Agreeableness	0.202	0.041[b]	0.184[b]	0.203[b]	-0.133[b]	0.743[b]
	Conscientiousness	-0.039	-0.031[b]	0.242[b]	0.837[b]	-0.531[b]	0.322[b]
	Neuroticism	0.235	0.048[b]	0.197[b]	0.163[b]	-0.137[b]	0.888[b]
	Openness	-0.124	0.006[b]	0.150[b]	0.351[b]	-0.446[b]	0.191[b]
	Constant	-4.877	5.137[b]	10.351[b]	0.049[b]	-18.694[b]	18.569[b]
Nurses	Nationality	0.572	0.045	0.553	0.270	-0.675	1.889
	Gender	-0.509	-0.009	0.334	0.101	-1.118	0.066
	Age	0.529	0.029	0.272	0.038	-0.064	1.199
	Professional Experience (years)	**-0.723**	-0.033	0.250	**0.002**	-1.174	-0.383
	Extraversion	-0.021	0.001	0.108	0.856	-0.226	0.189

	Agreeableness	0.104	0.007	0.101	0.265	-0.095	0.336
	Conscientiousness	-0.035	-0.001	0.107	0.731	-0.251	0.175
	Neuroticism	-0.030	0.001	0.075	0.662	-0.185	0.118
	Openness	-0.069	-0.007	0.094	0.409	-0.247	0.087
	Constant	0.084	-0.078	1.802	0.953	-3.325	3.324
Pharmacist	Nationality	-0.797	-0.037	1.026	0.228	-2.232	0.512
	Gender	-0.578	-0.064	0.410	0.133	-1.344	0.012
	Age	-0.084	-0.033	0.385	0.805	-0.809	0.556
	Professional Experience (years)	.0097	0.035	0.371	0.776	-0.717	0.970
	Extraversion	0.075	0.008	0.085	0.337	-0.099	0.264
	Agreeableness	-0.007	0.000	0.101	0.940	-0.206	0.190
	Conscientiousness	-0.068	0.009	0.130	0.597	-0.347	0.223
	Neuroticism	0.006	0.005	0.095	0.938	-0.192	0.223
	Openness	0.044	-0.004	0.103	0.637	-0.172	0.237
	Constant	2.138	0.052	2.150	0.248	-1.601	6.632

*Note.*a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples
b. Based on 992 samples

Positive (B > 0)	A positive B means that as the predictor increases, the odds of the outcome occurring also increase. For example, if gender (coded 1 = female, 0 = male) has a positive B, being female would be associated with higher odds of second victim status compared to males.
Negative (B < 0)	A negative B means that as the predictor increases, the odds of the outcome decrease. For example, if years of experience has a negative B, more experience would be associated with lower odds of being a second victim.

4.7.2 Impact of personality traits on symptom load by profession

This section outlines the role of the Big Five personality traits in predicting symptom load and their potential mediating effects on demographic and workplace factors. Four statistical approaches were employed: correlation analyses, multiple linear regression, simple mediation, and parallel mediation. The main results are summarised in Table 4.24, while full statistical outputs are provided in **Appendix F (Tables F1–F12)**.

Correlation analyses (Appendix F, Tables F1–F3). Professional experience correlated negatively with symptom load across all professions. Among nurses, neuroticism was positive ($\rho = 0.358$, $p < 0.01$), while conscientiousness ($\rho = –0.212$, $p < 0.01$) and experience ($\rho = –0.148$, $p < 0.05$) were negative. For medical

practitioners ($\rho = -0.234$, $p < 0.05$) and pharmacists ($\rho = -0.234$, $p < 0.05$), only experience was significant.

Regression analyses (Appendix F, Table F4). For medical practitioners, openness ($p = 0.006$) and lower neuroticism ($p = 0.036$) predicted higher symptom load, while experience was protective ($p = 0.001$). Among nurses, neuroticism increased load ($p = 0.001$), with conscientiousness marginally protective ($p = 0.058$). For pharmacists, neuroticism ($p = 0.031$), female gender ($p = 0.026$), and non-Maltese nationality ($p = 0.003$) predicted higher load.

Simple mediation (Appendix F, Tables F5–F8). No significant indirect effects were found. Direct effects emerged for professional experience in medical practitioners and nurses, and for nationality among pharmacists.

Parallel mediation (Appendix F, Tables F9–F12). No significant indirect effects emerged, except a small effect of neuroticism among medical practitioners; demographic variables mainly showed direct effects on symptom load.

Table 4.24 summarises the main associations between the Big Five traits and both second victim status and symptom load across professions, highlighting significant p-values.

Table 4.24

Summary of Big Five Personality Traits and Second Victim Outcomes Across Professions

Personality Trait	Medical Practitioners	Nurses	Pharmacists

Extraversion	No significant association with second victim status or symptom load; no mediation effects.	No significant association with second victim status or symptom load; no mediation effects.	No significant association with second victim status or symptom load; no mediation effects.
Agreeableness	No significant association with second victim status or symptom load; no mediation effects.	No significant association with second victim status or symptom load. Some significant b-paths (e.g., to symptom load) but no indirect effects (e.g., b-path $p \approx 0.044–.045$; no mediation).	No significant association with second victim status or symptom load. Gender/nationality linked to Agreeableness in some models (e.g., gender $p = 0.038$), but no mediation effects.
Conscientiousness	No significant association with second victim status or symptom load; no mediation effects.	No association with second victim status. Modest negative link with symptom load suggested (regression trend $p = 0.058$; not significant). Some significant b-paths (e.g., $p = 0.004–0.014$) but no indirect effects.	No significant association with second victim status or symptom load. Gender linked to Conscientiousness ($p = 0.011$), but no mediation effects.
Neuroticism	No association with SV status. Negative predictor of symptom load in regression ($p = 0.036$). Small indirect effect of professional experience → neuroticism →	No association with SV status. Strong positive predictor of symptom load ($p = 0.001$). Significant b-paths (all $p < 0.001$), but no mediation.	No association with SV status. Positive predictor of symptom load ($p = 0.031$). Significant b-paths with demographic predictors (experience $p = 0.007$, gender $p = 0.011$,

	symptom load in parallel mediation (p = 0.032), but total indirect not significant.		nationality p = 0.006), but no mediation.
Openness	No association with SV status. Positive predictor of symptom load in regression (p = 0.006). No mediation effects.	No association with SV status or symptom load. Gender linked to Openness (p = 0.011), but no mediation.	No association with SV status or symptom load. Experience linked to Openness (p = 0.042), but no mediation.

Note: (significant p-values shown)

Across professions, no Big Five trait predicted second victim status. For symptom load, Neuroticism increased symptoms in nurses (p = 0.001) and pharmacists (p = 0.031), whereas, openness increased symptoms only in medical practitioners (p = 0.006). In medical practitioners, neuroticism was inversely related to symptoms (p = 0.036) with a small indirect path via experience (p = 0.032). Although several b-paths were significant, no personality trait mediated the effects of demographic variables on either second victim status or symptom load.

4.8 Objective 5: Availability and Perceived Effectiveness of Support Systems

Objective 5 explored healthcare professionals' awareness, use, and perceived helpfulness of institutional and peer support systems following adverse events. To compare perceptions between second victims and non-victims, the Mann–Whitney U test was conducted following normality assessment using the Kolmogorov–Smirnov and Shapiro–Wilk tests. Detailed results of the normality tests, including Q–Q plots and histogram distributions, are presented in Annex F (Tables F10–F12; Figs. 1a–7b). This non-parametric test relies on ranked data, and medians were reported alongside means and standard deviations to allow comparison with international studies such as the SeViD series (Potura et al., 2024a, 2024b). Within this framework, the **U statistic**

reflects the test value derived from ranks, the **Z score** provides a standardised measure for larger samples, and the **p-value** indicates whether group differences were statistically significant. Support measures were rated on a five-point Likert scale, where lower scores corresponded to greater perceived helpfulness (1 = very helpful, 5 = not helpful at all).

4.8.1 Descriptive statistics about the support received after an adverse event

As shown in Table 4.25, and Figures 4.4-4.6, responses to whether support was received following a second victim event varied across all three professional groups.

Table 4.25

Proportion of Medical Practitioners, Nurses, and Pharmacists Who Received, Sought, or Did Not Seek Support After a Second Victim Incident

Profession	% Received Support	% Asked but Received No Help	% Did Not Ask
Medical Practitioners	30.6%	3.7%	65.7%
Nurses	45.9%	11.0%	43.1%
Pharmacists (est.)	~36–38%	~8–9%	~55–57%

Figure 4.4 shows that among medical practitioners (n = 134), 41 (30.6%) reported receiving support, 5 (3.7%) sought help but did not receive it, and 88 (65.7%) had not asked anyone for help**.**

Fig.4.4

Reported Support Received by Medical Practitioners Following an Adverse Event

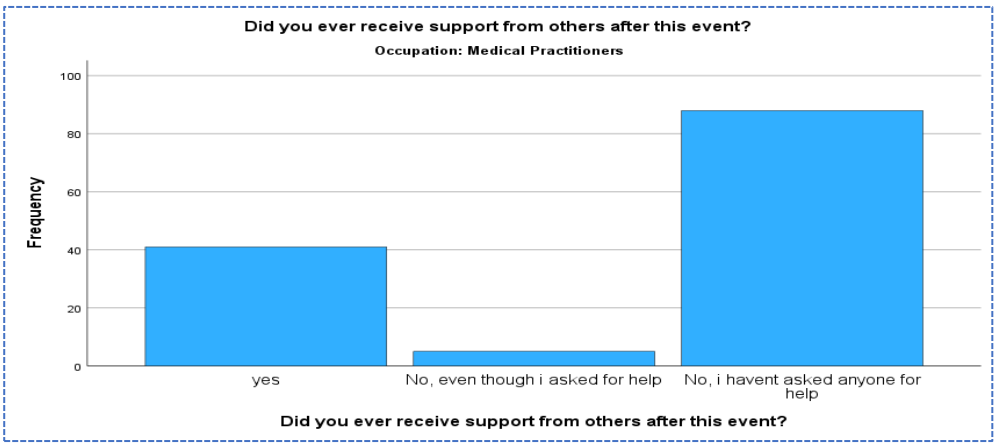


Figure 4.5 shows that among nurses (N = 209), 96 (45.9%) reported receiving support, 23 (11.0%) sought but did not receive it, and 90 (43.1%) had not asked for help.

Fig.4.5

Reported Support Received by Nurses Following an Adverse Event

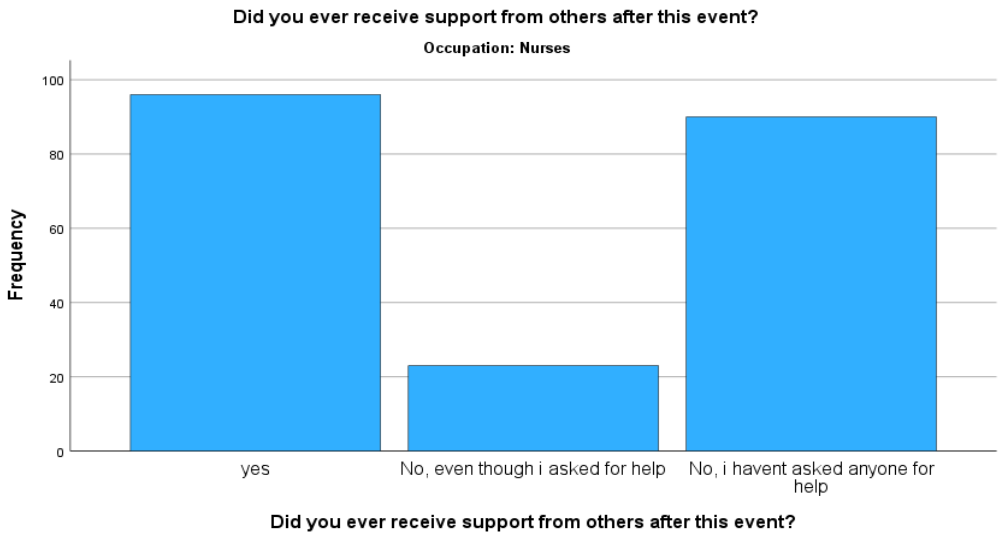
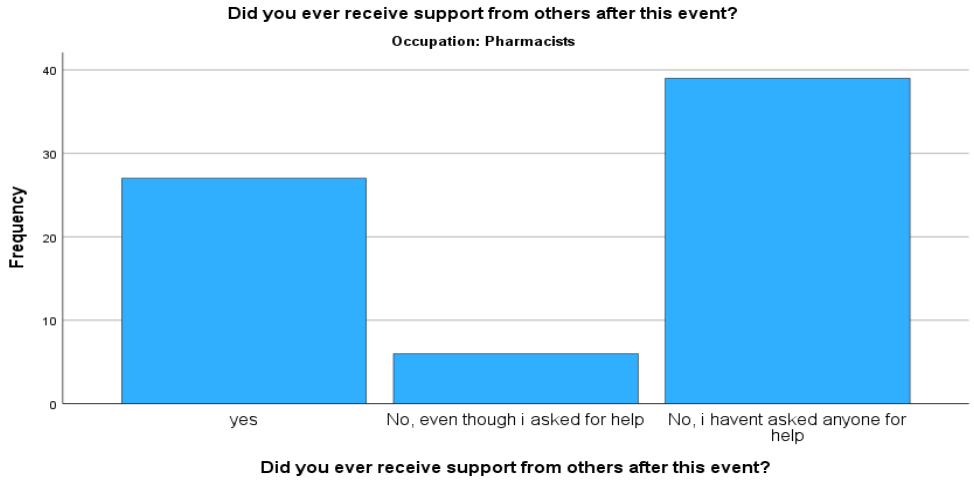


Figure 4.6 shows that in the pharmacist group (n = 72), 26 individuals (36.1%) reported receiving support, 6 (8.3%) had sought help but did not receive it, and 40 (55.6%) had not asked for support.

Figure 4.6

Reported Support Received by Pharmacists Following an Adverse Event



As shown in Table 4.26 and Figure 4.7, colleagues were the most common source of support among medical practitioners who received help (n = 64), with 54.7% (n = 35) turning to colleagues, 20.3% (n = 13) to family or friends, and 17.2% (n = 11) to superiors. Fewer participants reported support from psychological or pastoral services (6.3%, n = 4), and only 1 (1.6%) sought help from management.

Figure 4.7

Pie chart to represent different types of support received by medical practitioners

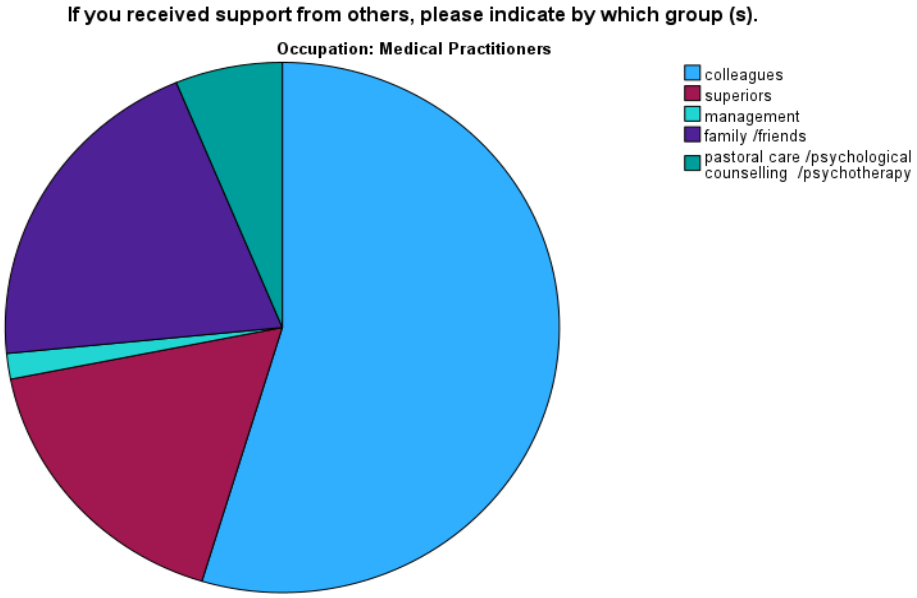


Figure 4.8 shows that among nurses who received support (n = 132), 69 (52.3%) turned to colleagues, 22 (16.7%) to family or friends, 18 (13.6%) to management, and 12 (9.1%) to superiors. Support from psychological or pastoral services was reported by 9 (6.8%), while 2 (1.5%) mentioned other sources.

Figure 4.8

Pie chart to represent different types of support received by nurses

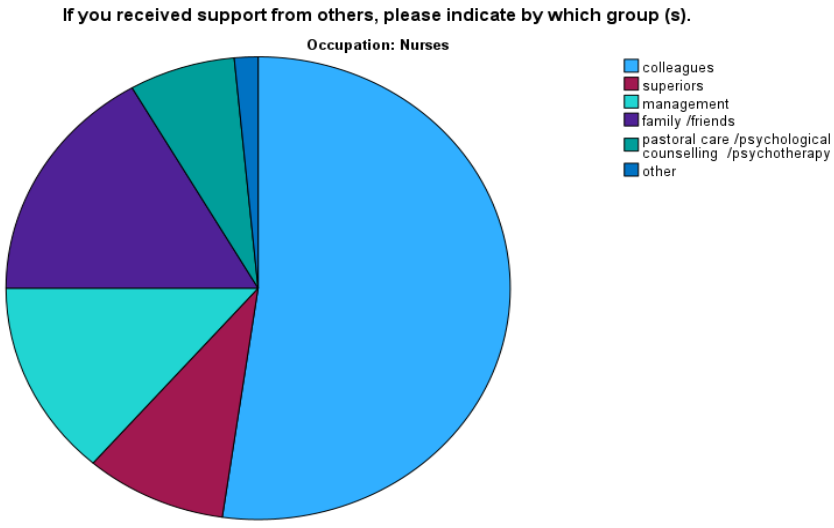


Figure 4.9 shows that among pharmacists who received support (n = 36), 13 (36.1%) turned to colleagues, 8 (22.2%) to management, 7 (19.4%) each to family or friends and psychological or pastoral services, and only 1 (2.8%) to a superior.

Figure 4.9

Pie chart to represent different types of support received by Pharmacists

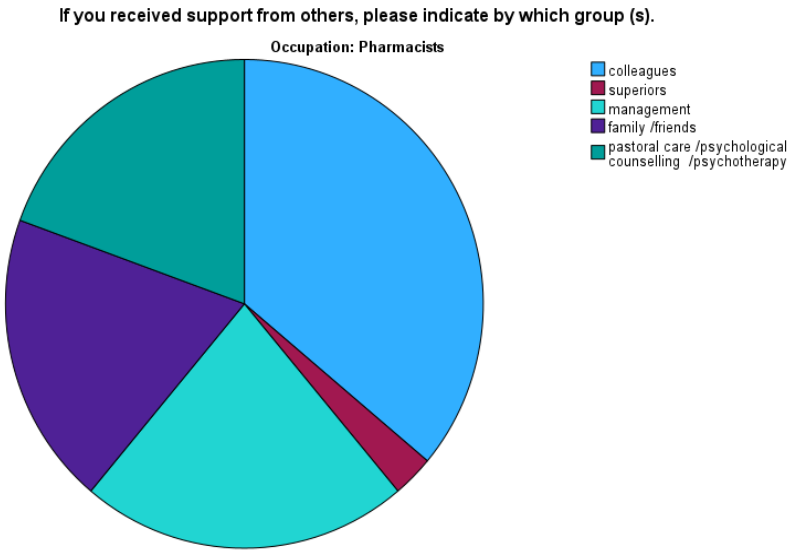


Table 4.26

Sources of Support Received Following a Second Victim Event by Profession

Occupation		Frequency	Percent	Valid Percent	Cumulative Percent
Medical Practitioners	1 Colleagues	35	15.6	54.7	54.7
	2 Superiors	11	4.9	17.2	71.9
	3 Management	1	.4	1.6	73.4
	4 Family /friends	13	5.8	20.3	93.8
	5 Pastoral care /psychological counselling /psychotherapy	4	1.8	6.3	100.0
	Total	64	28.6	100.0	
	Missing System	160	71.4		
	Total	224	100.0		
Nurses	1 Colleagues	69	15.8	52.3	52.3
	2 Superiors	12	2.7	9.1	61.4
	3 Management	18	4.1	13.6	75.0
	4 Family /friends	22	5.0	16.7	91.7
	5 Pastoral care /psychological counselling /psychotherapy	9	2.1	6.8	98.5
	6 Other	2	.5	1.5	100.0
	Total	132	30.2	100.0	
	Missing System	305	69.8		
	Total	437	100.0		
Pharmacists	1 Colleagues	13	5.4	36.1	36.1
	2 Superiors	1	.4	2.8	38.9
	3 Management	8	3.3	22.2	61.1
	4 Family /friends	7	2.9	19.4	80.6
	5 Pastoral care /psychological counselling /psychotherapy	7	2.9	19.4	100.0
	Total	36	15.1	100.0	
	Missing System	203	84.9		
	Total	239	100.0		

4.8.2 Comparison of perceived support between Second Victims and Non-Second Victims for the different professions

4.8.2.1 Perceived Helpfulness of Support Measures (Medical Practitioners)

Normality of the perceived helpfulness scores for support measures was assessed using the Kolmogorov–Smirnov and Shapiro–Wilk tests. Since both tests yielded *p* values below 0.001, the data were determined to be non-normally distributed. Consequently, non-parametric analyses were employed. As presented in Table 4.27, the Mann–Whitney U test was applied as a non-parametric alternative to the *t*-test to compare support measure ratings between second victims and non-second victims. Results are presented with sample sizes, means, medians, and standard deviations, alongside U, Z, and p-values to indicate whether differences were statistically significant. Support was rated on a five-point Likert scale, where lower scores reflected greater perceived helpfulness.

Table 4.27

Comparison of Support Measure Ratings Between Second Victim and Non-Second Victim Medical Practitioners

	N in the whole sample	Mean in the whole sample	Median in the whole sample	Std. Deviation in the whole sample	N among SVs	M_1 among SVs	$Median_1$ among SVs	SD_1among SVs	N among non SVs	M_2 among non SVs	$Median_{2\ a}$among non SVs	SD_2 among nonSVs	Mann–Whitney U statistic	Z score	p
Q17a	168	2.23	3.00	1.316	132	2.27	2.00	1.326	36	1.91	1.00	1.215	2065	-1.260	0.208
Q17b	168	1.98	2.00	1.049	132	1.98	2.00	1.015	36	1.85	2.00	1.048	2109	-1.099	0.272
Q17c	168	1.79	2.00	0.942	132	1.73	2.00	0.920	36	1.88	2.00	0.946	2113	-1.110	0.267
Q17d	167	1.74	2.00	0.975	131	1.73	1.00	1.023	36	1.68	2.00	0.768	2311	-0.201	0.841
Q17e	167	2.11	3.00	1.041	131	2.13	2.00	1.065	36	1.97	2.00	1.000	2253	-0.434	0.664
Q17f	166	1.95	2.00	1.069	131	1.91	2.00	1.072	35	1.94	2.00	0.098	2156	-0.579	0.562
Q17g	167	1.94	2.00	1.096	131	2.01	2.00	1.160	36	1.65	1.00	0.812	2074	-1.178	0.239
Q17h	166	2.11	3.00	1.128	130	2.12	2.00	1.161	36	2.00	2.00	1.044	2308	-0.132	0.895
Q17i	165	2.31	3.00	1.281	129	2.37	2.00	1.315	36	2.06	2.00	1.179	2096	-0.931	0.352
Q17j	167	1.93	2.00	1.093	131	1.98	2.00	1.146	36	1.74	2.00	0.751	2325.	-0.137	0.891
Q17k	166	1.95	2.00	1.014	131	1.98	2.00	1.068	35	1.82	2.00	0.834	2232	-0.256	0.798
Q17l	167	1.79	2.00	0.956	131	1.78	1.50	1.011	36	1.79	2.00	0.729	2040	-1.345	0.178
Q17 m	167	1.66	2.00	0.974	131	1.67	1.00	1.036	36	1.62	1.00	0.779	2205	-0.673	0.501

Note: Key. Support measures Q17a were coded as follows: = Time off work; Q17b = Counselling/psychological support; Q17c = Emotional/ethical discussion; Q17d = Clear information on course of action; Q17e = Formal collegial support; Q17f = Informal support; Q17g = Quick crisis intervention; Q17h = Mentoring when continuing patient care; Q17i = Support in patient/relative communication; Q17j =

Guidelines on role during event; Q17k = Active role in event processing; Q17l = Opportunity to suggest prevention measures; Q17m = Legal consultation.

As shown in Table 4.27, medical practitioners rated legal consultation (M = 1.66, SD = 0.97), clear institutional information (M = 1.74, SD = 0.98), and emotional or ethical discussion (M = 1.79, SD = 0.94) as the most helpful strategies. No significant differences were found between second victims (n = 132) and non-second victims (n = 36) across all 13 support measures (all $p > .05$). Mann–Whitney U tests confirmed this: time off work ($U = 2065.00$, $Z = –1.26$, $p = 0.208$), legal consultation ($U = 2205.00$, $Z = –0.67$, $p = 0.501$), crisis intervention ($U = 2074.50$, $Z = –1.18$, $p = 0.239$), emotional discussion ($U = 2113.00$, $Z = –1.11$, $p = 0.267$), and informal support ($U = 2156.00$, $Z = –0.58$, $p = 0.562$). Although none of the results were statistically significant, non-second victims tended to give lower scores for practical support measures, while second victims rated emotional and peer-based strategies more favourably. Overall, both groups considered institutional and peer support options moderately helpful, with legal consultation and clear communication rated most positively.

4.8.2.2 Perceived Helpfulness of Support Measures (Nurses)

As shown in Table 4.28, nurses rated emotional or ethical discussion (M = 1.81, SD = 1.13), clear institutional information (M = 1.91, SD = 1.11), and both formal and informal collegial support (M = 1.91, SD = 1.08) as the most helpful measures. Significant differences between second victims (n = 199) and non-second victims (n = 92) emerged for seven measures: emotional or ethical discussion ($U = 7780.50$, $p = 0.023$), institutional information ($U = 7561.00$, $p = 0.023$), formal support ($U = 7354.50$, $p = 0.006$), informal support ($U = 6889.00$, $p < 0.001$), crisis intervention (U

= 7422.50, p = 0.008), role clarity (U = 7662.00, p = 0.030), and preventive feedback (U = 7285.50, p =0.004). Across these, second victims consistently reported lower mean scores, reflecting greater perceived helpfulness. For instance, informal support was rated M = 1.76 (SD = 1.00) by second victims compared to M = 2.23 (SD = 1.16) by non-second victims. No significant differences were found for professional counselling, time off, legal consultation, or patient communication support (all p > 0.05).

Table 4.28

Comparison of Support Measure Ratings Between Second Victim and Non-Second Victim Nurses

	N in the whole sample	Mean in the whole sample	Median in the whole sample	St Deviation in whole sample	N among SVs	M_1 among SVs	$Median_1$ among SVs	SD_1among SVs	N among non SVs	M_2 among non SVs	$Median_2$ among non SVs	SD_2 among nonSVs	Mann–Whitney U statistic	Z score	p
Q17a	291	2.15	3.00	1.326	199	2.09	2.00	1.313	92	2.23	2.00	1.282	8456	-1.106	0.269
Q17b	290	2.03	3.00	1.337	199	2.01	1.00	1.332	91	2.07	1.00	1.354	8844	-0.344	0.731
Q17c	291	1.81	2.00	1.133	199	1.69	1.00	1.034	92	2.07	2.00	1.283	7780	-2.268	**0.023**
Q17d	289	1.91	2.00	1.114	199	1.82	1.00	1.097	90	2.08	2.00	1.133	7561	-2.276	**0.023**
Q17e	290	1.91	2.00	1.083	199	1.80	2.00	1.038	91	2.15	2.00	1.136	7354	-2.749	**0.006**
Q17f	290	1.91	2.00	1.078	199	1.76	1.00	1.004	91	2.23	2.00	1.158	6889	-3.508	**<0.001**
Q17g	290	1.95	2.00	1.194	199	1.82	1.00	1.152	91	2.16	2.00	1.200	7422	-2.652	**0.008**
Q17h	289	2.21	3.00	1.195	199	2.15	2.00	1.204	90	2.32	2.00	1.176	8118	-1.329	0.184
Q17i	290	2.23	3.00	1.240	199	2.22	2.00	1.247	91	2.23	2.00	1.227	8942	-0.176	0.860
Q17j	289	2.02	3.00	1.191	198	1.94	2.00	1.176	91	2.18	2.00	1.186	7662	-2.169	**0.030**
Q17k	289	2.02	2.00	1.150	199	1.96	2.00	1.161	90	2.13	2.00	1.119	7899	-1.708	0.088
Q17l	289	1.89	2.00	1.193	198	1.78	1.00	1.160	91	2.13	2.00	1.228	7285	-2.850	**0.004**
Q17m	288	1.94	3.00	1.176	198	1.88	1.00	1.133	90	2.10	2.00	1.267	8157	-1.241	0.215

Note. Key.Support measures were coded as follows: Q17a = Time off work; Q17b = Counselling/psychological support; Q17c = Emotional/ethical discussion; Q17d = Clear information on course of action; Q17e = Formal collegial support; Q17f = Informal support; Q17g = Quick crisis intervention; Q17h = Mentoring when continuing patient care; Q17i = Support in patient/relative communication; Q17j = Guidelines on role during event; Q17k = Active role in event processing; Q17l = Opportunity to suggest prevention measures; Q17m = Legal consultation.

4.8.2.3 Perceived Helpfulness of Support Measures (Pharmacists)

As shown in Table 4.29, pharmacists rated legal consultation (M = 1.67, SD = 1.15), preventive feedback (M = 1.70, SD = 1.07), and clear institutional information (M = 1.74, SD = 1.07) as the most helpful support measures. Mann–Whitney U tests identified two significant differences: non-second victims (n = 107) rated time off work as more helpful (M = 1.86, SD = 1.17) than second victims (n = 70; M = 2.24, SD = 1.15), U = 3010.50, Z = –3.10, p = 0.002, and also rated institutional information more positively (M = 1.61, SD = 1.00) compared to second victims (M = 1.93, SD = 1.16), U = 3279.00, Z = –2.28, p = 0.022. No other measures differed significantly (all $p > 0.05$). Overall, pharmacists perceived support as moderately helpful, with non-second victims valuing time off and institutional clarity more strongly.

Table 4.29

Comparison of Support Measure Ratings Between Second Victim and Non-Second Victim Pharmacists

	N in the whole sample	Mean in the whole sample	Median in the whole sample	Std. Deviation in the whole sample	N among SVs	M_1 among SVs	$Median_1$ among SVs	SD_1among SVs	N among non SVs	M_2 among non SVs	$Median_2$ among non SVs	SD_2 among nonSVs	Mann–Whitney U statistic	Z score	p
Q17a	177	1.99	2.00	1.17	70	2.24	2.00	1.15	107	1.86	1.0	1.17	3010	-3.10	0.002
Q17b	177	1.66	2.00	1.02	70	1.71	1.00	0.98	107	1.63	1.0	1.05	3565	-1.40	0.162
Q17c	177	1.67	2.00	1.03	70	1.53	1.00	0.79	107	1.74	1.00	1.14	3832	-0.64	0.521
Q17d	177	1.74	2.00	1.07	70	1.93	2.00	1.16	107	1.61	1.00	0.99	3279	-2.28	0.022
Q17e	177	2.06	2.00	1.29	70	2.07	2.00	1.27	107	2.04	2.00	1.29	3950	-0.25	0.803
Q17f	177	2.01	2.00	1.22	70	1.83	1.50	1.14	107	2.12	2.00	1.27	3447	-1.68	0.101
Q17g	177	1.88	2.00	1.20	70	1.99	2.00	1.25	107	1.81	1.00	1.16	3541	-1.43	0.154
Q17h	177	1.98	2.00	1.17	70	2.01	2.00	1.14	107	1.97	2.00	1.20	3753	-0.86	0.392
Q17i	177	2.03	2.00	1.23	70	2.06	2.00	1.26	107	1.99	2.00	1.20	3927	-0.32	0.749
Q17j	177	1.82	2.00	1.16	70	1.93	1.50	1.24	107	1.74	1.00	1.09	3677	-0.84	0.400
Q17k	177	1.87	2.00	1.11	70	1.97	2.00	1.17	107	1.83	2.00	1.09	3751	-0.70	0.483
Q17l	177	1.70	2.00	1.07	70	1.64	1.00	1.01	107	1.74	1.00	1.13	3904	-0.30	0.768
Q17m	177	1.67	2.00	1.15	70	1.76	1.00	1.15	107	1.60	1.00	1.12	3600	-1.45	0.147

Note. Key. Support measures were coded as follows: Q17a = Time off work; Q17b = Counselling/psychological support; Q17c = Emotional/ethical discussion; Q17d = Clear information on course of action; Q17e = Formal collegial support; Q17f = Informal support; Q17g = Quick crisis intervention; Q17h = Mentoring when continuing patient care; Q17i = Support in patient/relative communication; Q17j = Guidelines on role during event; Q17k = Active role in event processing; Q17l = Opportunity to suggest prevention measures; Q17m = Legal consultation.

4.8.3 Summary of Support Measure Ratings by Profession

As summarised in Table 4.30, no statistically significant differences were found between second victims and non-second victims among medical practitioners, though some small trends were noted. In contrast, nurses with second victim experience rated seven support measures, particularly those related to emotional, procedural, and peer support, as significantly more helpful ($p < 0.05$). Among pharmacists, non-second victims rated two support methods, time off work and clear post-event information, as significantly more helpful than their second victim counterparts.

TABLE 4. 30
Support Measure Ratings Between Second Victims and Non-Second Victim by Profession, which were statistically significant

Support Measure	*Profession*	*SVs M (SD)*	*Non-SVs M (SD)*	*p-value*
The possibility of taking time off from work	Pharmacists	2.24 (1.15)	1.86 (1.17)	0.002
Clear and timely post-event information	Nurses	1.82 (1.10)	2.08 (1.13)	0.023
	Pharmacists	1.93 (1.16)	1.61 (1.00)	0.022
The possibility of discussing emotional or ethical thoughts	Nurses	1.69 (1.03)	2.07 (1.28)	0.023
Formal collegial emotional support	Nurses	1.80 (1.04)	2.15 (1.14)	0.006
Informal emotional support	Nurses	1.76 (1.00)	2.23 (1.16)	<0.001
Quick crisis intervention (individual or team)	Nurses	1.82 (1.15)	2.16 (1.20)	0.008
Guidelines on the role during serious events	Nurses	1.94 (1.18)	2.18 (1.19)	0.030
Opportunity to provide preventive feedback	Nurses	1.78 (1.16)	2.13 (1.23)	0.004

Note. M = Mean; SD = Standard Deviation. Support items were rated using a four-point descending Likert scale, where 1 = very helpful and 5 = not helpful at all. Lower scores indicate greater perceived helpfulness.

4.9 Objective 6: Support Strategies Across Professions

This section examines differences in perceived support measures across professions, comparing participants who identified as second victims (Table 4.31) with those who did not (Table 4.32). Support measures were rated on a descending Likert scale (1 = very helpful, 5 = not helpful at all), meaning lower mean scores indicated greater perceived helpfulness. Normality testing was conducted to determine whether the data followed a normal distribution. Detailed results are provided in Annex F (Tables F13–F14). As all *p* values were below 0.001, the data were classified as non-normally distributed. Accordingly, the Kruskal–Wallis test was employed, which compares mean ranks across professions rather than using raw means. While raw means show the average score given, mean ranks reflect how each group's responses compare in order, making them more suitable for ordinal Likert data. Lower mean ranks therefore indicate that a group rated the support measures as more important relative to the others (Field, 2018)

4.9.1 Support Ratings Among Second Victims Across Professions.

Table 4.31

Perceived Support Among Second Victims Across Professions

Question	Medical Practitioners (N / Mean Rank)	Nurses) (N / Mean Rank)	Pharmacists (N / Mean Rank)	Kruskal-Wallis H / p
Q17a	132/211.44	199/190.72	72/215.85	4.15 / 0.126
Q17b	132/217.64	199/198.12	72/184.06	4.97 / 0.083
Q17c	132/214.67	199/198.63	72/188.08	3.43 / 0.180
Q17d	131/196.29	199/201.06	72/212.19	1.04 / 0.594
Q17e	131/225.13	199/184.28	72/206.10	11.31 / 0.003
Q17f	131/212.31	199/194.58	71/198.13	2.25 / 0.325
Q17g	131/212.81	199/191.52	72/208.51	3.46 / 0.177
Q17h	130/202.29	199/203.37	72/192.11	0.58 / 0.747
Q17i	129/211.32	199/200.09	72/182.24	3.22 / 0.200
Q17j	131/204.81	198/199.98	71/193.99	0.48 / 0.789
Q17k	131/206.99	199/198.31	71/197.48	0.60 / 0.741
Q17l	131/208.66	198/199.17	72/192.11	1.30 / 0.523
Q17m	131/189.23	198/210.48	72/ 196.33	3.43 / 0.179

N*ote.* Key. Support measures were coded as follows: Q17a = Time off work; Q17b = Counselling/psychological support; Q17c = Emotional/ethical discussion; Q17d = Clear information on course of action; Q17e = Formal collegial support; Q17f = Informal support; Q17g = Quick crisis intervention; Q17h = Mentoring when continuing patient care; Q17i = Support in patient/relative communication; Q17j = Guidelines on role during event; Q17k = Active role in event processing; Q17l = Opportunity to suggest prevention measures; Q17m = Legal consultation

Kruskal–Wallis tests showed that most support measures were rated similarly across professions, with one significant difference for formal collegial support, χ^2 (2) = 11.31, p = 0.003, where medical practitioners rated it more helpful than nurses and pharmacists. Counselling (p = 0.083) and time off work (p = 0.126) approached significance, with pharmacists tending to rate these more favourably.

4.9.2 Support Perceptions of Non-Second Victims Across Professions

Among non-second victims, Kruskal–Wallis H tests revealed significant group differences for time off work H(2) = 6.04, p = 0.049, professional counselling H(2) = 6.41, p = 0.041, clear institutional information H(2) = 13.13, p = 0.001, crisis intervention H(2) = 8.67, p = 0.013 support during patient care H(2) = 7.42, p = 0.024, role clarity H(2) = 10.96, p =0.004, preventive feedback H(2) = 8.74, p =0.013, and legal consultation H(2) = 11.25, p = 0.004. In all cases, pharmacists reported the lowest mean ranks, indicating they perceived these measures as more helpful than nurses and medical practitioners. No other items showed significant differences (all p > 0.05)

Table 4.32: ***Perceived Importance of Support Measures Among Non-Second Victims by Profession.***

Question	Medical Practitioners (N/Mean Rank)	Nurses (N/Mean Rank)	Pharmacists (N/Mean Rank)	Kruskal-Wallis H / p
Q17a	36/119.43	92/132.99	112/110.58	6.04 / 0.049
Q17b	36/126.60	91/129.87	111/108.69	6.41 / 0.041
Q17c	36/130.69	92/128.17	112/110.92	4.77 / 0.092
Q17d	36/117.92	90/137.04	111/104.72	13.13 / 0.001
Q17e	36/122.56	91/126.30	112/114.06	1.83 / 0.401
Q17f	35/114.93	91/126.31	112/115.39	1.64 / 0.441
Q17g	36/112.15	91/134.95	111/109.22	8.67 / 0.013
Q17h	36/119.76	90/133.39	112/108.25	7.42 / 0.024
Q17i	36/122.13	91/127.93	112/112.88	2.70 / 0.259
Q17j	36/119.75	91/135.98	111/105.91	10.96 / 0.004
Q17k	35/118.91	90/131.23	112/109.20	5.92 / 0.052
Q17l	36/127.81	91/132.08	111/106.50	8.74 / 0.013
Q17m	36/121.33	90/135.27	112/106.24	11.25 / 0.004

N*ote: Key*. Support measures were coded as follows: Q17a = Time off work; Q17b = Counselling/psychological support; Q17c = Emotional/ethical discussion; Q17d = Clear information on course of action; Q17e = Formal collegial support; Q17f = Informal support; Q17g = Quick crisis intervention; Q17h = Mentoring when continuing patient care; Q17i = Support in patient/relative communication; Q17j = Guidelines on role during event; Q17k = Active role in event processing; Q17l = Opportunity to suggest prevention measures; Q17m = Legal consultation

4.9.3 Summary of Support Ratings Across Professions

Overall, the findings highlight significant interprofessional differences in second victim prevalence, symptom severity, and perceived support needs, with nurses reporting the highest traumatisation and symptom load, and pharmacists rating support measures as more helpful, especially among non-second victims.

Table 4.33

Summary of Interprofessional Differences in Perceived Support Measures

Support ratings	Medical Practitioners	Nurses	Pharmacists
Second Victims	Rated most support measures similarly to other professions. Reported formal collegial emotional support significantly higher than nurses and pharmacists ($H(2) = 11.31$, $p = 0.003$). Counselling and time off work approached significance.	Rated support measures similarly overall but perceived formal collegial emotional support as less helpful than medical practitioners.	Ratings overall similar to other professions, but tended to value counselling and time off work more highly (approached significance).
Non-Second Victims	Mid-range ratings overall. Did not perceive support measures as highly as pharmacists.	Mid-level ratings. Higher than medical practitioners for institutional clarity, crisis intervention, and role guidelines, but still lower than pharmacists.	Consistently rated support measures as most helpful. Reported significantly higher ratings for time off work, counselling, institutional information, crisis intervention, patient care support, role clarity, prevention feedback, and legal consultation.

4.10 Summary of the Study Hypotheses

A summary of all study hypotheses and corresponding results across Objectives 1–6, highlighting whether each hypothesis was supported or rejected based on the quantitative and qualitative analyses conducted is shown in Table 4.34.

Table 4.34

Collation of Study Hypotheses and Main Results (Objectives 1–6)

Domain	Hypotheses (Table 2.15)	Reference to Chapter 4 Sections	Main Relevant Results
Prevalence	H_0: SVP prevalence does not differ across healthcare professions. H_1: SVP prevalence differs across healthcare professions.	4.4.1–4.4.2; 4.4.4 (Tables 4.6–4.8; Fig. 4.1)	Supported (H_1): $\chi^2(2, N = 900) = 73.92$, $p < 0.001$. Prevalence highest among medical practitioners (77.7%), then nurses (69.8%), then pharmacists (42.3%).
	H_0: SVP prevalence does not differ by clinical acuity. H_1: Healthcare professionals in high-acuity settings report higher SVP prevalence.	4.5.3 (Area of Practice Analyses)	Supported (H_1): Pharmacists $\chi^2(5) = 11.61$, $p = 0.041$ → area of practice influenced SV experience. Other groups not tested.

Prevalence	H_0: Cultural and organisational factors do not influence reporting of SVP. H_1: Cultural and organisational factors influence reporting of SVP.	4.10.1–4.10.7 (Qualitative Results)	Qualitatively supported (H_1): Themes of blame culture, leadership gaps, and organisational barriers. No quantitative test applied.
Demographic and Workplace Predictors	H_0: Female HCPs do not have increased risk of SVP. H_1: Female HCPs have higher odds of becoming second victims.	4.5.2 (Logistic Regression)	Partially supported (H_1): Females showed higher odds of SVP overall ($p < 0.05$); effect strongest in pharmacists ($p = 0.077$ trend). No significant effects for MPs or nurses.
	H_0: Age and experience do not predict SVP status. H_1: Younger age and fewer years of experience predict higher SVP odds.	4.5.2 (Logistic Regression)	Partially supported (H_1): Among nurses, younger age and less experience predicted SV status ($p < 0.01$). Not significant for other groups.
	H_0: Clinical acuity does not predict symptom load. H_1: High-acuity environments predict greater symptom load.	4.6.1 (Interprofessional Differences in Symptom Load)	Not tested (descriptive only): Area of practice could not be classified by acuity due to many "Other" responses.

Demographic and Workplace Predictors	H_0: Experience not associated with recovery duration. H_1: Greater experience predicts longer recovery.	4.6.3 (Recovery Duration)	Not tested (descriptive only): Pharmacists most often recovered < 1 week (35.6%); no inferential test on experience.
Symptom Load and Recovery	H_0: Mean symptom load does not differ across professions. H_1: Mean symptom load differs across professions.	4.6.1 (Table 4.13)	Supported (H_1): Kruskal–Wallis $H(2)=9.13$, $p = 0.010$; nurses reported higher symptom load.
	H_0: Prolonged recovery (≥ 3 months) does not vary by profession. H_1: Prolonged recovery varies by profession.	4.6.3 (Table 4.15)	Not tested (descriptive only): No inferential test; pattern varied by profession (pharmacists recover faster).
	H_0: Emotional symptoms not rated higher than other domains. H_1: Emotional symptoms rated higher than cognitive, behavioural, or physical domains.	4.6.2 (Symptom Domain Analysis)	Descriptively supported (H_1): Fear and emotional distress highest across groups; several item-level differences significant ($p < 0.001$).

Personality Traits — SVP Status (Risk)	H_0: Neuroticism not associated with symptom risk. H_1: Neuroticism predicts symptom risk.	4.7.1 (Table 4.22)	Not supported (H_0 retained): No significant effects.
	H_0: Agreeableness not associated with symptom risk. H_1: Agreeableness predicts symptom risk.	4.7.1(Table 4.22)	Not supported (H_0 retained): No significant effects across the professions.
	H_0: Extraversion not associated with symptom risk. H_1: Extraversion predicts symptom risk.	4.7.1(Table 4.22)	Not supported (H_0 retained): No significant effects.
	H_0: Conscientiousness not associated with symptom risk. H_1: Conscientiousness predicts symptom risk.	4.7.1(Table 4.22)	Not supported (H_0 retained): No significant effects.
	H_0: Openness is not associated with symptom risk. H_1: Openness predicts symptom risk.	4.7.1(Table 4.22)	Not supported (H_0 retained): No significant effects.
Personality Traits — Symptom Load	H_0: Neuroticism not associated with symptom load. H_1: Neuroticism positively predicts symptom load.	4.7.2 (Tables 4.22–4.24)	Supported (H_1): Nurses ($p = 0.001$) and pharmacists ($p = 0.031$) show positive effects; MPs showed inverse relation ($p = 0.036$).

Personality Traits — Symptom Load	H_0: Agreeableness not associated with symptom load. H_1: Agreeableness positively predicts symptom load.	4.7.2 (Tables 4.22–4.24)	Not supported (H_0 retained): No significant effects across professions.
	H_0: Extraversion not associated with symptom load. H_1: Extraversion predicts symptom load.	4.7.2 (Tables 4.22–4.24)	Not supported (H_0 retained): No significant effects.
	H_0: Conscientiousness not associated with symptom load. H_1: Conscientiousness predicts symptom load.	4.7.2 (Tables 4.22–4.24)	Not supported (H_0 retained): No significant association; small protective trend in nurses ($p = 0.058$).
	H_0: Openness is not associated with symptom load. H_1: Openness positively predicts symptom load.	4.7.2 (Tables 4.24; F1–F4)	Partially supported (H_1): Among medical practitioners, Openness positively predicted symptom load ($p = 0.006$). No significant effects for nurses or pharmacists.
	H_0: Neuroticism does not mediate age–symptom load link. H_1: Neuroticism mediates this relationship.	4.7.3 (Mediation Models)	Not supported (H_0 retained): No significant indirect effects found for any profession.

Perceived Support	H_0: Helpfulness of peer support/debriefing does not differ by SV status. H_1: SVs rate peer support/debriefing more helpful than non-SVs.	4.8.1–4.8.2 (Tables 4.27–4.30)	Partially supported (H_1): Nurses (SVs) rated peer/informal supports higher ($p < 0.05$); pharmacists (non-SVs) rated time-off and information higher ($p < 0.05$).
	H_0: Nonvictims do not rate formal counselling/legal services more helpful than SVs. H_1: Nonvictims rate them more helpful.	4.8.2 (Tables 4.27–4.30)	Not supported (H_0 retained): No significant differences for counselling or legal services across professions.
Interprofessional Variation in Support	H_0: Perceived support does not differ across professions (after stratifying by SV status). H_1: Perceived support differs across professions (after stratifying by SV status).	4.8.3–4.8.4 (Tables 4.31–4.33)	Supported (H_1): Among SVs, formal collegial support differed $\chi^2(2)=11.31$, $p = 0.003$ (MPs highest). Among non-SVs, multiple supports varied ($p < 0.05$), pharmacists rated most helpful.

Note. H_0 = null hypothesis; H_1 = alternative hypothesis. Statistical significance set at $p < 0.05$. Descriptive findings indicate trends where no inferential testing was performed.

4.11 Qualitative Alignment of Thematic Findings with Research Objectives

Section 4.10 presents the thematic analysis of open-ended survey responses from nurses, pharmacists, and medical practitioners, aimed at exploring awareness, experiences, and perceptions of the Second Victim Phenomenon (SVP). An inductive coding process was used to identify and refine themes, which were then aligned and numbered according to the study's six research objectives.

4.11.1 Objective 1: To determine the prevalence of the Second Victim Phenomenon among healthcare professionals in Malta.

Medical practitioners were the most direct in acknowledging how widespread second victim experiences are, with one stating, "*All too common and not very well recognised, unfortunately"* (participant MP152). Nurses did not explicitly comment on prevalence, instead they focused more on support-related aspects of second victimhood. Pharmacists made brief but affirming remarks about its legitimacy, with one noting, "*Real phenomenon among healthcare professionals. Support measures would be beneficial"* (participant P101). These responses show varying levels of explicit recognition across professions, with clearer acknowledgement from medical doctors and pharmacists.

4.11.2 Objective 2: To characterise the experiences and symptoms associated with the Second Victim Phenomenon in healthcare professionals in Malta.

Medical practitioners described emotionally charged incidents such as "being accused of a missed diagnosis of cancer" (participant MP109) and noted long-lasting emotional impact: "*I was also marked by the victims of the Um el Faroud explosion* (this was an explosion on board a tanker in the dockyards in 1995 where many of the

victims passed away) *still affected to this day*" (participant MP59). Nurses shared experiences of clinical trauma, "*patient passed away during surgery*" (participant N195), "*murder*"(participant N293), as well as interpersonal stressors like "incident with colleagues" (participant N138) and "*aggressive behaviour of a staff"* (participant N139). Pharmacists referenced incidents involving threat, system pressures, and fear, such as "*hold-up of pharmacy… the aggressor was a drug addict, but he was a patient too"* (participant P57). These examples illustrate both shared emotional consequences and profession-specific triggers.

4.11.3 Aligned with Research Objective 3: **To explore the impact of age, professional experience, and different work environments on the prevalence, severity, and coping mechanisms associated with SVP.** Medical practitioners reflected on the culture of blame and external scrutiny, including public exposure: "*There is a lot of shame in the medical community when mistakes happen… augmented by social media groups where people can freely expose one through name-shaming"* (participant MP150). Nurses highlighted structural vulnerabilities in leadership and policy decisions: "*Managers might opt for risky decisions… they cannot fully understand the impact on frontline workers"* (participant N285). Pharmacists frequently provided no substantive responses under this theme, with many answering "None" (participants P103, P169) or leaving the space blank, which may reflect limited awareness or perceived relevance of SVP in their role.

4.11.4 Aligned with Research Objective 4: **To investigate the influence of personality traits on the severity of second victim symptoms.**

Medical practitioners conveyed feelings of guilt, internal distress, and perfectionism, often exacerbated by perceived judgment from peers and superiors. Nurses focused

more on external challenges such as communication breakdowns and procedural failures, reflecting a more externalised stress orientation. Pharmacists expressed a heightened sense of anxiety and hypervigilance, typified by one participant's comment: "*I work with constant fear that this might one day happen*" (participant P225).

4.11.5 Aligned with Research Objective 5: **To assess the availability and perceived effectiveness of current support systems for second victims.** Medical practitioners commonly described the absence or inaccessibility of support systems, with one stating, "*Help should be integrated in a structured way since making the second victim reach out themselves will reduce the chance of taking on the offer"* (participant MP158), and others responding with "*NIL*" (participant MP206) or "*n/a*" (participant MP187). Nurses frequently relied on informal or peer support networks, citing examples such as *"My charge nurse at the time was supportive" (participant N172)* and "*Psychology sessions were organised for the staff to help cope with this difficult patient"* (participant N248). Pharmacists called for structured psychological help and clearer protocols, saying, "*We need 24-hour available support (psychologist)"* (participant P100) and "*I wish the organisation provided us with this support when the need arises"* (participant N276). One also listed "*Police Force*" as a support contact after an incident (participant P35). Collectively, these perspectives highlight the uneven availability and perceived effectiveness of institutional support.

4.11.6 Aligned with Research Objective 6 : **To examine differences in perceived support systems according to second victim status across healthcare professions.**

Perceptions of support varied across professions and were strongly influenced by institutional culture. Medical practitioners and nurses both drew attention to the

persistence of a blame culture, with one doctor remarking that "*blame culture is still very strong"* (participant MP214), while a nurse similarly stressed the need to "*walk away from the blame culture, which is highly done in Malta, unfortunately"* (participant N328). Pharmacists, however, tended to frame their experiences differently, focusing more on organisational stressors and uncertainty about the future, with less direct reference to blame. Taken together, these perspectives revealed how the second victim experience was filtered through each profession's specific working environment and cultural expectations.

4.11.7 Other Insights from Open-Ended Questions

Participants across professional groups highlighted the need for cultural and organisational reform. Medical practitioners called for structural change, noting that "*management often tackles these* [adverse events] *....by finding someone to blame rather than seeing the bigger picture*" (participant MP150). Nurses stressed the importance of formalised emotional support, stating, "*More support should be given to health professionals to minimise emotional distress"* (participant N305), and "*I wish the organisation provided us with this support when the need arises"* (participant N276). Pharmacists echoed similar concerns, with one participant observing, "*The healthcare professional needs all the support measures mentioned as this event can certainly affect negatively one's life besides the profession"* (participant P220).

Some participants also expressed scepticism about whether research on the Second Victim Phenomenon would lead to meaningful change, questioning, "*Will it have any practical end results?"* (participant MP133). Nonetheless, there was broad support for early education and awareness, with suggestions such as "*This is a phenomenon*

which should be explored at the university stage" (participant P143) to better prepare healthcare professionals for the emotional demands of clinical practice.

Several participants further reflected on how adverse events had influenced their career decisions. Reported consequences included changing workplace, "*I had to change my place of work to another division as in the previous working area things in my confrontation became TOXIC and I had to be shifted for my mental sanity"* (participant N76), and withdrawing from or reconsidering specialisation pathways: "*I was considering continuing specialising in the department but left"* (participant MP44) and "*It led to the abandonment of a speciality training programme and hospital duties which I somewhat regret"* (participant MP132). One participant even described resigning from the post or workplace following the adverse event, as in, *"Yes, it led me to give my resignation*"(participant MP50)."

4.11.8 Summary of qualitative analysis

Table 4.35 summarises the themes identified from open-ended responses, aligned with each research objective and grouped by profession.

Table 4.35

Summary of Thematic Findings on Second Victim Experiences Across Research Objectives and Professions

Research Objective	Medical Practitioners	Nurses	Pharmacists
SVP Prevalence	Acknowledged SVP as common but under-recognised.	Focused on support aspects; rarely commented on prevalence.	Briefly affirmed SVP as a real phenomenon needing support.
Experiences and Symptoms	Cited high-impact clinical incidents and lasting emotional effects.	Shared trauma is linked to clinical events, interpersonal conflicts, and aggression.	Reported threats, robbery, system pressures, and anticipatory anxiety.
Role of Experience, Age, and Environment	Highlighted blame culture, public shaming, and scrutiny.	Stressed poor leadership, risky managerial decisions, and frontline vulnerability.	Often provided no input; possible perceived irrelevance.
Personality and Emotional Responses	Described guilt, perfectionism, and peer judgment sensitivity.	Focused on communication challenges and procedural failures.	Expressed fear, hypervigilance, and anticipatory stress.
Support Systems	Reported lack of accessible formal support; few used existing services.	Relied mainly on informal support from peers and colleagues.	Called for structured psychological support and clearer protocols.
Interprofessional Comparisons	Emphasised the persistent blame culture in medicine.	Echoed blame culture concerns; stressed emotional toll.	Focused more on organisational stress and future uncertainty than on blame.
Additional Insights	Called for cultural change and questioned the impact of SVP research. Reported leaving specialisations or jobs due to adverse events.	Advocated for formal emotional support and organisational reform. Reported changing roles or work settings due to SVP experiences.	Suggested early SVP education and stressed the need for accessible support. Reflected on the emotional and career impact of adverse events.

4.12 Conclusion

The findings highlight profession-specific differences in second victim experiences, symptom patterns, and support perceptions. Nurses and medical practitioners reported higher traumatisation, whereas pharmacists showed distinct views on support effectiveness. Although symptom severity and recovery varied, no personality trait consistently predicted second victim status or burden, pointing to a complex interaction of individual, professional, and organisational factors. These results provide the basis for the following discussion, where they are interpreted in relation to existing literature.

Chapter 5 - Discussion

5.1 Introduction

The aim of this study was to investigate the prevalence and impact of the Second Victim Phenomenon (SVP) among medical practitioners, nurses, and pharmacists in Malta. In addition, it sought to provide evidence to guide the development of effective support strategies for healthcare professionals affected by SVP. The quantitative findings are presented and compared with global research and are triangulated with insights obtained through thematic analysis of open-ended responses. Section 5.2 examines Objective 1: prevalence and awareness of SVP in Malta**.** Section 5.3 assesses Objective 2: symptom profiles, severity, and recovery trajectories**.** Section 5.4 analyses Objective 3: associations between demographic and work-related factors and SVP status/severity**.** Section 5.5 explores Objective 4: the influence of Big Five personality traits on SVP risk and symptom load**.** Section 5.6 evaluates Objectives 5 and 6: the availability and perceived effectiveness of support within and across profession**s.** Section 5.7 identifies gaps in support availability and perceived effectiveness. Section 5.8 considers methodological strengths and limitations. Section 5.9 summarises the chapter's findings and leads into the final chapter on conclusion and recommendations.

5.2 Objective 1: Prevalence of the Second Victim Phenomenon

5.2.1 Definitions, Methodology and Other Factors

The prevalence of the (SVP) through different studies has been impacted by evolving definitions (Wu, 2000; Scott et al., 2009; Vanhaecht et al., 2022), varying methodological approaches (Burlison et al., 2017; Strametz et al., 2021a), as well as demographic, cultural (Burlison et al., 2017; Seys et al., 2013), and personality factors

(Marung et al., 2023; Potura et al., 2023; Bushuven et al., 2024). The following section examines the prevalence and awareness of SVP in Malta.

5.2.2 Prevalence and Awareness

In this study, a Chi-square test of independence showed that the lifetime prevalence of SVP differed significantly across professions, χ^2 (2, N = 900) = 73.92, $p < 0.001$, with the highest prevalence reported by medical practitioners (77.7%), followed by nurses (69.8%) and pharmacists (42.3%). The results supported the study's alternative hypothesis (H_1), indicating that SVP prevalence differed across healthcare professions.These figures broadly aligned with international data, where prevalence among medical practitioners ranged from 59% in Germany (Strametz et al., 2021) to over 90% among South Asian surgical teams (Jain et al., 2022). For nurses, reported rates in other countries typically ranged between 60% and 80% (Potura et al., 2024; Kuruvilla, 2025), consistent with the Maltese findings. Pharmacists showed the lowest prevalence locally, a trend also observed internationally, such as the 53% reported among U.S. oncology pharmacists (Johnson & Tucker, 2025).

The comparatively lower prevalence among pharmacists reflected international evidence that professionals outside high-risk clinical roles are less frequently exposed to acute patient safety incidents (Strametz et al., 2021a; Potura et al., 2024). However, the particularly wide gap observed in Malta may also be linked to contextual factors, including professional isolation in community practice and fears of reputational damage within a small and tightly connected system. Previous studies similarly highlighted these challenges, noting how weak safety culture, limited institutional support, and blame-oriented responses not only hinder recovery but also amplify reputational concerns, as being blamed within such environments can quickly

translate into stigma and loss of professional credibility (Quillivan et al., 2016; Kobe et al., 2019; Busch et al., 2021; Cohen et al., 2023). Qualitative accounts in this study reinforced these findings, with several participants emphasising the persistence of a blame culture. As one medical practitioner stated, "*Blame culture is still very strong*" (participant MP24), and a nurse similarly noted, "*We need to walk away from the blame culture, which is highly done in Malta, unfortunately*" (participant N328). Another medical practitioner added, "*Management often tackles these ... [adverse events] by finding someone to blame rather than seeing the bigger picture*" (participant MP150). Together, these perspectives suggest that under conditions of professional isolation and reputational risk, the broader climate of blame and self-reliance may further suppress pharmacists' acknowledgement of SVP. In line with these insights, hypothesis H_1 with regards to cultural and organisational factors is qualitatitively supported.

Awareness also shaped reporting patterns. In this study, only 35.9% of medical practitioners, 35.0% of nurses, and 23.1% of pharmacists reported familiarity with the term *second victim*. Guerra-Paiva et al. (2024) likewise found that greater awareness increased reporting, not because adverse events occurred more often, but because professionals were better able to recognise and label their experiences. The literature also highlighted persistent gaps in training (Sánchez-García et al., 2023; Buttigieg et al., 2024). As one participant remarked, *"This is a phenomenon which should be explored at the university stage"* (participant P143), underscoring the importance of introducing awareness early in professional education. A medical practitioner described SVP as "*all too common and not very well recognised*" (participant MP152), while a hospital pharmacist affirmed it is a "*real phenomenon among healthcare professionals*" and stressed that "support measures would be beneficial"

(participant P101). Nurses focused less on prevalence itself and more on the need for practical support, with one participant calling for stronger resources: "*More support should be given to health professionals to minimise emotional distress" (participant N251)*

5.3 Objective 2: Symptoms and Experiences Associated With the Second Victim Phenomenon

In this study, emotional and cognitive symptoms emerged as the most prevalent responses to second victim experiences across medical practitioners, nurses, and pharmacists, while behavioural and somatic symptoms were reported less frequently. supporting the study's alternative hypothesis (H_1). Table5.1 summarises the prevalence of these symptoms by professional group, with figures compared to the SeViD series as the primary international benchmark (Potura et al.,2023,2024; Klemm et al., 2025). Other studies, including those by Burlison et al. (2018) and Strametz et al. (2021), are also discussed in the text to provide a broader context and triangulation of findings.

Table 5.1

Comparison of Impact Variables Across Professions and Studies.

Variables	Medical Practitioners – This study (%)	Nurses – This study (%)	Pharmacists – This study (%)	SeViD-A1 – Paediatricians Potura et al., 2023 (%)	SeViD-A2 – Nurses Potura et al., 2024 (%)	SeViD-A3 – Midwives Klemm et al., 2025 (%)
Emotional						
Reliving the situation outside professional activity	34.1	40.1	40.3	25.0	21.5	30.0
Self-doubt	31.3	29.8	27.4	38.4	30.5	38.4
Depressive mood	21.4	34.5	26.0	15.5	21.2	21.2
Guilt	24.4	22.6	21.9	27.4	23.1	23.1
Cognitive						
Concentration difficulties	18.2	24.0	49.2	13.4	21.8	21.8
Somatic / Physical						
Insomnia	16.7	32.5	28.8	32.3	45.0	45.0
Behavioural						
Use of alcohol/drugs due to the event	0.0	5.0	1.4	1.8	3.9	3.9
Aggressive or intentionally risky behaviour	8.0	10.0	1.4	2.1	4.4	4.4
Social isolation	6.1	12.7	5.6	10.1	10.1	10.1
Recovery Trajectories						
Less than a week	13.6	14.2	35.6	Not reported	28.0*	28.0
Within a month	34.8	29.9	11.0	66.2	29.9	29.9
Never recovered	18.9	14.7	11.0	14.0	13.0	13.0

Note. within a week

5.3.1 Four Symptom Types

In Table 5.1 emotional symptoms were the most common symptoms reported in this study, with reliving the situation outside of work most frequently reported: 34.1% of medical practitioners, 40.1% of nurses, and 40.3% of pharmacists. Self-doubt followed closely, affecting 31.3% of medical practitioners, 27.4% of pharmacists, and 22.1% of nurses, while depressive mood was most prominent in nurses (34.5%), then pharmacists (26.0%) and medical practitioners (21.4%). Feelings of guilt were relatively consistent across groups, ranging from 21.9% to 24.4%. Internationally, SeViD-A2 reported lower prevalence for some of these symptoms, with reliving the situation at 21.5%, guilt at 23.1%, and depressive mood at 21.2% (Potura et al., 2024), whereas midwives in SeViD-A3 displayed higher self-doubt (38.4%) and similar rates of reliving the situation (30.0%) (Klemm et al., 2025). The studies by Burlison et al. (2018) and Strametz et al. (2021a) have similarly identified guilt, depressive mood, and self-doubt as core components of second victim distress. Insights supporting these patterns were echoed in the qualitative accounts, where medical practitioners described lasting emotional effects from high-profile incidents, such as "*being accused of a missed diagnosis of cancer*" (participant MP109) or recalling the Um el Faroud explosion, which "*still affected [me] to this day*" (participant MP59). Nurses reflected on traumatic clinical events such as violent incidents, "*murder*" (participant N293).

Cognitive symptoms were also substantial in the local study, with concentration difficulties affecting 49.2% of pharmacists, 24.0% of nurses, and 18.2% of medical practitioners. Internationally, SeViD-A2 reported 21.8%, closely matching Maltese nurses but markedly lower than Maltese pharmacists. Qualitative reflections often linked these difficulties to intrusive thoughts and hypervigilance. Pharmacists

described constant awareness of potential risks: "*I work with constant fear that this might one day happen*" (participant P225). Nurses referred to procedural hesitation after errors, and medical practitioners noted sustained mental strain following critical incidents.

By contrast, behavioural symptoms were the least frequently reported. Alcohol or drug use was absent among medical practitioners and reported by only 5.0% of nurses and 1.4% of pharmacists in Malta. Aggressive or risky behaviour was rare (1.4–10.0%), and social withdrawal occurred in just 5.6–12.7% of participants. SeViD studies have reported similarly low rates of substance use (0–5%) (Potura et al., 2024; Klemm et al., 2025). While such low figures may indicate genuinely limited reliance on maladaptive coping, underreporting due to stigma and fear of professional repercussions remains a plausible factor (Burlison et al., 2021). Qualitative data provided minimal direct evidence of behavioural coping, but avoidance emerged indirectly, for example, a medical practitioner, MP132, remarked, "*It led to the abandonment of a speciality training programme and hospital duties which I somewhat regret"*. Another nurse wrote, *"I had to be shifted for my mental sanity"*

In this study, somatic symptoms were less common but still relevant. The most frequent complaint was insomnia, affecting 32.5% of nurses, 28.8% of pharmacists, and 16.7% of medical practitioners. In international comparison, midwives in SeViD-A3 reported markedly higher rates (45.0%), while SeViD-A2 recorded 21.8% (Potura et al., 2024). Although no qualitative accounts in this study directly addressed somatic symptoms, their absence in narrative responses does not diminish their significance, and meaningful conclusions can still be drawn. Insomnia and related physical manifestations are consistent with the embodied stress response to SVP, with the

higher prevalence among nurses possibly linked to emotional intensity, shift work, and the unpredictability of their clinical settings.

5.3.2 Symptom Severity among the three professions

The difference in symptom severity across the professions was also statistically significant according to the Kruskal–Wallis H test, H (2) = 9.13, p = 0.010. These findings supported the alternative hypothesis (H_1) that mean symptom load varied across professions. Importantly, symptom severity was assessed only among participants who identified as second victims, providing a focused view of the burden within this group. Nurses reported the highest levels of psychological and behavioural strain, followed by pharmacists, while medical practitioners reported the lowest levels. Nurses scored significantly higher on psychosomatic complaints (H(2) = 23.94, p < 0.001), sleep disturbances (H (2) = 11.50, p = 0.003), concentration difficulties (H (2) = 12.34, p = 0.002), substance use (H) (2) = 8.89, p = 0.012), social withdrawal (H(2) = 8.60, p = 0.014), and outward expressions of anger (H (2) = 14.03, p = 0.001). This profile suggested that Maltese nurses experienced a deeper emotional and behavioural toll compared with other groups. These findings were consistent with SeViD-A2 (Potura et al., 2024) and SeViD-III (Marung et al., 2023), which also found nurses to be most affected, though the Maltese results revealed more pronounced behavioural consequences. Qualitative accounts reinforced this burden, with one nurse stating, *"More support should be given to health professionals to minimise emotional distress"* (participant N305), while another participant reflected, "*I had to change my place of work to another division as in the previous working area things in my confrontation became TOXIC"* (participant N76). Such narratives pointed to

both the personal and systemic costs of unaddressed second victimhood, including burnout and attrition.

5.3.3 Recovery trajectories

Recovery trajectories further highlighted professional variation in line with hypothesis H_1 (Table 4.34). Most participants reported recovery within one month, but 18.9% of medical practitioners, 14.7% of nurses and 11.0% of pharmacists stated that they had not recovered by the time of data collection. These proportions align with SeViD-I, which found that a substantial minority of young medical practitioners continued to experience unresolved distress (Strametz et al., 2021a). Qualitative accounts confirmed this persistence, with some medical practitioners describing symptoms that endured for years or even decades. This demonstrates that for some professionals, SVP is not a transient experience but one with enduring consequences.

The findings demonstrated that the **impact** of SVP varied across professions, with differing symptom load and recovery patterns, underscoring the importance of profession-sensitive support to safeguard wellbeing and patient safety.

5.4 Objective 3: Influence of Demographic and Work-Related Factors on Second Victim Status and Symptom Severity

This section examines how demographic and workplace characteristics shaped second victim status and symptom severity among Maltese healthcare professionals. The analysis considered nationality, gender, age, professional experience, and workplace setting, interpreting these findings in relation to international evidence and triangulating them with qualitative insights.

5.4.1 Nationality

In this study, nationality emerged as a significant factor for some groups, partially aligning with H_1 in this regards (Table 4.34). Among pharmacists, non-Maltese respondents reported substantially higher symptom loads (B = 4.589, p = 0.009), while for medical practitioners, nationality approached significance as a predictor of second victim status (B = 1.089, p = 0.084). Nurses showed no nationality-related effects. International literature has rarely assessed nationality directly, including the SeViD studies, but the World Health Organisation (2024) noted that expatriate healthcare workers often face cultural dislocation, limited peer networks, and inequities, which can amplify vulnerability. Similar trends were reported in Ireland, where migrant workers described heightened stress and weaker access to institutional support (Thankachen et al., 2025). Within the Maltese context, the heavier burden carried by non-Maltese pharmacists likely reflects the challenges of integration in a small, tightly knit health system.

5.4.2 Gender

Gender did not significantly predict SVP status for medical practitioners (B = 0.050, p = 0.903) or nurses (B = –0.338, p = 0.186), though among pharmacists, gender effects approached significance (B = –0.529, p = 0.079). Female pharmacists reported notably higher symptom loads (B = 2.496, p = 0.005). These findings partially support H_1 that gender significantly predicts SVP status and symptom load. (Table 4.34). International findings are inconsistent: some surveys suggested women report more severe SVP symptoms (Strametz et al., 2021; Potura et al., 2023), while others found no differences (Strametz et al., 2021a; Marung et al., 2023), or even greater male vulnerability in certain settings (Sedile et al., 2024). In the present study, no gender-

specific narratives were reported qualitatively, which was expected given that the survey did not prompt for this explicitly. These results indicate that gender influences in Malta were profession-specific, with pharmacists, particularly female respondents, most affected.

5.4.3 Age

In this study, age was also influential. For nurses, age significantly predicted second victimisation (B = 0.539, p = 0.003), while for medical practitioners, older age trended toward higher symptom load (B = 1.104, p = 0.060). No significant effects emerged among pharmacists thus H_1 was partially supported in this study (Table4.34). This contrasts with the dominant view that younger professionals are most vulnerable (Potura et al., 2023; Shahbazzadeh et al., 2025), but supports alternative findings that older staff may face cumulative trauma through repeated exposure (Strametz et al., 2021b). Qualitative accounts linked this to heightened accountability: one medical practitioner noted, *"There is a lot of shame in the medical community when mistakes happen… augmented by social media groups where people can freely expose one through name-shaming"* (MP150). This suggests that older age in Malta was associated with both cumulative exposure and intensified scrutiny.

5.4.4 Professional experience

The findings of this research showed that professional experience had a protective role among nurses (B = –0.661, p < 0.001), whereas inexperience predicted higher symptom load among medical practitioners (B = –1.315, p = 0.010). No effects were observed for pharmacists, thus H_1 with regards to professional experience was partially supported in this study (Table 4.34). This aligns with the majority of studies

showing early-career professionals are more vulnerable due to limited coping strategies (Potura et al., 2023; Shahbazzadeh et al., 2025). However, SeViD-VIII (Marung et al., 2025) found risk increasing with professional experience, highlighting that accumulated exposure can sometimes undermine resilience. Maltese nurses reflected this tension, noting that structural decisions often placed them at risk regardless of experience: *"Managers might opt for risky decisions… they cannot fully understand the impact on frontline workers"* (participant N285). These accounts show that while experience generally reduces vulnerability, organisational factors can override its protective effect.

5.4.5 Workplace setting

Chi-squared analysis from this study showed that the workplace setting was significant for pharmacists, with both hospital and community roles associated with elevated risk (χ^2 (5) = 11.61, p = 0.041). For medical practitioners and nurses, inferential testing was not possible due to non-disclosure (hypothesis on clinical acuity predicting increased risk was not tested). International evidence consistently identifies high-acuity environments, such as emergency care and ICUs, as high-risk (Kappes et al., 2023; Naya et al., 2023). Thematic narratives mirrored these distinctions: nurses recalled acute clinical events such as "patient passed away during surgery" (participant N195), while pharmacists more often described dispensing errors, ethical dilemmas, or safety threats: *"Hold-up of pharmacy… the aggressor was a drug addict, but he was a patient too"* (P57). Aggression emerged as a shared trigger, echoing international findings where patient or relative aggression was strongly associated with prolonged recovery (Potura et al., 2024; Strametz et al., 2021a).

These patterns imply that vulnerability to SVP in Malta cannot be explained by demographics alone but results from the interaction between personal characteristics, professional roles, and systemic contexts.

5.5 Objective 4: Influence of Personality Traits on Second Victim Risk and Symptom Severity

This section explored whether personality traits shaped the likelihood of second victimisation and the intensity of symptom severity across the three professions. Findings from this study are compared to the SeViD series, with reference to Tables 5.2 and 5.3.

5.5.1 Second victim status

In this study, none of the Big Five personality traits significantly predicted second victim status across professions (Table 5.2) indicating that the alternative hypothesis (H_1) was not supported. Instead, risk was shaped by demographics and experience, particularly among nurses, where older age increased vulnerability and professional experience reduced it. By contrast, *SeViD-III* (Marung et al., 2023) demonstrated that neuroticism significantly increased the likelihood of becoming a second victim, whereas *SeViD-A1* (Potura et al., 2023) found both neuroticism and extraversion to be significant risk factors.

Table 5.2

Comparison: Predictors of Becoming a Second Victim (Maltese vs SeViD Studies

Profession	Maltese Study (Before and After Personality Traits)	SeViD Findings (Only SVP Risk Predictors)
Medical Practitioners (including Paediatricians)	- Age: ns - Gender: ns - Experience: ns - Nationality: marginal (B = 1.089, p = 0.084) → disappeared (B = –0.059, p = 0.629) - Personality traits: none significant	SeViD-III (German EMS physicians): - Age: ns - Gender: ns - Experience: ns - Nationality: not compared - Neuroticism ↑ SVP risk (B = 1.44, p = 0.01) SeViD-A1 (Austrian paediatricians): - Age: ns - Gender: ns - Experience: ns - Nationality: not compared - Extraversion ↑ SVP risk (B = 0.44, p = 0.01) - Neuroticism ↑ SVP risk (B = 0.55, p = 0.01)
Nurses	- Age: significant ↑ risk (B = 0.539, p = 0.003) → remained significant but weaker (B = 0.529, p = 0.038) - Experience: significant ↓ risk (B = –0.661, p < 0.001) → remained significant, slightly stronger (B = –0.723, p = 0.002) - Gender: ns - Nationality: ns - Personality traits: none significant (e.g., neuroticism B = 0.142, p = 0.441; extraversion B = –0.069, p = 0.593)	SeViD-A2 (Austrian nurses): - No predictors of SVP risk - Predictors found only for symptom load (not SVP status)

Pharmacists	- Age: ns - Gender: marginal (B = –0.529, p = 0.077) → disappeared (B = –0.578,p = 0.133) - Experience: ns - Nationality: ns - Personality traits: none significant (e.g., conscientiousness B = –0.116, p = 0.408)	No SeViD study included pharmacists as a standalone group.

Note. ns = not significant.

5.5.2 Second Victim Load

Personality traits did not predict second victim status but some traits did affect the symptom load. As shown in Table 4.34, the alternative hypothesis (H_1) was supported for neuroticism among nurses and pharmacists, and for openness among medical practitioners, while the remaining traits showed no significant effects. Table 5.3 outlines the main patterns in Malta and their comparison with SeViD findings. Full details and statistical evidence are provided in the subsections that follow.

Table 5.3.

Personality Traits and Symptom Severity: Maltese Findings Compared with SeViD Studies

Trait	Present Study Summary	Summary Across SeViD Series
Neuroticism	Strong, consistent predictor of higher symptom load in nurses and pharmacists.	Universally identified as the strongest predictor of severity across SeViD studies, also mediates age and experience effects.
Openness	Supported $H_{1:}$ associated with higher symptom load among medical practitioners only.	Associated with higher severity in A1 and A2. (Potura et al. 2023; Potura et al., 2024) SeViD-II linked it to longer recovery duration (Strametz et al,.2021a).
Extraversion	Not supported (H_0 retained). Not significant across all outcomes.	Mixed results: predicted higher SVP risk in A1 and A2, but linked to lower symptom load in those same studies (Potura et al., 2023; Potura et al., 2024). Protective trend noted in IX (Bushuven et al., 2024).
Agreeableness	No significant associations. Not supported (H_0 retained).	Only in SeViD-IX did it predict higher symptom count, possibly due to empathy-driven vulnerability to moral injury (Bushuven et al., 2024).
Conscientiousness	Weak inverse trend with symptom load among nurses, but not significant overall. Not supported (H_0 retained).	Only a borderline result (SeViD-A3) hinted at potential protective effects (Klemm et al., 2025).

5.5.2.1 Neuroticism

Neuroticism consistently emerged as the most powerful personality predictor of symptom severity. Correlation analyses showed strong positive associations for nurses ($\rho \approx 0.35–0.40$, $p < 0.001$) and moderate effects for pharmacists ($\rho = 0.277$, $p < 0.01$), both of which were reinforced in regression models: nurses ($B = 0.61$, $p = 0.001$, 95% CI [0.35, 0.87]) and pharmacists ($B = 0.49$, $p = 0.031$, 95% CI [0.08, 0.82]). These findings align with SeViD-A1, A2, III, and IX, where neuroticism was the most consistent driver of second victim distress (Potura et al. 2023; Potura et al., 2024; Marung et al.,2023; Bushuven et al., 2024).

However, results for medical practitioners differed: regression showed a significant negative effect ($B = –0.48$, $p = 0.036$, 95% CI [–0.92, –0.07]), suggesting that higher neuroticism was linked to lower symptom severity. This negative effect might reflect an artefact of the modelling, since it emerged only in the regression and not in the simple correlations. Mediation models provided additional insight: although significant b-paths were identified for gender ($p = 0.011$) and nationality ($p = 0.006$), indirect effects were generally absent, with the exception of a very small pathway linking experience to symptom load via neuroticism (indirect effect = 0.11, 95% CI [0.001, 0.32], $p = 0.032$). While statistically significant, this effect was weak and of limited practical importance. Furthermore, when the mediation analysis was repeated, the pathway no longer reached significance, standing in contrast to the more robust mediations observed in SeViD-IX (Bushuven et al., 2024).

These findings show that neuroticism increased symptom severity for nurses and pharmacists but not consistently for medical practitioners.

5.5.2.2 Openness

Openness also shaped symptom severity, but only for medical practitioners. While simple correlations were weak and non-significant (e.g., medical practitioners $\rho = 0.17$, $p > 0.05$), bootstrapped regression revealed a significant positive effect ($B = 0.47$, $p = 0.006$, 95% CI [0.13, 0.82]). Mediation models confirmed the effect was direct rather than indirect. This pattern is consistent with SeViD-A1 and A2 (Potura et al. 2023; Potura et al., 2024), where openness was linked to stronger emotional impact, and SeViD-II (Strametz et al., 2021), which associated openness with prolonged recovery times.

Yet, the discrepancy between the absence of significant results in the correlation analyses and the significant effect in the regression suggests a possible suppression effect: openness appeared predictive only once other traits were controlled. This inconsistency limits confidence in its robustness and highlights the importance of not over-interpreting single-model findings. In this study, the effect of openness appeared strongest among medical practitioners working in cognitively demanding hospital roles, where the trait may foster reflection and overthinking, which can intensify distress. By contrast, no significant effects were observed for Maltese pharmacists, most of whom worked outside hospital settings. At the international level, SeViD-IX (Bushuven et al., 2024) similarly reported no significant associations in an outpatient care context. The absence of effects among Maltese nurses, despite their largely hospital-based practice, suggests that openness may not be determined by clinical setting alone but rather by the specific professional demands of each role.

5.5.2.3 Extraversion

Extraversion showed no meaningful associations with symptom load across Maltese professions. Correlations were weak and non-significant (e.g., nurses $\rho = -0.07$, $p > 0.05$), regressions confirmed null effects ($B = 0.08$, $p = 0.716$), and mediation analyses likewise yielded no indirect effects. These findings match SeViD-III and IX (Marung et al., 2023; Bushuven et al.,2024), which also reported no significant results, but diverge from SeViD-A1 and A2 (Potura et al., 2023; Potura et al., 2024), where extraversion paradoxically increased the risk of second victimisation while decreasing symptom severity once affected.

In Malta, extraversion showed no significant effects across correlation, regression, or mediation analyses. This may reflect restricted variation within the sample or the small, tightly knit nature of Maltese healthcare teams, which limits the broad professional networks where extraversion typically provides a buffering effect.

5.5.2.4 Agreeableness

Agreeableness was not significantly related to symptom severity in any Maltese group. Correlations were negligible (e.g., pharmacists $\rho = 0.003$, $p > 0.05$), and regressions confirmed non-significance ($B = 0.16$, $p = 0.543$). Mediation analyses detected weak b-paths for nurses ($p = 0.045$) and pharmacists ($p = 0.038$), but these did not translate into significant indirect effects. This suggests the b-paths may reflect random variation rather than true relationships.

This null pattern aligns with SeViD-A1, A2, A3, and III (Potura et al., 2023; Potura et al., 2024; Klemm et al., 2025; Marung et al., 2024), except for SeViD-IX (Bushuven et al., 2024), where agreeableness predicted symptom count and moral injury. The

absence of significant effects in Malta implies that the influence of agreeableness on second victim outcomes may not be universal but context-dependent.

5.5.2.5 Conscientiousness

Conscientiousness displayed a modest protective trend, particularly among nurses. Correlation analysis showed a significant negative relationship with symptom load ($\rho = -0.21$, $p < 0.01$), while regression suggested a protective effect that narrowly missed significance ($B = -0.37$, $p = 0.058$, 95% CI [–0.77, –0.02]). No significant results were observed for medical practitioners or pharmacists (e.g., pharmacists $B = 0.38$, $p = 0.169$). Mediation models confirmed the absence of indirect effects.

These findings partially echo SeViD-A3 (Klemm et al., 2025), where conscientiousness showed borderline protective effects. However, the inconsistency across professions in Malta suggests that conscientiousness may buffer stress in team-based environments like nursing, but not in more autonomous roles such as pharmacy.

5.6 Objective 5: Availability and Perceived Effectiveness of Support Systems

The study design enabled all participants to report on the availability and perceived effectiveness of support systems, regardless of whether they identified as second victims. This approach allowed for both intraprofessional and interprofessional comparisons, which are discussed in turn. Findings are presented through quantitative analyses, contextualised with international literature, and triangulated with qualitative insights.

5.6.1 Availability and Perceived Effectiveness of Support Systems: Intraprofessional Comparisons

For this objective, participants were first grouped by profession (medical practitioners, nurses, and pharmacists) and then subdivided according to whether they identified as second victims. This structure enabled the evaluation of perceived support measures within each profession, while highlighting differences in how second victim status shaped support needs. Both formal resources, such as managerial and psychological services, and informal resources, including collegial and peer support, were assessed. This approach offered a profession-specific perspective on how the lived experience of the SVP influenced the value placed on different forms of support.

5.6.1.1 Support Availability and Perceptions in Medical Practitioners by Second Victim Status

In this study, medical practitioners most frequently rated legal consultation (M = 1.66, SD = 0.97), post-event information (M = 1.74, SD = 0.98), and opportunities for emotional/ethical discussion (M = 1.79, SD = 0.94) as the most helpful forms of support. However, no significant differences emerged between second victims (n = 132) and non-second victims (n = 36) and H_0 was retained (Table 4.34).

Despite this, actual engagement was limited: only 30.6% reported receiving support, while nearly two-thirds (65.7%) did not seek help. Of those who accessed support, colleagues were most frequently cited (54.7%), followed by family and friends (20.3%) and superiors (17.2%). In contrast, management (1.6%) and psychological services (6.3%) were rarely utilised.

These findings are consistent with international data indicating that physicians tend to underutilise formal support systems, despite recognising their potential value. In the SeViD-III study, German emergency physicians similarly reported minimal uptake of psychological or managerial support, relying instead on informal peer networks (Marung et al., 2023). Cultural expectations of resilience and self-sufficiency have been shown to discourage help-seeking among medical practitioners (Edrees et al., 2011; Choi et al., 2022). Qualitative accounts reinforced this reluctance to seek support. Some medical practitioners simply answered "*NIL*" (participant MP206) or "*n/a*" (participant MP187) when asked about support, reflecting either avoidance or absence of structured resources. Others stressed systemic shortcomings, for example: "*Help should be integrated in a structured way since making the second victim reach out themselves will reduce the chance of taking on the offer*" (participant MP158). These accounts illustrate how disengagement may not only reflect individual reluctance but also systemic failures to provide accessible, visible support.

5.6.1.2 Support Availability and Perceptions in Nurses by Second Victim Status

Nurses demonstrated higher engagement with support systems compared with medical practitioners. In this study, 45.9% reported receiving support, 11.0% asked but did not receive it, and 43.1% did not seek help. Among those who accessed support, colleagues were most frequently cited (52.3%), followed by family and friends (16.7%), management (13.6%), superiors (9.1%), and psychological or pastoral care (6.8%). Importantly, second victims consistently rated multiple support strategies, including collegial support, informal emotional discussion, institutional clarity, and preventive feedback, as significantly more helpful than non-second

victims. This finding supported H_1, indicating that perceptions of support availability and usefulness varied by second victim status (Table 4.34).

This pattern mirrors international research showing that the lived experience of second victimhood sharpens nurses' appreciation of supportive interventions. Austrian nurses in the SeViD-A2 study, for example, valued collegiality, preventive feedback, and emotional discussion more highly when they had personally experienced adverse events (Potura et al., 2024). Similarly, Catalán et al. (2021) found that student nurses often relied heavily on peers but reported inconsistent managerial backing, which limited recovery.

Thematic responses from this study supported these findings. Some nurses highlighted direct supervisory help: "*My charge nurse at the time was supportive*" (participant N172). Participant N248 recalled structured interventions: "*Psychology sessions were organised for the staff to help cope with this difficult patient.*" Together, these examples reinforce the quantitative results and align with international research, demonstrating that nurses value both informal collegiality and accessible organisational initiatives.

5.6.1.3 Support Availability and Perceptions in Pharmacists by Second Victim Status

In this study, 36–38% of pharmacists reported receiving support, 8–9% asked for it but did not receive it, and more than half did not seek help. Colleagues were most commonly cited (36.1%), followed by management (22.2%), family and friends (19.4%), and psychological services (19.4%), while superiors were rarely mentioned (2.8%). Interestingly, a Mann–Whitney U test indicated that non-second victims rated

time off work (M = 1.86 vs. 2.24, p = 0.002) and institutional clarity (M = 1.61 vs. 1.93, p = 0.022) as more helpful than second victims, suggesting that expectations of support may exceed the reality experienced by those directly affected, partially supporting the SV-status hypothesis (see Table 4.34).

This finding is consistent with international work. In the SeViD-A1 and A2 studies, non-victims similarly overestimated the helpfulness of support mechanisms that they had not personally used (Potura et al., 2023). The SeViD-IX study of German general practitioners also reported that institutional clarity was valued, yet persistent gaps in psychological care limited its effectiveness (Bushuven et al., 2024).

Qualitative data contextualised these patterns. More than half of the pharmacists in this study worked in community settings, often alone, limiting access to peer networks. This explains their greater reliance on management and external resources. Participants explicitly called for clearer frameworks and emergency psychological services: "*We need 24-hour available support (psychologist)"* (participant P100); "*I wish the organisation provided us with this support when the need arises"* (participant 276). In some cases, external authorities were listed as sources of support, such as "*Police Force*" (participant P35), highlighting the absence of tailored institutional mechanisms.

In this study, the findings indicated that healthcare professionals differed in how they accessed and valued support, with second victims placing greater emphasis on collegial and structured interventions, while non-victims tended to overestimate the usefulness of certain measures.

5.6.2 Support Availability and Perceived Effectiveness of Support Systems: Interprofessional Comparisons

This section examined how support availability and perceived effectiveness varied across medical practitioners, nurses, and pharmacists, highlighting interprofessional similarities and differences in both lived experiences and expectations of support.

5.6.2.1 Support Availability and Perceptions of Support Reported by Second Victims

Among participants who had experienced SVP, perceived support needs were more consistent across professions. A Kruskal–Wallis H test revealed that the only significant difference concerned ‘organised collegial help,’ which medical practitioners and nurses rated as more helpful than pharmacists ($H(2) = 11.31$, $p = 0.003$*)*.This is in line with hypotheses H_1 on interprofessional variation in support (Table 4.34). Although SeViD studies did not directly compare professions on this measure, SeViD-A2 found that over 90% of Austrian nurses preferred collegial support (Potura et al., 2024), underscoring the centrality of peer-based structures for nursing recovery. In a separate study, Lin et al. (2023) reported that the majority of paediatric surgeons (82%) turned to colleagues for support, largely due to concerns about potential consequences if they formally reported the incident.

5.6.2.2 Support Availability and Perceptions of Support Reported by Non-Second Victims

For participants who had not experienced SVP, analyses using the Kruskal–Wallis H test revealed significant variation across the three professions in how helpful they perceived several forms of support in line with the Interprofessional hypothesis H_1

among non-SVs (Table 4.34). Differences reached significance for time away from work ($H(2) = 6.04$, $p = 0.049$), access to professional counselling ($H(2) = 6.41$, $p = 0.041$), provision of clear institutional information ($H(2) = 13.13$, $p = 0.001$), rapid crisis intervention ($H(2) = 8.67$, $p = 0.013$), assistance while continuing patient care ($H(2) = 7.42$, $p = 0.024$), clarity around role expectations ($H(2) = 10.96$, $p = 00.004$), opportunities to provide prevention feedback ($H(2) = 8.74$, $p = 0.013$), and legal advice ($H(2) = 11.25$, $p = 0.004$). On each of these measures, pharmacists assigned higher helpfulness ratings than either nurses or medical practitioners, as reflected in their lower mean ranks. No other support options showed significant differences ($p > 0.05$). Comparable international research has reported similar tendencies: SeViD-A1 found that non-victims frequently rated supports they had never used as especially valuable (Potura et al., 2023).

5.7 Gaps in Support Availability and Perceived Effectiveness

Table 5.4 highlights that while healthcare professionals in Malta used selected support options, important gaps remained between what was available and what was perceived as effective. Medical practitioners underutilised formal services; nurses reported inconsistent organisational backing, while pharmacists face isolation and unmet needs for structured frameworks. Interprofessional comparisons revealed both the undervaluation of collegial support by pharmacists and an overestimation of support usefulness among non-second victims.

Table 5.4:

Limitations in Available and Perceived Support for Healthcare Professionals in Malta

Area	Current Situation	Limitations Identified
Medical practitioners	Relied primarily on peers; valued legal consultation and post-event information.	Formal supports (e.g., managerial and psychological services) underutilised or unavailable; help often dependent on self-referral rather than structured provision.
Nurses	Accessed a broader mix of supports, including collegial networks, organisational clarity, and supervisory help.	Managerial and organisational backing was inconsistent; second victims reported higher perceived usefulness than non-victims, suggesting lived needs not fully met.
Pharmacists	Often turned to management, psychological services, or external authorities (e.g., police) due to isolated work environments.	Lacked peer access in community settings; called for clear frameworks and 24/7 psychological support, highlighting unmet institutional provision.
Interprofessional – Second Victims	Medical practitioners and nurses rated collegial support as highly valuable.	Pharmacists placed a lower value on collegial help, reflecting weaker peer networks and limited opportunities for shared learning and recovery.
Interprofessional – Non-Second Victims	Pharmacists and non-victims rated multiple supports (time off, institutional clarity, counselling, legal advice) as useful.	Non-victims tended to overestimate the helpfulness of supports they had not directly accessed, creating a gap between perceived and lived effectiveness.

5.8 Limitations and Strengths of the Study

Research Philosophy

The literature highlights the value of combining quantitative and qualitative approaches to study complex and sensitive phenomena, as this enhances validity and depth (Creswell & Plano Clark, 2018). This study adopted mainly a quantitative approach and 3 open-ended questions were added at the end. No specific qualitative method was used. . Quantitative analysis enabled testing of specific hypotheses, while qualitative reflections contextualised lived experiences. However, unlike studies that employed interviews or focus groups for richer exploration (e.g., Braun & Clarke, 2006), this study relied only on open-ended survey responses. This choice provided breadth but limited depth, leaving some aspects unexplored. Surprisingly, possibly because of the nature of the topic under study and its relevance to the respondents, the participants gave deep insights when answering the qualitative questions.

Design (Cross -Sectional)

Previous research has noted that longitudinal approaches are particularly useful for understanding recovery trajectories and changes in coping over time (Creswell & Creswell, 2018; Bowling, 2014). The current study did not align with this methodological approach. By relying on a cross-sectional design, it was only able to capture participants' experiences and responses to the SVP at a single point in time. As such, it could not account for potential fluctuations in symptom severity, coping strategies, or recovery trajectories over an extended period. This limitation was particularly relevant for those participants who indicated that they had not yet

recovered at the time of the survey, as it remained unclear whether their status would have changed if assessed longitudinally.

Methods approach International SVP research, particularly in the SeViD series, has relied primarily on quantitative surveys, often supplemented by qualitative interviews to contextualise findings (Strametz et al., 2021a; Potura et al., 2023). The present study matched this methodological trend by prioritising quantitative analysis while integrating some qualitative data through open-ended responses. This ensured comparability with international benchmarks while capturing participants' voices in the Maltese context.

Tools SeViD and BFI-10

Validated tools are essential for robust SVP research. The literature recognises the SeViD questionnaire as one of the strongest instruments for assessing SVP prevalence, symptom load, and support needs (Strametz et al., 2021). The present study's use of SeViD was therefore a major strength, ensuring comparability with European datasets. The BFI-10 has also been validated for brevity in large surveys (Rammstedt & John, 2007), though the literature cautions that its short length reduces internal consistency compared to longer versions (John & Srivastava, 1999). In line with these concerns, the BFI-10 allowed efficient data collection but limited the ability to detect subtle trait effects, especially for neuroticism and openness.

Pilot testing

The literature stresses the importance of pilot testing to enhance face and content validity and ensure contextual appropriateness (Creswell & Creswell, 2018). This study adhered to this principle by conducting a pilot study with 45 representatives

of all three professions, refining survey clarity and cultural fit. The absence of translation into Maltese, due to participants' proficiency in English, reduced measurement bias.

Sampling (representativeness of the population)

Large, diverse samples are recommended to strengthen generalisability and enable subgroup analysis (Bowling, 2014). This study achieved a strong sample size (N = 900), exceeding statistical requirements and including professionals from public and private hospitals, community care, and industry. This study focused exclusively on nurses, pharmacists, and medical practitioners due to time and resource constraints. While these groups are central to patient care, the exclusion of other healthcare professionals (e.g., physiotherapists, radiographers) may restrict the application of findings to the wider workforce.

Role of participants and anonymity

The literature emphasises that anonymity is essential in sensitive studies to reduce fear of disclosure and increase validity (Polit & Beck, 2010). This study addressed such concerns by allowing respondents to skip items and by categorising demographics into broad ranges. These measures were effective in protecting participants' identities in Malta's small healthcare community, and likely improved response rates. However, as prior research warns (Creswell & Creswell, 2018), such strategies reduced analytic precision. For example, regression models lacked the detail that continuous age or experience data could have provided. Furthermore, the high proportion of *Other* responses in the area of practice variable limited the ability to analyse specialties among medical practitioners and practice areas among nurses.

Risk of Bias

Bias is widely recognised as a challenge in SVP research, especially with self-report instruments (Polit & Beck, 2010). Consistent with the literature, this study faced risks of social desirability bias, where participants may have underreported emotional strain to maintain a professional image. Recall bias, also noted by Mira et al. (2015), was relevant when participants described the timing and intensity of symptoms from past events. Stigma-related bias, highlighted in studies of medical practitioners (Edrees et al., 2011; Choi et al., 2022), was also likely, as some respondents may have felt reluctant to disclose psychological distress despite anonymity. Together, these biases suggest that the prevalence and severity of SVP in Malta may still be underestimated.

5.9 Conclusion

SVP emerged as a widespread issue in Maltese healthcare, marked by differences in symptom burden across professions, varied recovery trajectories, and fragmented support systems. Gaps in awareness and limited, inconsistently accessed supports were evident. While medical practitioners made little use of formal services, nurses encountered uneven organisational backing, and pharmacists reported unmet structural needs. Collectively, the results indicate that current measures do not adequately reflect the practical realities of professional practice. They also highlight the need for context-sensitive strategies, firmly grounded in everyday clinical realities, which guide the conclusions and recommendations that follow.

Chapter 6 - Conclusion and Recommendations

6.1 Introduction

This final chapter provides a summary of the key findings from the study, outlines practical recommendations for healthcare system improvement, and directions for future research. It aims to bridge the study's results with actionable insights that can inform policy and practice. The results of this research support continued academic inquiry into the Second Victim Phenomenon (SVP) within the Maltese healthcare context. Recommendations were set.

6.2 Synopsis of the Research Study

This study was the first comprehensive investigation of the SVP in Malta. It examined prevalence, symptoms, demographic and workplace influences, personality traits, and support systems among medical practitioners, nurses, and pharmacists.

In this study, a chi-square test of independence showed that lifetime SVP prevalence differed significantly across professions, $\chi^2(2, N = 900) = 73.92$, $p < 0.001$, with the highest rates among medical practitioners (77.7%), followed by nurses (69.8%) and pharmacists (42.3%). Awareness of the term "second victim" was low across all groups, with fewer than 40% recognising it. Key events causing the SVP varied across professions, with medical practitioners most often reporting patient deaths, suicides, harm, or aggression; nurses predominantly affected by colleague deaths; and pharmacists by patient aggression and dispensing errors.

Across all groups, emotional and cognitive symptoms were most common, with reliving the incident and self-doubt frequently reported. Medical practitioners reported high prevalence and unresolved trauma, nurses showed the highest rates of depressive mood (34.5%) and insomnia (32.5%), while pharmacists recorded the

highest concentration difficulties (49.2%). Behavioural responses such as substance use or withdrawal were rare, but defensive practice was notable, affecting nearly one-third across professions**.** Most respondents recovered within weeks, yet a minority of medical practitioners (18.9%), nurses (14.7%) and 11.0% of pharmacists. experienced unresolved distress.

Demographic and workplace factors influenced vulnerability. In nurses, older age increased risk, while greater professional experience decreased it. For medical practitioners, older age correlated with more symptoms, whereas inexperience increased distress. Among pharmacists, symptom severity was higher among non-Maltese and female professionals, with those in hospital and community roles most affected.

Personality traits affected the severity but not the likelihood of second victimisation. Neuroticism heightened symptoms for nurses and pharmacists, while openness was linked to higher symptom severity among medical practitioners. Conscientiousness offered slight protective effects for nurses, whereas extraversion and agreeableness were not significant. Mediation analyses showed these traits mainly served as direct predictors, with weak and inconsistent indirect effects.

Support-seeking behaviours varied across professions. Peer and colleague support were most common and valued, while formal managerial and psychological services were seldom used. Medical practitioners tended to withdraw from formal support, nurses combined informal and institutional support, and pharmacists, especially in community settings, preferred structured strategies but had limited access to them.

Finally, interprofessional comparisons revealed distinct patterns. Nurses experienced the heaviest symptoms, pharmacists encountered fewer incidents but expected more institutional support, and medical practitioners emphasised the persistent influence of a blame culture as a barrier to recovery.

6.3 Conclusions from this study

This study provided the first national insight into the SVP in Malta, showing that it is widespread, particularly among medical practitioners, followed by nurses and pharmacists. Overall, these findings indicate that second victim experiences in Malta are shaped by professional roles, workplace environments, and individual traits. The impact was mainly psychological, with symptoms such as reliving the situation, self-doubt, depressive mood, and insomnia most prominent, and defensive practice emerging as a common behavioural response. While peer support was valued across professions, formal organisational and psychological services were rarely accessed due to stigma, limited visibility, and a persistent blame culture. These findings underline the need for tailored, system-level interventions to support healthcare workers effectively and to strengthen compassionate, safe patient care.

6.4 Recommendations

The findings of this study highlight the importance of a structured national strategy to address the SVP in Malta. To provide coherence, the recommendations are organised across short-, medium-, and long-term timeframes and are structured using the five-tier support model proposed by Mira et al. (2024) (refer to Figure 2.2).

By integrating quantitative and qualitative findings with the tiered framework, the table highlights how different professional groups may engage with support at the clinical level (micro), team and organisational (meso), and national (macro) levels. These recommendations are presented in Table 6.1. Details are given in the sections below.

Table 6.1.

Time-Structured Access Pathways and Recommendations by Profession

Timeframe	Medical Practitioners	Nurses	Pharmacists
Short-term	**Micro**: Awareness Peer/family support **Meso**: Structured debriefings, Managerial check-ins **Macro**: Legal/ethical consultations, National awareness drives	Micro: Awareness Collegial/charge nurse support Meso: Ward debriefings Rest spaces Macro: Legal consultations, Awareness campaigns	Micro: CPD on SVP Self-recognition Meso: Hospital debriefings Managerial support Macro: 24/7 helplines
Medium-term	**Micro**: Resilience/self-care Buddy schemes **Meso**: Train leaders in just culture/supportive communication **Macro**: National monitoring Anonymous reporting with SVP education	Micro: Resilience/self-care Peer validation Meso: Peer-support hubs, Structured feedback Macro: Institution collaboration SVP monitoring/education	Micro: Peer networks CPD with SVP Meso: Extend support to community pharmacists Macro: Cross-cultural peer groups Legal consultations
Long-term	**Micro**: Reflective practice Wellbeing in training Meso: Institutionalise SVP prevention in hospitals Macro: SVP in Workforce Strategy	Micro: Normalise openness Reduce stigma Meso: Embed SVP in nursing protocols/culture Macro: Workforce Strategy	Micro: SVP in UG/PG pharmacy curricula Meso: Chamber-led profession-wide frameworks Macro: Integrate in wellbeing/safety strategies Professional Council, Associations

6.4.1 Short-Term Recommendations (0–12 Months): Foundational Actions

For medical practitioners, it is recommended to strengthen existing Tier 2 (micro) peer validation to mitigate reputational pressures, while introducing Tier 3 (meso) debriefings and managerial check-ins. Clearer communication and promotion of Tier 4 institutional psychological services are also recommended to address current underuse.

For nurses, it is recommended to reinforce Tier 2 (micro) collegial support and introduce consistent Tier 3 (meso) ward-based debriefings. In parallel, Tier 5 (macro/meso) culture-building measures should be introduced to counter blame dynamics and ensure recovery mechanisms are embedded across settings.

For community pharmacists, it is recommended to introduce Tier 2 (micro) CPD and self-care initiatives to reduce professional isolation, complemented by Tier 5 (macro) helplines and union/Chamber-led schemes to address integration and support gaps.

6.4.2 Medium-Term Recommendations (1–3 Years): System Building and Institutionalisation

For medical practitioners, it is recommended that Tier 3 (meso) debriefings and managerial support be formally adopted as routine practice, while Tier 4 (institutional psychological services) are expanded with stronger confidentiality safeguards.

For nurses, it is recommended that Tier 2 (micro) resilience and self-care training be built into professional development, with Tier 3 (meso) ward-based debriefings standardised across clinical areas.

For pharmacists, it is recommended that Tier 3 (meso) peer networks be established in hospitals and extended to community practice, alongside the development of Tier 5 (macro) external psychological and legal services to meet systemic needs.

6.4.3 Long-Term Recommendations (3+ Years): System Integration and Sustainability

For medical practitioners, it is recommended that Tier 1 (micro/macro/meso) just culture principles be fully integrated into national policy and organisational governance**,** ensuring that reputational risks are reduced and accountability is balanced with learning.

For nurses, it is recommended that Tier 3 (meso) debriefing protocols and managerial advocacy be firmly established as standard practice**,** while Tier 1 (macro/meso) culture-building efforts are reinforced through collaboration with the Regulatory Council and the Professional Associations to embed long-term systemic change.

For pharmacists, it is recommended that Tier 5 (macro) external supports such as legal, psychological, and 24/7 helplines, be consolidated through the Regulatory Council and Professional Associations, with particular attention to equitable access for community pharmacists facing professional isolation. This could be achieved by establishing a regulatory framework that guarantees access to second victim resources, supports association-led initiatives such as peer support groups or confidential helplines, and sets clear standards to ensure pharmacists can seek help without stigma or professional repercussions.

6.5 Future Research

6.5.1 Methodology and Self-Report Bias

The reliance on self-report instruments such as the SeViD and BFI-10, while widely used in international research, presents limitations. These tools are vulnerable to social desirability bias, particularly in professional cultures where emotional vulnerability is stigmatised. Even in anonymous surveys, participants may downplay or omit psychological symptoms to avoid perceived judgment. Future studies are required to mitigate these limitations by triangulating survey findings with additional data sources, such as sick-leave records or peer-reported observations, which are practical and commonly collected in healthcare systems. Time-sensitive approaches, such as short follow-up surveys distributed within weeks of an adverse event, would also help reduce recall bias in a feasible manner.

6.5.2 Study Design and Qualitative Depth

The qualitative insights generated in this study were limited to short open-text survey responses, which, while useful, did not permit probing or follow-up. Future research could feasibly adopt semi-structured interviews or moderated focus groups, both of which are widely used in healthcare research and can be organised within hospitals or professional bodies. These methods would uncover richer accounts of guilt, blame, isolation, and recovery, while remaining practical for use alongside survey-based data collection.

6.5.3 Measurement of Personality Traits

While the BFI-10 was a practical choice given its brevity, its limited scope may have reduced its ability to capture complex constructs such as neuroticism and openness in sufficient detail. Future studies could employ the BFI-44, which is still widely accessible and available in validated translations, to generate more comprehensive personality profiles. Although longer, its use is feasible if administered alongside a focused survey design that avoids unnecessary burden for participants.

6.5.4 Contextual and Cultural Factors

Stigma and workplace culture remain critical barriers to disclosure. Internalised stigma may discourage healthcare workers from reporting emotional struggles, even in anonymous surveys, while entrenched blame culture can reinforce silence. Future research could explore these issues through small-group discussions or interviews conducted in neutral, supportive settings. These approaches are both feasible and well-established in qualitative healthcare research, providing safe spaces for participants to reflect on their experiences. This study was intended to collect the perspectives of individuals. It is recommended to include perspectives of other stakeholders such as the organisational level. Future research should therefore engage healthcare managers and policymakers to examine how system-level processes, workplace culture, and institutional support mechanisms influence these experiences. Considering the issue from an organisational standpoint would create a more complete picture of second victim experiences and ensure that staff recovery is supported within a culture of learning and psychological safety.

6.6 General Conclusion

Beyond generating descriptive evidence, this study contributes to the wider effort to integrate the needs of second victims into healthcare workforce planning. The results were mapped onto the five-tiered support model proposed by Seys et al. (2013), which ranges from informal peer support at the individual level to formal organisational, professional, and policy-level interventions. Building on this foundation, the present research developed time-structured, profession-specific recommendations for medical practitioners, nurses, and pharmacists across micro, meso, and macro levels. This framework provides a practical roadmap for short-, medium-, and long-term system building.

While Malta's Health Workforce Strategy 2022–2030 establishes broad commitments to equity, innovation, and sustainability, it does not explicitly address SVP. The findings of this study fill that gap by showing how the Strategy's principles can be operationalised to support healthcare professionals following adverse events. Equity is enhanced by extending support to all professions, including isolated groups such as community pharmacists. Innovation is reflected in proposals such as 24/7 helplines, anonymous reporting systems, and cross-cultural peer groups. Sustainability is promoted by embedding SVP awareness and prevention in education, organisational culture, and workforce planning, thereby reducing burnout, attrition, and defensive practice.

In this way, the study not only advances academic understanding of SVP but also provides actionable, evidence-based pathways to strengthen workforce resilience and safeguard compassionate, safe patient care in Malta.

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Appendices

APPENDIX A

THE QUESTIONNAIRES FOR EACH PROFESSION

The Second Victim Phenomenon: a case study for Malta (medical practitioners)

Information letter

My name is Lucienne Quintano and I am currently reading for a Master of Science in Leadership and Management at the University of Malta. This research aims to study the second victim phenomenon among medical practitioners, pharmacists and nurses in Malta.

A second victim can be defined as any healthcare worker, directly or indirectly involved in an unanticipated adverse patient event, unintentional healthcare error, or patient injury and who becomes victimised in the sense that they are also negatively impacted.

Key incidents leading to the second victim phenomenon, irrespective of being directly or indirectly involved, may include:

- Incident with patient harm
- Incident without patient harm (near miss)
- Unexpected death/ suicide of a patient
- Unexpected death/ suicide of a colleague
- Aggressive patients or relatives

Second victims usually face a range of symptoms such as fear of being excluded by colleagues, fear of legal action and losing the job, concentration difficulties, feelings of shame, guilt, self- doubt, aggression, or overly cautious defensive behaviour. Healthcare systems should establish different support programmes to help them from two levels, namely from a personal level and also from a professional level.

As part of this study, you are invited to complete this survey, which will take approximately 8 minutes. Any data collected from this survey will be used solely for the purposes of this study. There are no direct benefits or anticipated risks in taking part, however this study will provide insight about the second victim phenomenon in Malta.

Results will be used to make recommendations for improvement of services and the establishment of support programmes for healthcare professionals who experience this phenomenon. Participation is entirely voluntary, i.e., you are free to accept or refuse to participate.

At no point will you be asked to provide your name or any other personal data that may lead to you being identified. Furthermore, you may skip over any questions that you do not wish to answer, or go back to them. If you wish to participate in this study, please click the button that says “yes”. If you do not wish to participate, please click “no".

Should you have any questions or concerns, you may contact myself on lucienne.quintano.96@um.edu.mt or my research supervisor Dr. Patricia Vella Bonanno on patricia.vella-bonanno@um.edu.mt

Yours Sincerely,

Lucienne Quintano

Declaration by respondent: I hereby confirm that I am 18 years of age or older. I am aware that completing and submitting this anonymous questionnaire implies that I am participating voluntarily and with full informed consent on the conditions listed above.

Question Title

1. I agree to participate

- Yes
- No

Next

The Second Victim Phenomenon: a case study for Malta (medical practitioners)

Question Title

* 2. Please state a reason why you do not consent

- It is too much effort
- The context is not properly explained
- The information is too sensitive
- Others

Prev Next

The Second Victim Phenomenon: a case study for Malta (medical practitioners)

Question Title

2. Nationality

- Maltese
- EU national
- Non-EU national

Question Title

3. Gender

- Male
- Female

- Others

Question Title

4. Age

- 20-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70-79

Question Title

5. Employment

- Public
- Private
- Both

Question Title

6. Professional Experience (years)

- 0-9
- 10-19
- 20-29
- 30-39
- 40-49
- 50-59

Question Title

7. Area of practice

- Cardiology
- Dermatology
- Emergency Care
- Endocrinology
- ENT
- Gastroenterology
- Geriatrics
- Mental Health
- Oncology

- Ophthalmology
- Orthopaedics
- Paediatrics
- Pain Management
- Renal
- Others

Question Title
8. Working mode

- Shifts with night
- Same time each day
- Shifts, no nights
- Irregular, no shifts
- Only night shifts
- Other

Question Title
9. Prior to this survey, were you aware of the term "Second victim", which describes a person in healthcare who has been emotionally traumatised by an unexpected clinical event?

- Yes
- No

Question Title
* 10. Have you ever experienced this sort of traumatisation after an event in the course of your professional work in healthcare?

- Yes
- Yes, more than once
- No

Prev Next

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Question Title
11. Did this event (if multiple, at least one of them) occur within the last twelve months?

- Yes
- No

Question Title
12. If you experienced multiple critical events, please think of the most formative of these events (key event). Regardless of whether it was caused by you, what type of event is it?

- Incident with patient harm
- Incident without patient harm / near miss
- Unexpected death / suicide of a patient
- Unexpected death / suicide of a colleague
- Aggressive behaviour of a patient / relative

Other (please specify)

Question Title
13. Did you ever receive support from others after this event?

- Yes
- No, even though I asked for help
- No, I haven't asked anyone for help

Question Title
14. If you received support from others, please indicate by which group (s).

- Colleagues
- Superiors
- Management
- Family / friends
- Pastoral care / psychological counselling / psychotherapy

Other (please specify)

Question Title
15. How long did it take you to fully recover from this key event?

- Less than a week
- Within a week
- Within a month
- Within a year
- More than a year
- I have not fully recovered yet

Question Title
16. Every person who has experienced or witnessed a traumatic event, experiences and processes it differently. However, the following reactions are quite typical according to research findings. How pronounced were the following reactions to the traumatic event for you?

	Strongly pronounced	Weakly pronounced	Not at all	I don't know
Fear of exclusion by colleagues	Fear of exclusion by colleagues	Fear of exclusion by colleagues	Fear of exclusion by colleagues	Fear of exclusion by colleagues
Fear of losing the job	Fear of losing the job	Fear of losing the job	Fear of losing the job	Fear of losing the job
Listlessness	Listlessness	Listlessness	Listlessness	Listlessness
Depressive mood	Depressive mood	Depressive mood	Depressive mood	Depressive mood
Concentration difficulties	Concentration difficulties	Concentration difficulties	Concentration difficulties	Concentration difficulties
Reliving the situation outside the professional activity	Reliving the situation outside the professional activity	Reliving the situation outside the professional activity	Reliving the situation outside the professional activity	Reliving the situation outside the professional activity
Reliving the situation in similar professional situations	Reliving the situation in similar professional situations	Reliving the situation in similar professional situations	Reliving the situation in similar professional situations	Reliving the situation in similar professional situations
Aggressive, intentionally risky behaviour	Aggressive, intentionally risky behaviour	Aggressive, intentionally risky behaviour	Aggressive, intentionally risky behaviour	Aggressive, intentionally risky behaviour
Defensive, overly cautious behaviour	Defensive, overly cautious behaviour	Defensive, overly cautious behaviour	Defensive, overly cautious behaviour	Defensive, overly cautious behaviour
Psychosomatic reactions (headaches, backpain, etc.)	Psychosomatic reactions	Psychosomatic reactions	Psychosomatic reactions	Psychosomatic reactions

	Strongly pronounced	Weakly pronounced	Not at all	I don't know
	(headaches, backpain, etc.)	(headaches, backpain, etc.)	(headaches, backpain, etc.)	(headaches, backpain, etc.)
Insomnia or excessive need for sleep	Insomnia or excessive need for sleep	Insomnia or excessive need for sleep	Insomnia or excessive need for sleep	Insomnia or excessive need for sleep
Use of alcohol / drugs due to the event	Use of alcohol / drugs due to the event	Use of alcohol / drugs due to the event	Use of alcohol / drugs due to the event	Use of alcohol / drugs due to the event
Feelings of shame	Feelings of shame	Feelings of shame	Feelings of shame	Feelings of shame
Feelings of guilt	Feelings of guilt	Feelings of guilt	Feelings of guilt	Feelings of guilt
Self-doubt	Self-doubt	Self-doubt	Self- doubt	Self- doubt
Social isolation	Social isolation	Social isolation	Social isolation	Social isolation
Anger / rage towards others	Anger / rage towards others	Anger / rage towards others	Anger / rage towards others	Anger / rage towards others
Anger / rage towards myself	Anger / rage towards myself Strongly pronounced	Anger / rage towards myself Weakly pronounced	Anger / rage towards myself Not at all	Anger / rage towards myself I don't know
Desire for support by others	Desire for support by others	Desire for support by others	Desire for support by others	Desire for support by others
Desire to process the event for better understanding	Desire to process the event for better understanding	Desire to process the event for better understanding	Desire to process the event for better	Desire to process the event for better understanding

	Strongly pronounced	Weakly pronounced	Not at all	I don't know

Question Title

17. Whether or not you yourself have experienced a traumatising event, we ask you to rate how helpful you find the support measures suggested in the literature for yourself or your colleagues?

	Very helpful	Rather helpful	Rather not helpful	Not helpful at all	I cannot judge this
The possibility to take time off from work directly to process the event	The possibility to take time off from work directly to process the event	The possibility to take time off from work directly to process the event	The possibility to take time off from work directly to process the event	The possibility to take time off from work directly to process the event	The possibility to take time off from work directly to process the event
Access to professional counselling or psycho-logical / psychiatric consultation	Access to professional counselling or psycho-logical / psychiatric consultation	Access to professional counselling or psycho-logical / psychiatric consultation	Access to professional counselling or psycho-logical / psychiatric consultation	Access to professional counselling or psycho-logical / psychiatric consultation	Access to professional counselling or psycho-logical / psychiatric consultation
The possibility to discuss my emotional or ethical thoughts	The possibility to discuss my emotional or ethical thoughts	The possibility to discuss my emotional or ethical thoughts	The possibility to discuss my emotional or ethical thoughts	The possibility to discuss my emotional or ethical thoughts	The possibility to discuss my emotional or ethical thoughts
Clear and timely information regarding the course of action after a serious event (eg., damage analysis, error report)	Clear and timely information regarding the course of action after a serious event (eg., damage analysis, error report)	Clear and timely information regarding the course of action after a serious event (eg., damage analysis, error report)	Clear and timely information regarding the course of action after a serious event (eg., damage analysis, error report)	Clear and timely information regarding the course of action after a serious event (eg., damage analysis, error report)	Clear and timely information regarding the course of action after a serious event (eg., damage analysis, error report)

	Very helpful	Rather helpful	Rather not helpful	Not helpful at all	I cannot judge this
Formal emotional support in the sense of organised collegial help	Formal emotional support in the sense of organised collegial help	Formal emotional support in the sense of organised collegial help	Formal emotional support in the sense of organised collegial help	Formal emotional support in the sense of organised collegial help	Formal emotional support in the sense of organised collegial help
Informal emotional support	Informal emotional support	Informal emotional support	Informal emotional support	Informal emotional support	Informal emotional support
Quick processing of the situation / quick crisis intervention (in a team or individually)	Quick processing of the situation / quick crisis intervention (in a team or individually)	Quick processing of the situation / quick crisis intervention (in a team or individually)	Quick processing of the situation / quick crisis intervention (in a team or individually)	Quick processing of the situation / quick crisis intervention (in a team or individually)	Quick processing of the situation / quick crisis intervention (in a team or individually)
Support / Mentoring when continuing to work with patients	Support / Mentoring when continuing to work with patients	Support / Mentoring when continuing to work with patients	Support / Mentoring when continuing to work with patients	Support / Mentoring when continuing to work with patients	Support / Mentoring when continuing to work with patients
Support when communicating with patients and / or relatives	Support when communicating with patients and / or relatives	Support when communicating with patients and / or relatives	Support when communicating with patients and / or relatives	Support when communicating with patients and / or relatives	Support when communicating with patients and / or relatives
Guidelines regarding the role / activities expected of me during a serious event	Guidelines regarding the role / activities expected of me during a serious event	Guidelines regarding the role / activities expected of me during a serious event	Guidelines regarding the role / activities expected of me during a serious event	Guidelines regarding the role / activities expected of me during a serious event	Guidelines regarding the role / activities expected of me during a serious event

	Very helpful	Rather helpful	Rather not helpful	Not helpful at all	I cannot judge this
		Rather helpful			
Support to be able to take an active role in the processing of the event	Support to be able to take an active role in the processing of the event	Support to be able to take an active role in the processing of the event	Support to be able to take an active role in the processing of the event	Support to be able to take an active role in the processing of the event	Support to be able to take an active role in the processing of the event
A secure possibility to give information on how to prevent similar events in the future	A secure possibility to give information on how to prevent similar events in the future	A secure possibility to give information on how to prevent similar events in the future	A secure possibility to give information on how to prevent similar events in the future	A secure possibility to give information on how to prevent similar events in the future	A secure possibility to give information on how to prevent similar events in the future
The possibility to access legal consultation after a severe event	The possibility to access legal consultation after a severe event	The possibility to access legal consultation after a severe event	The possibility to access legal consultation after a severe event	The possibility to access legal consultation after a severe event	The possibility to access legal consultation after a severe event

Question Title

18. If you are involved in a severe adverse event, are any support measures available to you?

- Yes
- No

If so, which measures are available?

Question Title

19. Will you make use of these measures?

- Yes
- No

Please explain

Question Title

20. How well do the following statements describe your personality? I see myself as someone who ....

	Strongly disagree	Disagree a little	Neither agree or disagree	Agree a little	Strongly agree
....is reserved	....is reserved	....is reserved	....is reserved	....is reserved	....is reserved
....is generally trusting	....is generally trusting	....is generally trusting	....is generally trusting	....is generally trusting	....is generally trusting
....tends to be lazy	....tends to be lazy	....tends to be lazy	....tends to be lazy	....tends to be lazy	....tends to be lazy
....is relaxed, handles stress well	....is relaxed, handles stress well	....is relaxed, handles stress well	....is relaxed, handles stress well	....is relaxed, handles stress well	....is relaxed, handles stress well
....has few artistic interests	....has few artistic interests	....has few artistic interests	....has few artistic interests	....has few artistic interests	....has few artistic interests
....is outgoing, sociable	....is outgoing, sociable	....is outgoing, sociable	....is outgoing, sociable	....is outgoing, sociable	....is outgoing, sociable
....tends to find faults with others	....tends to find faults with others	....tends to find faults with others	....tends to find faults with others	....tends to find faults with others	....tends to find faults with others
....does a thorough job	....does a thorough job Strongly disagree	....does a thorough job Disagree a little	....does a thorough job Neither agree or disagree	....does a thorough job Agree a little	....does a thorough job Strongly agree
....gets nervous easily	....gets nervous easily	....gets nervous easily	....gets nervous easily	....gets nervous easily	....gets nervous easily

	Strongly disagree	Disagree a little	Neither agree or disagree	Agree a little	Strongly agree
....has an active imaginati on	....has an active imagination	....has an active imagination	....has an active imagination	....has an active imagination	....has an active imagination

Question Title

21. Do you have any comments or feedback about the second victim phenomenon?

Question Title

22. Did the experience of an adverse event at your place of work lead to any changes in your life?

Question Title

23. Do you have any comments or remarks about this questionnaire?

Prev Next

The Second Victim Phenomenon: a case study for Malta (nurses)

Information letter

My name is Lucienne Quintano and I am currently reading for a Master of Science in Leadership and Management at the University of Malta. This research aims to study the second victim phenomenon among medical practitioners, pharmacists and nurses in Malta.

A second victim can be defined as any healthcare worker, directly or indirectly involved in an unanticipated adverse patient event, unintentional healthcare error, or patient injury and who becomes victimised in the sense that they are also negatively impacted.

Key incidents leading to the second victim phenomenon, irrespective of being directly or indirectly involved, may include:

- Incident with patient harm
- Incident without patient harm (near miss)
- Unexpected death/ suicide of a patient
- Unexpected death/ suicide of a colleague
- Aggressive patients or relatives

Second victims usually face a range of symptoms such as fear of being excluded by colleagues, fear of legal action and losing the job, concentration difficulties, feelings of shame, guilt, self-doubt, aggression, or overly cautious defensive behaviour. Healthcare systems should establish different support programmes to help them from two levels, namely from a personal level and also from a professional level.

As part of this study, you are invited to complete this survey, which will take approximately 8 minutes. Any data collected from this survey will be used solely for the purposes of this study. There are no direct benefits or

anticipated risks in taking part, however this study will provide insight about the second victim phenomenon in Malta.

Results will be used to make recommendations for improvement of services and the establishment of support programmes for healthcare professionals who experience this phenomenon. Participation is entirely voluntary, i.e., you are free to accept or refuse to participate.

At no point will you be asked to provide your name or any other personal data that may lead to you being identified. Furthermore, you may skip over any questions that you do not wish to answer, or go back to them. If you wish to participate in this study, please click the button that says “yes”. If you do not wish to participate, please click “no".

Should you have any questions or concerns, you may contact myself on lucienne.quintano.96@um.edu.mt or my research supervisor Dr. Patricia Vella Bonanno on patricia.vella-bonanno@um.edu.mt

Yours Sincerely,

Lucienne Quintano

Declaration by respondent: I hereby confirm that I am 18 years of age or older. I am aware that completing and submitting this anonymous questionnaire implies that I am participating voluntarily and with full informed consent on the conditions listed above.

Question Title

1. I agree to participate

- (•) Yes
- ( ) No

Next

The Second Victim Phenomenon: a case study for Malta (nurses)

Question Title

* 2. Please state a reason why you do not consent

- ( ) It is too much effort
- ( ) The context is not properly explained
- ( ) The information is too sensitive
- ( ) Others

The Second Victim Phenomenon: a case study for Malta (nurses)

Question Title

2. Nationality

- Maltese
- EU national
- Non-EU national

Question Title
3. Gender

- Male
- Female
- Others

Question Title
4. Age

- 20-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70-79

Question Title
5. Employment

- Public
- Private
- Both

Question Title
6. Professional Experience (years)

- 0-9
- 10-19
- 20-29
- 30-39
- 40-49
- 50-59

Question Title
7. Area of practice

- Cardiology
- Dermatology
- Emergency Care

- Endocrinology
- ENT
- Gastroenterology
- Geriatrics
- Mental Health
- Oncology
- Ophthalmology
- Orthopaedics
- Paediatrics
- Pain Management
- Renal
- Others

Question Title

8. Working mode

- Shifts with night
- Same time each day
- Shifts, no nights
- Irregular, no shifts
- Only night shifts
- Other

Question Title

9. Prior to this survey, were you aware of the term "Second victim", which describes a person in healthcare who has been emotionally traumatised by an unexpected clinical event?

- Yes
- No

Question Title

* 10. Have you ever experienced this sort of traumatisation after an event in the course of your professional work in healthcare?

- Yes
- Yes, more than once
- No

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The Second Victim Phenomenon: a case study for Malta (nurses)

Question Title

11. Did this event (if multiple, at least one of them) occur within the last twelve months?

- Yes
- No

Question Title

12. If you experienced multiple critical events, please think of the most formative of these events (key event). Regardless of whether it was caused by you, what type of event is it?

- Incident with patient harm
- Incident without patient harm / near miss
- Unexpected death / suicide of a patient
- Unexpected death / suicide of a colleague
- Aggressive behaviour of a patient / relative

Other (please specify)

Question Title

13. Did you ever receive support from others after this event?

- Yes
- No, even though I asked for help
- No, I haven't asked anyone for help

Question Title

14. If you received support from others, please indicate by which group (s).

- Colleagues
- Superiors
- Management
- Family / friends
- Pastoral care / psychological counselling / psychotherapy

Other (please specify)

Question Title

15. How long did it take you to fully recover from this key event?

- Less than a week
- Within a week
- Within a month
- Within a year
- More than a year
- I have not fully recovered yet

Question Title

16. Every person who has experienced or witnessed a traumatic event, experiences and processes it differently. However, the following reactions are quite typical according to research findings. How pronounced were the following reactions to the traumatic event for you?

	Strongly pronounced	Weakly pronounced	Not at all	I don't know
Fear of exclusion by colleagues	Fear of exclusion by colleagues	Fear of exclusion by colleagues	Fear of exclusion by colleagues	Fear of exclusion by colleagues
Fear of losing the job	Fear of losing the job	Fear of losing the job	Fear of losing the job	Fear of losing the job
Listlessness	Listlessness	Listlessness	Listlessness	Listlessness
Depressive mood	Depressive mood	Depressive mood	Depressive mood	Depressive mood
Concentration difficulties	Concentration difficulties	Concentration difficulties	Concentration difficulties	Concentration difficulties
Reliving the situation outside the professional activity	Reliving the situation outside the professional activity	Reliving the situation outside the professional activity	Reliving the situation outside the professional activity	Reliving the situation outside the professional activity
Reliving the situation in similar professional situations	Reliving the situation in similar professional situations	Reliving the situation in similar professional situations	Reliving the situation in similar professional situations	Reliving the situation in similar professional situations
Aggressive, intentionally risky behaviour	Aggressive, intentionally risky behaviour Strongly pronounced	Aggressive, intentionally risky behaviour Weakly pronounced	Aggressive, intentionally risky behaviour Not at all	Aggressive, intentionally risky behaviour I don't know

	Strongly pronounced	Weakly pronounced	Not at all	I don't know
Defensive, overly cautious behaviour	Defensive, overly cautious behaviour	Defensive, overly cautious behaviour	Defensive, overly cautious behaviour	Defensive, overly cautious behaviour
Psychosomatic reactions (headaches, backpain, etc.)	Psychosomatic reactions (headaches, backpain, etc.)	Psychosomatic reactions (headaches, backpain, etc.)	Psychosomatic reactions (headaches, backpain, etc.)	Psychosomatic reactions (headaches, backpain, etc.)
Insomnia or excessive need for sleep	Insomnia or excessive need for sleep	Insomnia or excessive need for sleep	Insomnia or excessive need for sleep	Insomnia or excessive need for sleep
Use of alcohol / drugs due to the event	Use of alcohol / drugs due to the event	Use of alcohol / drugs due to the event	Use of alcohol / drugs due to the event	Use of alcohol / drugs due to the event
Feelings of shame	Feelings of shame	Feelings of shame	Feelings of shame	Feelings of shame
Feelings of guilt	Feelings of guilt	Feelings of guilt	Feelings of guilt	Feelings of guilt
Self-doubt	Self-doubt	Self-doubt	Self-doubt	Self-doubt
Social isolation	Social isolation	Social isolation	Social isolation	Social isolation
Anger / rage towards others	Anger / rage towards others	Anger / rage towards others	Anger / rage towards others	Anger / rage towards others
Anger / rage towards myself	Anger / rage towards myself	Anger / rage towards myself	Anger / rage towards myself	Anger / rage towards myself

	Strongly pronounced	Weakly pronounced	Not at all	I don't know
Desire for support by others	Desire for support by others	Desire for support by others	Desire for support by others	Desire for support by others
Desire to process the event for better understanding	Desire to process the event for better understanding	Desire to process the event for better understanding	Desire to process the event for better understanding	Desire to process the event for better understanding

Question Title

17. Whether or not you yourself have experienced a traumatising event, we ask you to rate how helpful you find the support measures suggested in the literature for yourself or your colleagues?

	Very helpful	Rather helpful	Rather not helpful	Not helpful at all	I cannot judge this
The possibility to take time off from work directly to process the event	The possibility to take time off from work directly to process the event	The possibility to take time off from work directly to process the event	The possibility to take time off from work directly to process the event	The possibility to take time off from work directly to process the event	The possibility to take time off from work directly to process the event
Access to professional counselling or psycho-logical / psychiatric consultation	Access to professional counselling or psycho-logical / psychiatric consultation	Access to professional counselling or psycho-logical / psychiatric consultation	Access to professional counselling or psycho--logical / psychiatric consultation	Access to professional counselling or psycho-logical / psychiatric consultation	Access to professional counselling or psycho-logical / psychiatric consultation
The possibility to discuss my emotional or ethical thoughts	The possibility to discuss my emotional or ethical thoughts	The possibility to discuss my emotional or ethical thoughts	The possibility to discuss my emotional or ethical thoughts	The possibility to discuss my emotional or ethical thoughts	The possibility to discuss my emotional or ethical thoughts
Clear and timely information regarding the course	Clear and timely information regarding	Clear and timely information regarding	Clear and timely information regarding the	Clear and timely information regarding	Clear and timely information regarding

	Very helpful	Rather helpful	Rather not helpful	Not helpful at all	I cannot judge this
of action after a serious event (eg. damage analysis, error report)	the course of action after a serious event (eg. damage analysis, error report)	the course of action after a serious event (eg. damage analysis, error report)	course of action after a serious event (eg. damage analysis, error report) Rather not helpful	the course of action after a serious event (eg. damage analysis, error report)	the course of action after a serious event (eg. damage analysis, error report)
Formal emotional support in the sense of organised collegial help	Formal emotional support in the sense of organised collegial help	Formal emotional support in the sense of organised collegial help	Formal emotional support in the sense of organised collegial help	Formal emotional support in the sense of organised collegial help	Formal emotional support in the sense of organised collegial help
Informal emotional support	Informal emotional support	Informal emotional support	Informal emotional support	Informal emotional support	Informal emotional support
Quick processing of the situation / quick crisis intervention (in a team or individually)	Quick processing of the situation / quick crisis intervention (in a team or individually)	Quick processing of the situation / quick crisis intervention (in a team or individually)	Quick processing of the situation / quick crisis intervention (in a team or individually)	Quick processing of the situation / quick crisis intervention (in a team or individually)	Quick processing of the situation / quick crisis intervention (in a team or individually)
Support / Mentoring when continuing to work with patients	Support / Mentoring when continuing to work with patients	Support / Mentoring when continuing to work with patients	Support / Mentoring when continuing to work with patients	Support / Mentoring when continuing to work with patients	Support / Mentoring when continuing to work with patients
Support when communicating with patients and / or relatives	Support when communicating with patients and / or relatives	Support when communicating with patients and / or relatives	Support when communicating with patients and / or relatives	Support when communicating with patients and / or relatives	Support when communicating with patients and / or relatives

	Very helpful	Rather helpful	Rather not helpful	Not helpful at all	I cannot judge this
Guidelines regarding the role / activities expected of me during a serious event	Guidelines regarding the role / activities expected of me during a serious event	Guidelines regarding the role / activities expected of me during a serious event	Guidelines regarding the role / activities expected of me during a serious event	Guidelines regarding the role / activities expected of me during a serious event	Guidelines regarding the role / activities expected of me during a serious event
Support to be able to take an active role in the processing of the event	Support to be able to take an active role in the processing of the event	Support to be able to take an active role in the processing of the event	Support to be able to take an active role in the processing of the event	Support to be able to take an active role in the processing of the event	Support to be able to take an active role in the processing of the event
A secure possibility to give information on how to prevent similar events in the future	A secure possibility to give information on how to prevent similar events in the future	A secure possibility to give information on how to prevent similar events in the future	A secure possibility to give information on how to prevent similar events in the future	A secure possibility to give information on how to prevent similar events in the future	A secure possibility to give information on how to prevent similar events in the future
The possibility to access legal consultation after a severe event	The possibility to access legal consultation after a severe event	The possibility to access legal consultation after a severe event	The possibility to access legal consultation after a severe event	The possibility to access legal consultation after a severe event	The possibility to access legal consultation after a severe

Question Title

18. If you are involved in a severe adverse event, are any support measures available to you?

- Yes
- No

If so, which measures are available?

Question Title

19. Will you make use of these measures?

- Yes
- No

Please explain

Question Title

20. How well do the following statements describe your personality? I see myself as someone who ....

	Strongly disagree	Disagree a little	Neither agree or disagree	Agree a little	Strongly agree
....is reserved	....is reserved	....is reserved	....is reserved	....is reserved	....is reserved
....is generally trusting	....is generally trusting	....is generally trusting	....is generally trusting	....is generally trusting	....is generally trusting
....tends to be lazy	....tends to be lazy Strongly disagree	....tends to be lazy Disagree a little	....tends to be lazy Neither agree or disagree	....tends to be lazy Agree a little	....tends to be lazy Strongly agree
....is relaxed, handles stress well	....is relaxed, handles stress well	....is relaxed, handles stress well	....is relaxed, handles stress well	....is relaxed, handles stress well	....is relaxed, handles stress well
....has few artistic interests	....has few artistic interests Strongly disagree	....has few artistic interests Disagree a little	....has few artistic interests Neither agree or disagree	....has few artistic interests Agree a little	....has few artistic interests Strongly agree
....is outgoing, sociable	....is outgoing, sociable	....is outgoing, sociable	....is outgoing, sociable	....is outgoing, sociable	....is outgoing, sociable
....tends to find faults with others	....tends to find faults with others	....tends to find faults with others	....tends to find faults with others	....tends to find faults with others	....tends to find faults with others

	Strongly disagree	Disagree a little	Neither agree or disagree	Agree a little	Strongly agree
....does a thorough job	....does a thorough job	....does a thorough job	....does a thorough job	....does a thorough job	....does a thorough job
....gets nervous easily	....gets nervous easily	....gets nervous easily	....gets nervous easily	....gets nervous easily	....gets nervous easily
....has an active imagination	....has an active imagination	....has an active imagination	....has an active imagination	....has an active imagination	....has an active imagination

Question Title

21. Do you have any comments or feedback about the second victim phenomenon?

Question Title

22. Did the experience of an adverse event at your place of work lead to any changes in your life?

Question Title

23. Do you have any comments or remarks about this questionnaire?

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The Second Victim Phenomenon: a case study for Malta (pharmacists)

Information Letter

My name is Lucienne Quintano and I am currently reading for a Master of Science in Leadership and Management at the University of Malta. This research aims to study the second victim phenomenon among medical practitioners, pharmacists and nurses in Malta.

A second victim can be defined as any healthcare worker, directly or indirectly involved in an unanticipated adverse patient event, unintentional healthcare error, or patient injury and who becomes victimised in the sense that they are also negatively impacted.

Key incidents leading to the second victim phenomenon, irrespective of being directly or indirectly involved, may include:

- Incident with patient harm
- Incident without patient harm (near miss)
- Unexpected death/ suicide of a patient
- Unexpected death/ suicide of a colleague
- Aggressive patients or relatives

Second victims usually face a range of symptoms such as fear of being excluded by colleagues, fear of legal action and losing the job, concentration difficulties, feelings of shame, guilt, self-doubt, aggression, or overly cautious defensive behaviour. Healthcare systems should establish different

support programmes to help them from two levels, namely from a personal level and also from a professional level.

As part of this study, you are invited to complete this survey, which will take approximately 8 minutes. Any data collected from this survey will be used solely for the purposes of this study. There are no direct benefits or anticipated risks in taking part, however this study will provide insight about the second victim phenomenon in Malta.

Results will be used to make recommendations for improvement of services and the establishment of support programmes for healthcare professionals who experience this phenomenon. Participation is entirely voluntary, i.e., you are free to accept or refuse to participate.

At no point will you be asked to provide your name or any other personal data that may lead to you being identified. Furthermore, you may skip over any questions that you do not wish to answer, or go back to them. If you wish to participate in this study, please click the button that says “yes”. If you do not wish to participate, please click “no".
Should you have any questions or concerns, you may contact myself on lucienne.quintano.96@um.edu.mt or my research supervisor Dr. Patricia Vella Bonanno on patricia.vella-bonanno@um.edu.mt

Yours Sincerely,

Lucienne Quintano

Declaration by respondent: I hereby confirm that I am 18 years of age or older. I am aware that completing and submitting this anonymous questionnaire implies that I am participating voluntarily and with full informed consent on the conditions listed above.

Question Title

1. I agree to participate

- (•) Yes
- ( ) No

Next

The Second Victim Phenomenon: a case study for Malta (pharmacists)

Question Title

* 2. Please state a reason why you do not consent

- ( ) It is too much effort
- ( ) The context is not properly explained
- ( ) The information is too sensitive

- Others

Prev Next

The Second Victim Phenomenon: a case study for Malta (pharmacists)

Question Title

2. Nationality

- Maltese
- EU national
- Non-EU national

Question Title

3. Gender

- Male
- Female
- Others

Question Title

4. Age

- 20-29
- 30-39
- 40-49
- 50-59
- 60-69
- 70-79

Question Title

5. Employment

- Public
- Private
- Both

Question Title

6. Professional Experience (years)

- 0-9
- 10-19
- 20-29
- 30-39
- 40-49
- 50-59

Question Title
7. Area of practice

- Industry
- Community pharmacy
- Importation and wholesale dealing (including medical representation)
- Hospital
- Regulatory Affairs
- Other areas of practice

Question Title
8. Working mode

- Shifts with night
- Same time each day
- Shifts, no nights
- Irregular, no shifts
- Only night shifts
- Other

Question Title
9. Prior to this survey, were you aware of the term "Second victim", which describes a person in healthcare who has been emotionally traumatised by an unexpected clinical event?

- Yes
- No

Question Title
* 10. Have you ever experienced this sort of traumatisation after an event in the course of your professional work in healthcare?

- Yes
- Yes, more than once
- No

Prev Next

The Second Victim Phenomenon: a case study for Malta (pharmacists)

Question Title
11. Did this event (if multiple, at least one of them) occur within the last twelve months?

- Yes
- No

Question Title

12. If you experienced multiple critical events, please think of the most formative of these events (key event). Regardless of whether it was caused by you, what type of event is it?

- Incident with patient harm
- Incident without patient harm / near miss
- Unexpected death / suicide of a patient
- Unexpected death / suicide of a colleague
- Aggressive behaviour of a patient / relative

Other (please specify)

Question Title

13. Did you ever receive support from others after this event?

- Yes
- No, even though I asked for help
- No, I haven't asked anyone for help

Question Title

14. If you received support from others, please indicate by which group (s).

- Colleagues
- Superiors
- Management
- Family / friends
- Pastoral care / psychological counselling / psychotherapy

Other (please specify)

Question Title

15. How long did it take you to fully recover from this key event?

- Less than a week
- Within a week
- Within a month
- Within a year
- More than a year
- I have not fully recovered yet

Question Title

16. Every person who has experienced or witnessed a traumatic event, experiences and processes it differently. However, the following reactions are quite typical according to research findings. How pronounced were the following reactions to the traumatic event for you?

	Strongly pronounced	Weakly pronounced	Not at all	I don't know
Fear of exclusion by colleagues	Fear of exclusion by colleagues	Fear of exclusion by colleagues	Fear of exclusion by colleagues	Fear of exclusion by colleagues
Fear of losing the job	Fear of losing the job	Fear of losing the job	Fear of losing the job	Fear of losing the job
Listlessness	Listlessness	Listlessness	Listlessness	Listlessness
Depressive mood	Depressive mood	Depressive mood	Depressive mood	Depressive mood
Concentration difficulties	Concentration difficulties	Concentration difficulties	Concentration difficulties	Concentration difficulties
Reliving the situation outside the professional activity	Reliving the situation outside the professional activity	Reliving the situation outside the professional activity	Reliving the situation outside the professional activity	Reliving the situation outside the professional activity
Reliving the situation in similar professional situations	Reliving the situation in similar professional situations	Reliving the situation in similar professional situations	Reliving the situation in similar professional situations	Reliving the situation in similar professional situations I don't know
Aggressive, intentionally risky behaviour	Aggressive, intentionally risky behaviour	Aggressive, intentionally risky behaviour	Aggressive, intentionally risky behaviour	Aggressive, intentionally risky behaviour
Defensive, overly cautious behaviour	Defensive, overly cautious behaviour	Defensive, overly cautious behaviour	Defensive, overly cautious behaviour	Defensive, overly cautious behaviour

	Strongly pronounced	Weakly pronounced	Not at all	I don't know
Psychosomatic reactions (headaches, backpain, etc.)	Psychosomatic reactions (headaches, backpain, etc.)	Psychosomatic reactions (headaches, backpain, etc.)	Psychosomatic reactions (headaches, backpain, etc.)	Psychosomatic reactions (headaches, backpain, etc.)
Insomnia or excessive need for sleep	Insomnia or excessive need for sleep	Insomnia or excessive need for sleep	Insomnia or excessive need for sleep	Insomnia or excessive need for sleep
Use of alcohol / drugs due to the event	Use of alcohol / drugs due to the event	Use of alcohol / drugs due to the event	Use of alcohol / drugs due to the event	Use of alcohol / drugs due to the event
Feelings of shame	Feelings of shame	Feelings of shame	Feelings of shame	Feelings of shame
Feelings of guilt	Feelings of guilt	Feelings of guilt	Feelings of guilt	Feelings of guilt
Self- doubt	Self-doubt	Self-doubt	Self- doubt	Self-doubt
Social isolation	Social isolation	Social isolation	Social isolation	Social isolation
Anger / rage towards others	Anger / rage towards others	Anger / rage towards others	Anger / rage towards others	Anger / rage towards others
Anger / rage towards myself	Anger / rage towards myself	Anger / rage towards myself	Anger / rage towards myself	Anger / rage towards myself
Desire for support by others	Desire for support by others	Desire for support by others	Desire for support by others	Desire for support by others

	Strongly pronounced	Weakly pronounced	Not at all	I don't know
Desire to process the event for better understanding	Desire to process the event for better understanding	Desire to process the event for better understanding	Desire to process the event for better understanding	Desire to process the event for better understanding

Question Title

17. Whether or not you yourself have experienced a traumatising event, we ask you to rate how helpful you find the support measures suggested in the literature for yourself or your colleagues?

	Very helpful	Rather helpful	Rather not helpful	Not helpful at all	I cannot judge this
The possibility to take time off from work directly to process the event	The possibility to take time off from work directly to process the event	The possibility to take time off from work directly to process the event	The possibility to take time off from work directly to process the event	The possibility to take time off from work directly to process the event	The possibility to take time off from work directly to process the event
Access to professional counselling or psycho-logical / psychiatric consultation	Access to professional counselling or psycho-logical / psychiatric consultation	Access to professional counselling or psycho-logical / psychiatric consultation	Access to professional counselling or psycho-logical / psychiatric consultation	Access to professional counselling or psycho-- logical / psychiatric consultation	Access to professional counselling or psycho-logical / psychiatric consultation
The possibility to discuss my emotional or ethical thoughts	The possibility to discuss my emotional or ethical thoughts	The possibility to discuss my emotional or ethical thoughts	The possibility to discuss my emotional or ethical thoughts	The possibility to discuss my emotional or ethical thoughts	The possibility to discuss my emotional or ethical thoughts
Clear and timely information regarding the course of action after a serious event (eg., damage	Clear and timely information regarding the course of action after a serious event (eg., damage	Clear and timely information regarding the course of action after a serious event (eg., damage	Clear and timely information regarding the course of action after a serious event (eg.,	Clear and timely information regarding the course of action after a serious event (eg., damage	Clear and timely information regarding the course of action after a serious event (eg.,

	Very helpful	Rather helpful	Rather not helpful	Not helpful at all	I cannot judge this
analysis, error report)	analysis, error report)	analysis, error report)	damage analysis, error report)	analysis, error report)	damage analysis, error report)
Formal emotional support in the sense of organised collegial help	Formal emotional support in the sense of organised collegial help	Formal emotional support in the sense of organised collegial help	Formal emotional support in the sense of organised collegial help	Formal emotional support in the sense of organised collegial help	Formal emotional support in the sense of organised collegial help
Informal emotional support	Informal emotional support	Informal emotional support	Informal emotional support	Informal emotional support	Informal emotional support
Quick processing of the situation / quick crisis intervention (in a team or individually)	Quick processing of the situation / quick crisis intervention (in a team or individually)	Quick processing of the situation / quick crisis intervention (in a team or individually)	Quick processing of the situation / quick crisis intervention (in a team or individually)	Quick processing of the situation / quick crisis intervention (in a team or individually)	Quick processing of the situation / quick crisis intervention (in a team or individually)
Support / Mentoring when continuing to work with patients	Support / Mentoring when continuing to work with patients	Support / Mentoring when continuing to work with patients	Support / Mentoring when continuing to work with patients	Support / Mentoring when continuing to work with patients	Support / Mentoring when continuing to work with patients
Support when communicating with patients and / or relatives	Support when communicating with patients and / or relatives	Support when communicating with patients and / or relatives	Support when communicating with patients and / or relatives	Support when communicating with patients and / or relatives	Support when communicating with patients and / or relatives
Guidelines regarding the role / activities expected of me during a serious event	Guidelines regarding the role / activities expected of me during a serious event	Guidelines regarding the role / activities expected of me during a serious event	Guidelines regarding the role / activities expected of me during a serious event	Guidelines regarding the role / activities expected of me during a serious event	Guidelines regarding the role / activities expected of me during a serious event

	Very helpful	Rather helpful	Rather not helpful	Not helpful at all	I cannot judge this
Support to be able to take an active role in the processing of the event	Support to be able to take an active role in the processing of the event	Support to be able to take an active role in the processing of the event	Support to be able to take an active role in the processing of the event	Support to be able to take an active role in the processing of the event	Support to be able to take an active role in the processing of the event
A secure possibility to give information on how to prevent similar events in the future	A secure possibility to give information on how to prevent similar events in the future	A secure possibility to give information on how to prevent similar events in the future	A secure possibility to give information on how to prevent similar events in the future	A secure possibility to give information on how to prevent similar events in the future	A secure possibility to give information on how to prevent similar events in the future
The possibility to access legal consultation after a severe event	The possibility to access legal consultation after a severe event	The possibility to access legal consultation after a severe event	The possibility to access legal consultation after a severe event	The possibility to access legal consultation after a severe event	The possibility to access legal consultation after a severe event

Question Title

18. If you are involved in a severe adverse event, are any support measures available to you?

- Yes
- No

If so, which measures are available?

Question Title

19. Will you make use of these measures?

- Yes
- No

Please explain

Question Title

20. How well do the following statements describe your personality? I see myself as someone who ....

	Strongly disagree	Disagree a little	Neither agree or disagree	Agree a little	Strongly agree
....is reserved	....is reserved	....is reserved	....is reserved	....is reserved	....is reserved
....is generally trusting	....is generally trusting	....is generally trusting	....is generally trusting	....is generally trusting	....is generally trusting
....tends to be lazy	....tends to be lazy	....tends to be lazy	....tends to be lazy	....tends to be lazy	....tends to be lazy
....is relaxed, handles stress well	....is relaxed, handles stress well	....is relaxed, handles stress well	....is relaxed, handles stress well	....is relaxed, handles stress well	....is relaxed, handles stress well
....has few artistic interests	....has few artistic interests	....has few artistic interests	....has few artistic interests	....has few artistic interests	....has few artistic interests
....is outgoing, sociable	....is outgoing, sociable	....is outgoing, sociable	....is outgoing, sociable	....is outgoing, sociable	....is outgoing, sociable
....tends to find faults with others	....tends to find faults with others	....tends to find faults with others	....tends to find faults with others	....tends to find faults with others	....tends to find faults with others
....does a thorough job	....does a thorough job	....does a thorough job	....does a thorough job	....does a thorough job	....does a thorough job
....gets nervous easily	....gets nervous easily	....gets nervous easily	....gets nervous easily	....gets nervous easily	....gets nervous easily
....has an active imaginati on	....has an active imagination	....has an active imagination	....has an active imagination	....has an active imagination	....has an active imagination

Question Title

21. Do you have any comments or feedback about the second victim phenomenon?

Question Title

22. Did the experience of an adverse event at your place of work lead to any changes in your life?

Question Title

23. Do you have any comments or remarks about this questionnaire?

Prev Next

Big Five Inventory-10 (BFI-10)

English version.

Instruction: How well do the following statements describe your personality?

I see myself as someone who …	Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
… is reserved	(1)	(2)	(3)	(4)	(5)
… is generally trusting	(1)	(2)	(3)	(4)	(5)
… tends to be lazy	(1)	(2)	(3)	(4)	(5)
… is relaxed, handles stress well	(1)	(2)	(3)	(4)	(5)
… has few artistic interests	(1)	(2)	(3)	(4)	(5)
… is outgoing, sociable	(1)	(2)	(3)	(4)	(5)
… tends to find fault with others	(1)	(2)	(3)	(4)	(5)
… does a thorough job	(1)	(2)	(3)	(4)	(5)

I see myself as someone who …	Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
… gets nervous easily	(1)	(2)	(3)	(4)	(5)
… has an active imagination	(1)	(2)	(3)	(4)	(5)

APPENDIX B
Use of SEVID questionnaire in Malta- letter to Prof Reinhard Strametz

External

Covering letter for approval to use the validated questionnaire Sevid

Dear Dr Strametz,

My name is Lucienne Quintano and I am currently reading for a Master of Sciences in Health Systems Management and Leadership at the University of Malta. As part of my course requirements, I am

conducting a research study to assess the prevalence of second victims,risk factors and support strategies among doctors, nurses and pharmacists in Malta.

This is a comparitive cross-sectional study using the validated questionnaire Sevid . I am hereby asking for your official permission to enable me to use this tool.

Thanks and regards

Lucienne Quintano
B.Pharm (Hons)
M.Sc.(Melit.) Principal Pharmacist (Mater Dei Hospital)

X

Prof. Dr. Reinhard Strametz

Use of SEVID questionnaire in Malta- letter to Prof Reinhard Strametz

External

Strametz, Reinhard <Reinhard.Strametz@hs-rm.de> 6 Nov 2023, 16:54

to Patricia, Sandra, me

Dear Patricia,

I am looking forward to hear from you and hope you are fine as well.

As pointed during our training school we are more than happy to share our English version of the SeViD questionnaire with you for further use.

Meanwhile there is also a SeViTA and a SeViPOR project with Italy and Portugal so there will be also some data to compare in a European paper afterwards as the questionnaires are now also translated into Italian and Portuguese.

The German version of SeViD was content validated (citable publication), the official English version was translated and back-translated according to WHO standards without prior publication but was also successfully used for SeViTA and SeViPOR. Do you plan to do a Maltese version or would you use the English version? Both would be possible. Anyway, I will ask Victoria to provide all sources until next week (tomorrow we will have our big annual meeting at WiHelP so everybody is a little bit busy).

We used the questionnaire in different German settings: SeViD-I (young doctors in internal medicine), SeViD-II (nurses), SeViD-III (emergency doctors), SeViD-IV (palliative care) ect.. We also used it to survey a hospital with multiple professions in the KoHi-I-study in Vienna so both is possible, local and national use. Demographic factors have to be adapted to the needs of your target group.

Five papers are already published, 7 others are in process. There are answers to all of your other questions.
Maybe it would be best, to meet virtually next week to discuss all aspects. If this is OK I will ask Victoria to make a doodle poll for a Zoom meeting.

Training School 24 will take place in Vienna 22nd-24th May 2024. The call will be shortly opened and you will be informed via ERNST.

Best regards,
Reinhard

--
Prof. Dr. Reinhard Strametz, MD | Chair Patient Safety
Head of Wiesbaden Institute for Healthcare Economics and Patient Safety (WiHelP)
RheinMain UAS | Wiesbaden Business School
Postal Adress: PO Box 3251 | 65022 Wiesbaden
Visiting Adress: Bleichstraße 3 | 65183 Wiesbaden

Patricia Vella Bonanno <patricia.vella-bonanno@um.edu.mt> 7 Nov 2023, 14:12

to Reinhard, Sandra, me

Dear Reinhard,

Thank you for your e-mail.

As pointed our during our training school we are more than happy to share our English version of the SeViD questionnaire with you for further use. Meanwhile there is also a SeViTA and a SeViPOR project with Italy and Portugal so there will be also some data to compare in a European paper afterwards as the questionnaires are now also translated into Italian and Portuguese.

It would be good to be able to compare the data for Malta with data of other European countries.

The German version of SeViD was content validated (citable publication), the official English version was translated and back-translated according to WHO standards without prior publication but was also successfully used for SeViTA and SeViPOR. Do you plan to do a Maltese version or would you use the English version? Both would be possible. Anyway, I will ask Victoria to provide all sources until next week (tomorrow we will have our big annual meeting at WiHelP so everybody is a little bit busy).

All the best for the annual WiHelP meeting.
Most probably we will use the English version of the questionnaire.

We used the questionnaire in different German settings: SeViD-I (young doctors in internal medicine), SeViD-II (nurses), SeViD-III (emergency

doctors), SeViD-IV (palliative care) ect.. We also used it to survey a hospital with multiple professions in the KoHi-I-study in Vienna so both is possible, local and national use. Demographic factors have to be adapted to the needs of your target group.
Five papers are already published, 7 others are in process. There are answers to all of your other questions.

We will discuss and see in which population to do the study. It will be important to design the study in an manner which allows comparison to data from other studies.

Maybe it would be best, to meet virtually next week to discuss all aspects. If this is OK I will ask Victoria to make a doodle poll for a Zoom meeting.

Yes, thank you. This will be a good idea. I will be abroad from Monday 13th to Wednesday 15th November.

Training School 24 will take place in Vienna 22nd-24th May 2024. The call will be shortly opened and you will be informed via ERNST.

Thank you. I do not know whether Lucienne will be able to come to Vienna on those days.

Thank you, your support is much appreciated.

Regards

Patricia

Dr. Patricia Vella Bonanno
B.Pharm (Hons.) (Melit.); MSc. Clinical Pharmacy (QUB); PhD (RGU); MA Management (Melit.)

Senior Lecturer
Faculty of Health Sciences
Department of Health Systems Management and Leadership
Block A, Level 1, Mater Dei Hospital, Msida Malta

APPENDIX C

FREC approval

Lucienne Quintano <lucienne.quintano.96@um.edu.mt> Wed, 24 Apr, 16:29

to Paulann

: Paulann Grech <paulann.grech@um.edu.mt>
Date: Wed, Apr 24, 2024, 9:41 AM
Subject: Re: FHS-2024-00142 Lucienne Quintano
To: Lucienne Quintano <lucienne.quintano.96@um.edu.mt>
Cc: Research Ethics HEALTHSCI <research-ethics.healthsci@um.edu.mt>, Patricia Vella Bonanno <patricia.vella-bonanno@um.edu.mt>

Dear Lucienne,

Thank you for the update. Your recent amendments have been reviewed and approval is granted on behalf of FREC.

Please make sure that the updated documents forwarded to FREC have also been uploaded on the URECA portal, without track changes.

You may continue with your data collection.

Good luck.

Best wishes,

Paulann

Prof. Paulann Grech

Ph.D.(Sheffield), M.Sc.(Psych.), M.Sc.(Hlth.Sci.)
Chair/ FREC - Faculty of Health Sciences
Department of Mental Health
Faculty of Health Sciences
Room 59, Block A, Level 1

From: Borg Bonaci Gabriella at MHA <gabriella.borg-bonaci@gov.mt>
Sent: Friday, September 20, 2024 12:32 PM
To: DPO at MHA - GGH <dpo.ggh@gov.mt>; Data Protection Officer at MHA - NBTS <dpo.nbts@gov.mt>; Data Protection Officer at MHA - POYC <dpo.poyc@gov.mt>; dpo.kgh@gov.mt; DPO Health at MHA <dpo.hpdp@gov.mt>; DPO at Health - OSPH <Dpo.osph@gov.mt>; DPO at MHA <dpo.cmh@gov.mt>; Data Protection at MHA - MHS <dataprotection.mentalhealth@gov.mt>; IVI DataPro at MHA <ividatapro.health@gov.mt>; DataPro at MHA - PHC <dpo.phc@gov.mt>; DPO at Health - DPA <dpo.dpa@gov.mt>; CMO at MHA <cmo.doh@gov.mt>; Data Protection at MHA - Health Policy <dataprotection.dhir@gov.mt>; Data Protection at MHA - AACC <dp.aacc@gov.mt>; dpo at MHA - SVP <dpo-svp@gov.mt>; Customer Care MDH at MHA <customercare.mdh@gov.mt>
Cc: Xuereb Claire at MHA - GGH <claire.p.xuereb@gov.mt>; Corso Daniel at MHA - MHS <daniel.corso@gov.mt>; Camilleri Charlene I at MHA - MDH <charlene.i.camilleri@gov.mt>; Lucienne Quintano <lucienne.quintano.96@um.edu.mt>
Subject: Questionnaire - The Second Victim Phenomenon: a case study for Malta

Good afternoon DPOs,

I trust this email finds you well.

Ms. Quintano is currently pursuing a Master of Science in Leadership and Management at the University of Malta and as part of her studies she is working on her dissertation, titled "The Second Victim Phenomenon: a case study for Malta".

Following a review of Ms. Quintano's application form (attached), please note that the replies to her questions do not request any personal information which might unveil the participants' identification and thereby her research respects anonymity of the research subjects. Moreover, in line with the Data Protection Public Administration Human Resources Corporate Procedures Manual (P&SD 2024), Ms. Quintano's research approval is subject to these special conditions:

1. The personal data accessed or given is only used for that specific purpose to conduct the research and for no other purpose:

2. At the end of this research, all personal data should be destroyed;

3. All references to personal data should be omitted unless consent is specifically obtained from the person identified in the research report; and

4. Participation by public officers in the research being conducted should be at their discretion, and they can refuse any participation whatsoever if they so wish.

You are kindly requested to disseminate the below questionnaires to **medical practitioners, nurses and pharmacists** within your hospital/ directorate/ division/ department. The abovementioned italicised text should be highlighted upon dissemination of this survey to the employees. May I remind you that e-mail addresses of employees cannot be circulated.

Questionnaire for NURSES: https://www.surveymonkey.com/r/VGQNJLV

Questionnaire for MEDICAL PRACTITIONERS: https://www.surveymonkey.com/r/VGYKNW3

Questionnaire for PHARMACISTS: https://www.surveymonkey.com/r/VGJH5Z7

Participation in this study is purely voluntary but participants are encouraged to complete the questionnaire. In case of any difficulties or further clarifications, you are kindly requested to contact Ms. Lucienne Quintano on lucienne.quintano.96@um.edu.mt or 99807870 to discuss the matter further.

Kindly acknowledge email and thank you for your co-operation.

Kind regards,

Gabriella Borg Bonaci
Senior Principal
People Management Division

e gabriella.borg-bonaci@gov.mt
www.gov.mt | www.publicservice.gov.mt | fb.com/servizzpubbliku

MINISTRY FOR HEALTH AND ACTIVE AGEING
15, TRIQ IL-MERKANTI, VALLETTA, MALTA

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The content of this email and any attachment(s) are confidential and intended for the recipient specified in the message only. If you have received it by mistake, please inform us by an email reply and then delete the message. The PMD operates in line with the Data Protection Act (Chapter 586) and the General Data Protection Regulations (EU GDPR 2016/679) hence it is forbidden to copy, forward, alter or in any way reveal the contents of this message to anyone.

APPENDIX D

Intermediary on behalf of “Tobba Maltin” – Dr Stefan Buttigieg- 1

Intermediary for questionnaire on Second victims

External

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Lucienne Quintano <lucienne.quintano.96@um.edu.mt> Sat, 6 Jan, 07:23

to stefan.buttigieg@gov.mt, Patricia, Sandra, bcc: lucienne.quintano

Dear Dr. Buttigieg,

I am a student at the Department of Health Systems Management and Leadership at the Faculty of Health Sciences, currently reading for a Master of Science in Leadership and Management.

I am working on a dissertation entitled "Prevalence of second victims, risk factors and support measures: a study of doctors, nurses and pharmacists in Malta under the supervision of Dr. Patricia Vella Bonanno and Prof. Sandra Buttigieg.

The aims are :
- to assess the prevalence of second victims among healthcare professionals
- to evaluate the factors concerning second victims
- to study the current level of support given
The study will include doctors, nurses and pharmacists.

I would like to ask if it would be possible for you to act as an intermediary on Behalf of Tobba Maltin? If so I will prepare an email with a link to circulate my questionnaire to all doctors who are members of this organisation. How many doctors are members? Does the organisation cover doctors from all specialities?

Thank you for your consideration.

Regards

Lucienne Quintano

Buttigieg Stefan at MHA <stefan.buttigieg@gov.mt> Mon, 29 Jan, 10:35

to Drkvassallo@gmail.com, me, Patricia, Sandra

Lucienne,

I apologise for my delayed response. I'm forwarding your request from my side to the Facebook group's administrator for his approval.

@Drkvassallo@gmail.com do you have any objection to the following research request? From my side, I have no objection to this request.

@Patricia Vella Bonanno

May I recommend that in future requests you also include my colleague Dr Vassallo please?

Best Regards,

Stefan Buttigieg
Resident Specialist
Project Management Office
Information Management Unit

e stefan.buttigieg@gov.mt
www.gov.mt | www.publicservice.gov.mt | fb.com/servizzpubbliku

MINISTRY FOR HEALTH AND ACTIVE AGEING
LEVEL 2, ST LUKE'S HOSPITAL CAMPUS, GWARDAMANGIA HILL, GWARDAMANGA, PIETA', MALTA

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---

Kenneth Vassallo <drkvassallo@gmail.com> Mon, 29 Jan, 21:44

to Buttigieg, me, Patricia, Sandra

Good Evening

I have no objection.

Regards
Dr Kenneth Vassallo
...

[

Buttigieg Stefan at MHA <stefan.buttigieg@gov.mt> Mon, 29 Jan, 23:22

to Kenneth, me, Patricia, Sandra

Dear Ms. Quintano,

Considering Dr Vassallo's approval, I accept acting as an intermediary for this research to disseminate the questionnaire to the doctors forming part of the "Tobba Maltin" Facebook Group.

I emphasize the importance of ensuring full ethical approval before proceeding with the dissemination of said questionnaire. Furthermore, to maintain trust and continue this positive research flow, you ensure that the participants' privacy is protected at all times and that if any personal, potentially identifiable data needs to be collected, the participants are entirely cognisant of this fact and that their data is protected. Please ensure that all of this is outlined clearly in the information sheet.

Kind Regards,

Stefan Buttigieg
Resident Specialist
Project Management Office
Information Management Unit

e stefan.buttigieg@gov.mt
www.gov.mt | www.publicservice.gov.mt | fb.com/servizzpubbliku

MINISTRY FOR HEALTH AND ACTIVE AGEING
LEVEL 2, ST LUKE'S HOSPITAL CAMPUS, GWARDAMANGIA HILL,
GWARDAMANGA, PIETA', MALTA

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Intermediaries for Malta College for Family Doctors and for the Association of Private Family Doctors -2

Dissertation about Second victims in Malta

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Lucienne Quintano <lucienne.quintano.96@um.edu.mt>
20 Mar 2024, 20:09 (9 days ago)
to jasonbonnici2001, jasjbonnici@hotmail.com, Patricia

Dear Dr Bonnici ,

I am a student at the Department of Health Systems Management and Leadership at the Faculty of Health Sciences, currently reading for a Master of Science in Leadership and Management.

I am working on a dissertation entitled "The second victim phenomenon in Malta" under the supervision of Dr. Patricia Vella Bonanno and Prof. Sandra Buttigieg.

The aims are :
- to assess the prevalence of second victims among healthcare professionals
- to evaluate the factors concerning second victims
- to study the current level of support given
The study will include doctors, nurses and pharmacists.

I would like to ask if it would be possible for you to act as an intermediary on behalf of the family doctors of Malta. If so I will prepare an email with a link to circulate my questionnaire to all doctors who are members of this organisation after getting approval from FREC.

Thank you for your consideration.

Regards

Lucienne Quintano

Jason Bonnici
21 Mar 2024, 01:58 (8 days ago)
to jasonbonnici2001@yahoo.com, Patricia, me

Hi

Yes sure

Send what i have to distribute
on secretary@mcfd.org.mt and secretary@apfd.info

Regards
Jason

Get Outlook for Android

Intermediary for Pharmacists- Mr Joseph Busuttil-3
Intermediary for questionnaire on Second Victims

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Lucienne Quintano <lucienne.quintano.96@um.edu.mt> 6 Jan 2024, 07:56

to joseph.a.busuttil, Patricia, Sandra, bcc: lucienne.quintano

Dear Mr. Busuttil ,

I am a pharmacist and I am a student at the Department of Health Systems Management and Leadership, Faculty of Health Sciences, currently reading for a Masters in Management and Leadership.

My dissertation is entitled " Prevalence of second victims, risk factors and support measures: a study of doctors, nurses and pharmacists in Malta". It is under the supervision of Dr. Patricia Vella Bonanno and Prof. Sandra Buttigieg.

The aims are:
- to assess the prevalence of second victims among healthcare professionals
- to evaluate factors concerning second victims
- to study the current level of support given.

The study will include doctors, nurses and pharmacists.

I would like to ask if it would be possible for you, as Registrar of Pharmacy Council, to act as an intermediary and circulate an email with a link to all pharmacists in the Pharmacy Council. Please what is the number of pharmacists to whom this email can be circulated?

Thank you for your consideration.

Regards

Lucienne Quintano

Busuttil Joseph A at Health Regulation <joseph.a.busuttil@gov.mt>
to Sandra, me, Patricia

11 Jan 2024, 07:53

Dear Ms. Quintano,

I trust this email finds you well.

It will be possible for me to circulate the email as is usually done. When you need me to circulate the email, just send the email to be forwarded and when you wish for it to be circulated.

With regard to the number of pharmacists to whom it will be sent, the number at present is around 1280.

Should you need further information do not hesitate to contact me.

Regards,

Joseph Busuttil
Registrar Pharmacy Council
Regulatory Councils
Department for Health Regulation
e joseph.a.busuttil@gov.mt

https://health.gov.mt | www.publicservice.gov.mt | fb.com/servizzpubbliku
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MINISTRY FOR HEALTH

ST LUKE'S HOSPITAL, PJAZZA SAN LUQA,
PIETA', MALTA

Bonett Elizabeth at Health Regulation <elizabeth.bonett@gov.mt>
to me, Patricia, Sandra
Friday 12th January 2024
10.58

Dear Lucienne,
Yes of course, please send me the email and details and I will forward to the registered nurses.

Regards

Elizabeth Bonett
Registrar Nursing & Midwifery Council
Regulatory Councils
Department for Health Regulation

t +356 25953305 **e** elizabeth.bonett@gov.mt
https://health.gov.mt | www.publicservice.gov.mt | fb.com/servizzpubbliku
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MINISTRY FOR HEALTH
ST LUKE'S HOSPITAL, PJAZZA SAN LUQA,
PIETA', MALTA

Cassar Christine at MHA - PHC <christine.cassar@gov.mt> 14 Oct 2024, 11:57
to me, Garzia

Dear both,
Good morning.
The questionnaire regarding *"The Second Victim Phenomenon: A Case Study for Malta"* has been sent to all mentioned employees.
Approximately 550 staff members were included in the BCC section.
Kind regards.
Christine.

Christine Cassar
F/Clinical Chair
Senior Health Carer | Head Office
Health - Primary HealthCare
MINISTRY FOR HEALTH AND ACTIVE AGEING
e christine.cassar@gov.mt
a 7, Sqaq Harper, Floriana, Malta
Kindly consider your environmental responsability before printing this email

4 Oct 2024, 11:58

Data Protection at MHA - MHS <dataprotection.mentalhealth@gov.mt>
to Borg, me

Dear Ms. Quintano,

With reference to the above-named study, this is to confirm that, on the basis of the documentation you submitted, through Ms. Borg Bonaci, from the Mental Health Services data protection point of view you have been cleared to proceed with your study.

Please remember that in no way should you retain any personal or patient details you obtain from your research and this should this be the case, it should be destroyed at the end of your study.

Good luck with your study.

Kind regards,

Michael Gonzi

Data Protection Officer,

Mental Health Services

Tabone Pumpach Mario at MHA - Nursing Services <mario.tabone-pumpach@gov.mt>
to me

31 Oct 2024, 08:00

Dear Ms. Quintano,

I forwarded the survey questionnaire to be disseminated by our office administrator.

Regards,

Mario

Mario Tabone Pumpach
Charge Nurse
Head Office
MHA-Nursing Services
e mario.tabone-pumpach@gov.mt

https://health.gov.mt | publicservice.gov.mt | fb.com/servizzpubbliku
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Zammit Stephen M at MHA - KGRH <stephen.m.zammit@gov.mt>
to DPO, me, Ferry

5 Nov 2024, 08:26

Approved as part of a national study.

Stephen

Stephen M Zammit
CEO
Rehabilitation Hospital
Rehabilitation Services

e stephen.m.zammit@gov.mt

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MINISTRY FOR HEALTH AND ACTIVE AGEING

APPENDIX E

Permission to Reproduce Figure from Mira et al. (2024) in Master's Dissertation

External

Inbox

Lucienne Quintano <lucienne.quintano.96@um.edu.mt> Fri 8 Aug, 08:00 (2 days ago)

to jose.mira@umh.es, Patricia

.

Dear Professor Mira,

My name is Lucienne Quintano, and I am currently completing my Master's dissertation at the University of Malta under my supervisors Dr Patricia Vella Bonanno and Professor Sandra Buttigieg. My research focuses on the Second Victim Phenomenon among medical practitioners, nurses and pharmacists in Malta, and I have found your work to be an invaluable source of insight and guidance throughout the literature review process.

I am writing to kindly request your permission to include *Figure 1 The Vicious Circle of Loss of Quality and Well-being* from your recent publication:

Mira, J., Carillo, I., Tella, S., Vanhaecht, K., Panella, M., Seys, D., Ungureanu, M., Sousa, P., Buttigieg, S. C., Vella-Bonanno, P., Popovici, G., Srulovici, E., Guerra-Paiva, S., Knezevic, B., Lorenzo, S., Lachman, P., Ushiro, S., Scott, S. D., Wu, A., & Strametz, R. (2024). The European researchers' network working on second victim (ERNST) policy statement on the second victim phenomenon for increasing patient safety. *Public Health Reviews, 45*10.3389/phrs.2024.1607175. The figure would be used solely for academic purposes within the context of my dissertation, which will be submitted to the university and made available in the institutional repository. Full credit would be given in the caption and reference list, and I will indicate that the figure is used "with permission from Professor José Mira."

Please let me know if you are willing to grant permission.

Thank you very much for your time and for your important contributions to the field.

Kind regards

Lucienne Quintano

Jose Joaquin Mira Solves Fri 8 Aug, 09:20 (2 days ago)

to me, Patricia

Thanks for your kind message. There is no limitations to use the figure and the concept for academic purpose. The journal requires to include the reference in case of a new publication.
Best

José Joaquín Mira

Patricia Vella Bonanno Fri 8 Aug, 10:18 (2 days ago)

to Jose, me

Dear Jose,

Good to hear from you.

Thank you.

Regards

Patricia

Dr. Patricia Vella Bonanno
B.Pharm (Hons.) (Melit.); MSc. Clinical Pharmacy (QUB); PhD (RGU); MA Management (Melit.)

Senior Lecturer
Faculty of Health Sciences
Department of Health Systems Management and Leadership
Block A, Level 1, Mater Dei Hospital, Msida Malta

*The contents of this email are subject to **these terms**.*

9 Aug 2025, 07:20 (1 day ago)

Lucienne Quintano <lucienne.quintano.96@um.edu.mt>

to Jose, Patricia

Dear Professor Mira,

Thank you very much for granting permission to use the figure and concept for my dissertation. I will ensure that the reference to your work is included should this form part of any future publication.

Kind regards

Lucienne Quintano
University of Malta

APPENDIX F

The following tables depict chi square results showing the demographics and second victim status for the medical practitioners. Similar tests were carried out for the nurses and pharmacists. Table 4.17 (page 124) shows a summary of all these results.

Table F1

Case Processing Summary of demographics for the medical practitioners

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Nationality * Have you ever experienced this sort of traumatisation after an event in the course of your professional work in healthcare?	223	99.6%	1	0.4%	224	100.0%
Gender * Have you ever experienced this sort of traumatisation after an event in the course of your professional work in healthcare?	224	100.0%	0	0.0%	224	100.0%
Age * Have you ever experienced this sort of traumatisation after an event in the course of your professional work in healthcare?	223	99.6%	1	0.4%	224	100.0%
Professional Experience (years) * Have you ever experienced this sort of traumatisation after an event in the course of your professional work in healthcare?	218	97.3%	6	2.7%	224	100.0%

a. Occupation = Medical Practitioners

Table F2

The Second Victim Phenomenon of Medical practitioners by nationality

			Yes	No	
Nationality	Maltese	Count	168	46	214
		% within Nationality	78.5%	21.5%	100.0%
	Non-Maltese	Count	5	4	9
		% within Nationality	55.6%	44.4%	100.0%
Total		Count	173	50	223
		% within Nationality	77.6%	22.4%	100.0%

a. Occupation = Medical Practitioners

Table F3

Complete Chi-Squared Tests for medical practitioners including the Continuity Correction for the variable Nationality

Chi-Square Tests[a]	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	2.615[b]	1	.106		
Continuity Correction[c]	1.462	1	.227		
Likelihood Ratio	2.241	1	.134		
Fisher's Exact Test				.117	.117
Linear-by-Linear Association	2.603	1	.107		
N of Valid Cases	223				

a. Occupation = Medical Practitioners

b. 1 cells (25.0%) have expected count less than 5. The minimum expected count is 2.02.

c. Computed only for a 2x2 table

Table F4

The Second Victim Phenomenon of Medical Practitioners by gender

			Yes	No	
Gender	Male	Count	81	26	107
		% within Gender	75.7%	24.3%	100.0%
	Female	Count	93	24	117
		% within Gender	79.5%	20.5%	100.0%
Total		Count	174	50	224
		% within Gender	77.7%	22.3%	100.0%

a. Occupation = Medical Practitioners

Table F5

Complete Chi-Squared Tests for Medical Practitioners including the Continuity Correction for the Variable Gender

Chi-Square Tests[a]	Value	df	Asymptotic Significance (2-sided)	Exact Sig. (2-sided)	Exact Sig. (1-sided)
Pearson Chi-Square	.462[b]	1	.497		
Continuity Correction[c]	.270	1	.604		
Likelihood Ratio	.462	1	.497		
Fisher's Exact Test				.524	.302
Linear-by-Linear Association	.460	1	.498		
N of Valid Cases	224				

a. Occupation = Medical Practitioners

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 23.88.

c. Computed only for a 2x2 table

Table F6

The Second Victim Phenomenon for Medical Practitioners by Age

			Yes	No	
Age	20-29	Count	22	6	28
		% within Age	78.6%	21.4%	100.0%
	30-39	Count	52	8	60
		% within Age	86.7%	13.3%	100.0%
	40-49	Count	32	8	40
		% within Age	80.0%	20.0%	100.0%
	50-59	Count	29	15	44
		% within Age	65.9%	34.1%	100.0%
	60+	Count	39	12	51
		% within Age	76.5%	23.5%	100.0%
Total		Count	174	49	223
		% within Age	78.0%	22.0%	100.0%

a. Occupation = Medical Practitioners

Table F7

Complete Chi-Squared Tests for Medical Practitioners with Age as the Variable

Chi-Square Tests[a]	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	6.548[b]	4	.162
Likelihood Ratio	6.485	4	.166
Linear-by-Linear Association	2.149	1	.143
N of Valid Cases	223		

a. Occupation = Medical Practitioners

b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.15.

Table F8

The Second Victim Phenomenon for Medical Practitioners by Professional Experience

			Yes	No	Total
Professional Experience (years)	0-9	Count	43	9	52
		% within Professional Experience (years)	82.7%	17.3%	100.0%
	10-19	Count	46	6	52
		% within Professional Experience (years)	88.5%	11.5%	100.0%
	20-29	Count	25	13	38
		% within Professional Experience (years)	65.8%	34.2%	100.0%
	30-39	Count	33	13	46
		% within Professional Experience (years)	71.7%	28.3%	100.0%
	40+	Count	23	7	30
		% within Professional Experience (years)	76.7%	23.3%	100.0%
Total		Count	170	48	218
		% within Professional Experience (years)	78.0%	22.0%	100.0%

Table F9

Complete Chi-Squared Tests for Medical Practitioners for the Variable Professional Experience

Chi-Square Tests[a]	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	8.362[b]	4	.079
Likelihood Ratio	8.526	4	.074
Linear-by-Linear Association	2.745	1	.098
N of Valid Cases	218		

a. Occupation = Medical Practitioners b. 0 cells (.0%) have expected count less than 5. The minimum expected count is 6.61.

Table F10

Testing for normality with regards to support perceptions of medical practitioners by second victim status

Tests of Normality

Occupation	Support perceptions	Trauma experience	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
			Statistic	df	Sig.	Statistic	df	Sig.
Medical Practitioners	The possibility to take time off from work directly to process the event	Yes	.289	129	<.001	.809	129	<.001
		No	.303	34	<.001	.759	34	<.001
	Access to professional counselling or psychological /psychiatric consultation	Yes	.277	129	<.001	.804	129	<.001
		No	.263	34	<.001	.782	34	<.001
	The possibility to discuss my emotional or ethical thoughts	Yes	.267	129	<.001	.732	129	<.001
		No	.274	34	<.001	.791	34	<.001
		Yes	.293	129	<.001	.715	129	<.001

	Clear and timely information regarding the course of action after a serious event (eg.damage analysis, error report)	No	.282	34	<.001	.773	34	<.001
	Formal emotional support in the sense of organised collegial help	Yes	.286	129	<.001	.834	129	<.001
		No	.282	34	<.001	.811	34	<.001
	Informal emotional support	Yes	.277	129	<.001	.777	129	<.001
		No	.270	34	<.001	.798	34	<.001
	Support / Mentoring when continuing to work with patients	Yes	.271	129	<.001	.823	129	<.001
		No	.265	34	<.001	.800	34	<.001
	Guidelines regarding the role / activities expected of me during a serious event	Yes	.251	129	<.001	.791	129	<.001
		No	.248	34	<.001	.786	34	<.001
	Support to be able to take an active role in the processing of the event	Yes	.274	129	<.001	.798	129	<.001
		No	.269	34	<.001	.793	34	<.001

	A secure possibility to give information on how to prevent similar events in the future	Yes	.283	129	<.001	.743	129	<.001
		No	.279	34	<.001	.739	34	<.001
	Legal advice	Yes	.345	129	<.001	.681	129	<.001
		No	.315	34	<.001	.750	34	<.001

Fig. F1a

Access to Professional Counselling Among Medical Practitioners Who Were Second Victims

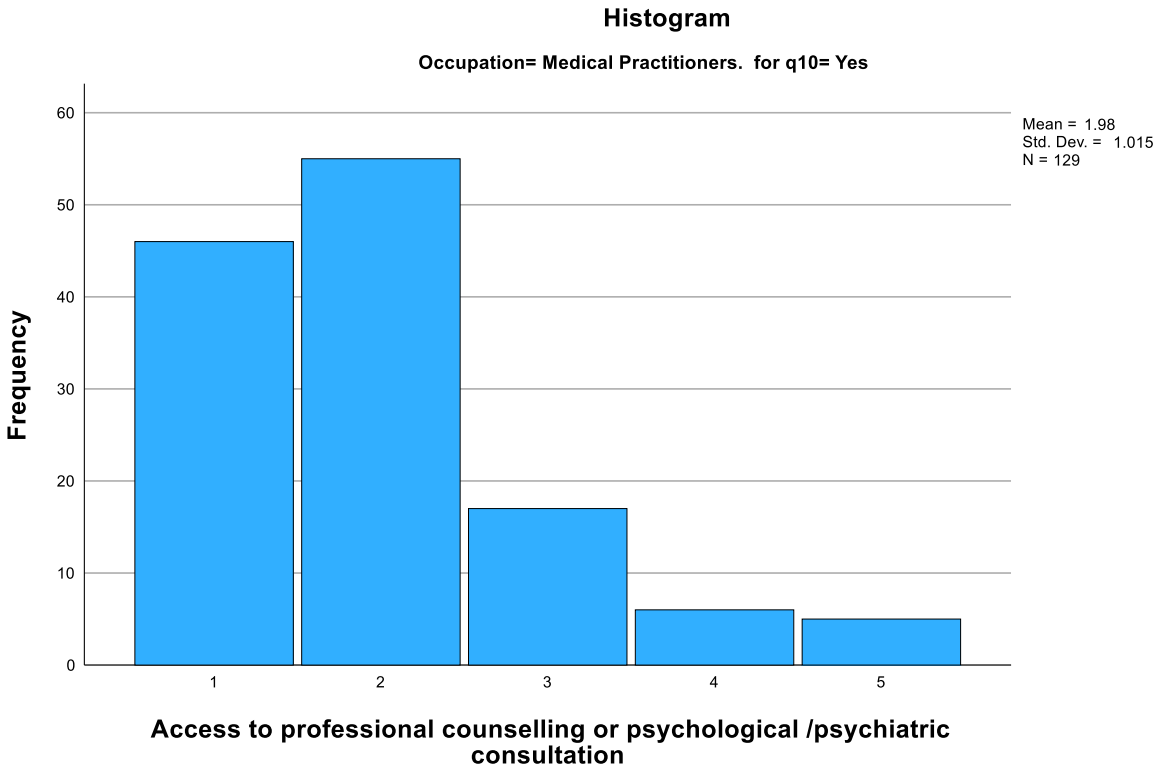

Fig. F1b

Access to Professional Counselling Among Medical Practitioners Who Were Not Second Victims

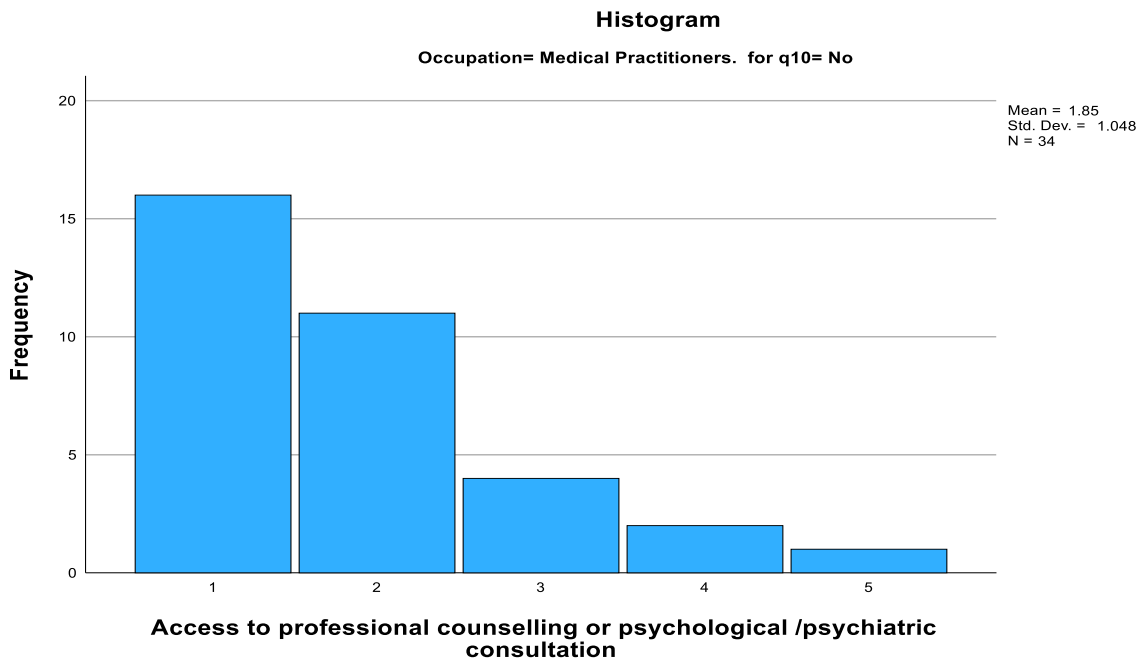

Fig. F2a

Detrended Q–Q Plot for Guidelines During a Serious Event Among Medical Practitioners (Second Victims)

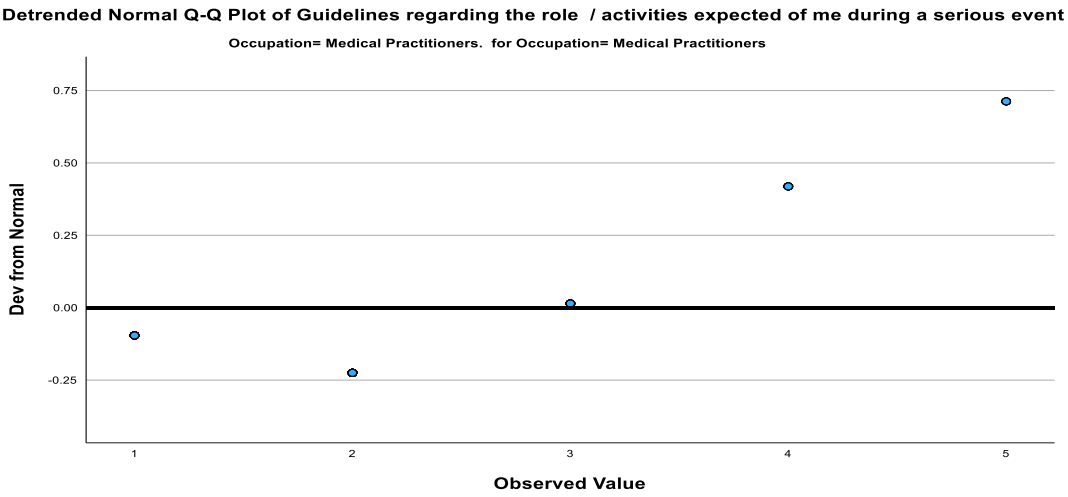

Table F11

Testing for normality with regards to the support perceptions of nurses by second victim status

Tests of Normality

Occupation	Support perceptions	Trauma experience	Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
Nurses	The possibility to take time off from work directly to process the event	Yes	.255	196	<.001	.781	196	<.001
		No	.261	87	<.001	.813	87	<.001
	Access to professional counselling or psychological /psychiatric consultation	Yes	.287	196	<.001	.740	196	<.001
		No	.291	87	<.001	.755	87	<.001
	The possibility to discuss my emotional or ethical thoughts	Yes	.321	196	<.001	.690	196	<.001
		No	.280	87	<.001	.767	87	<.001
	Clear and timely information regarding the course of action after a serious event (eg.damage analysis, error report)	Yes	.277	196	<.001	.729	196	<.001
		No	.221	87	<.001	.832	87	<.001
	Formal emotional support in the sense of organised collegial help	Yes	.279	196	<.001	.743	196	<.001
		No	.230	87	<.001	.848	87	<.001
	Informal emotional support	Yes	.281	196	<.001	.733	196	<.001
		No	.268	87	<.001	.846	87	<.001
		Yes	.260	196	<.001	.825	196	<.001

	Support / Mentoring when continuing to work with patients	No	.240	87	<.001	.869	87	<.001
	Guidelines regarding the role / activities expected of me during a serious event	Yes	.265	196	<.001	.761	196	<.001
		No	.228	87	<.001	.845	87	<.001
	Support to be able to take an active role in the processing of the event	Yes	.282	196	<.001	.765	196	<.001
		No	.258	87	<.001	.839	87	<.001
	A secure possibility to give information on how to prevent similar events in the future	Yes	.321	196	<.001	.696	196	<.001
		No	.234	87	<.001	.820	87	<.001
	The possibility to access legal consultation after a severe event	Yes	.300	196	<.001	.760	196	<.001
		No	.279	87	<.001	.803	87	<.001

Lilliefors Significance Correction[a]

Fig. F3

Distribution of nurses about the support perception of taking time off from work after the event

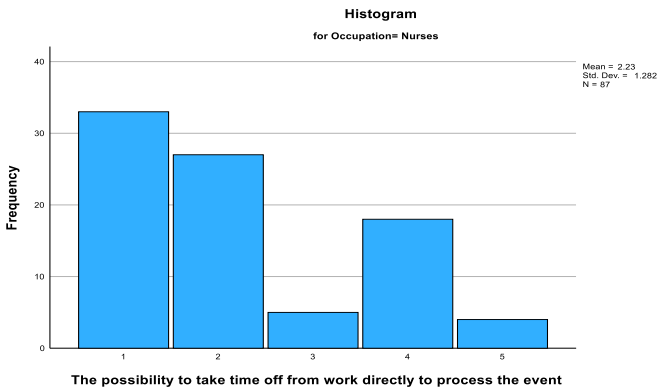

Fig. F4a

Q–Q Plot for Discussing Emotional or Ethical Thoughts Among Nurses (Second Victims)

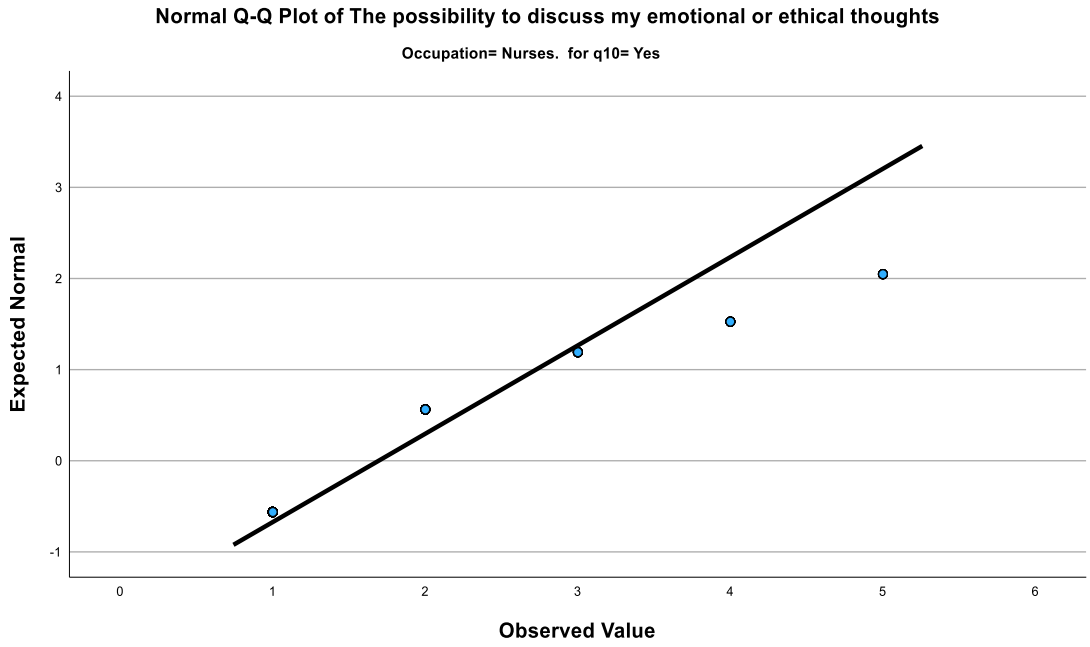

Fig. F4b

Q–Q Plot for Discussing Emotional or Ethical Thoughts Among Nurses (Non-Second Victims)

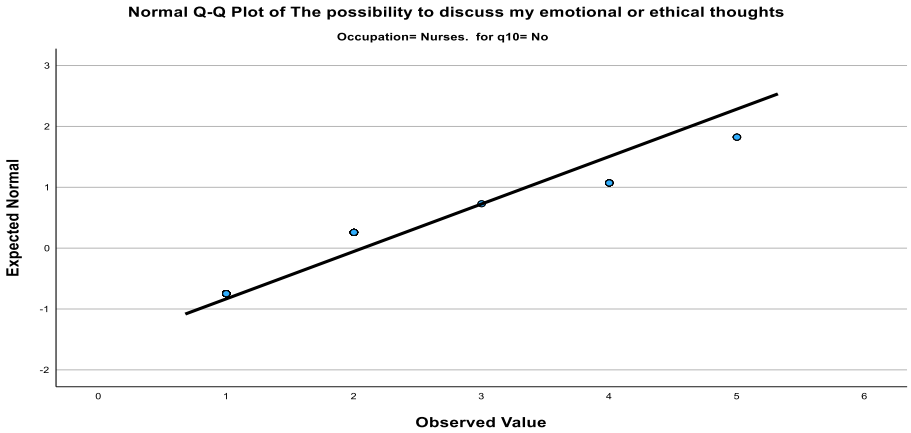

Fig. F5a

Detrended Q–Q Plot for Discussing Emotional or Ethical Thoughts Among Nurses (Second Victims)

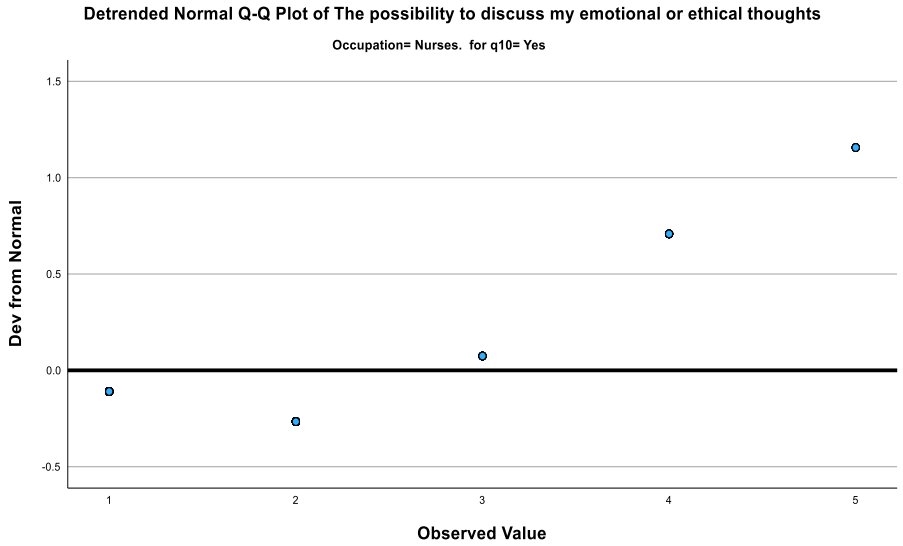

Fig. F5b

Detrended Q–Q Plot for Discussing Emotional or Ethical Thoughts Among Nurses (Non-Second Victims)

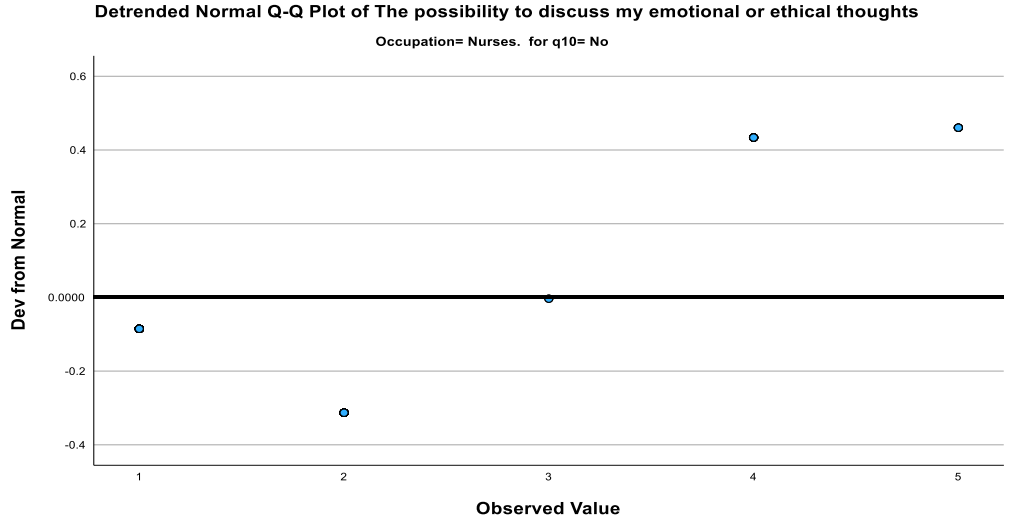

Table F12

Testing for normality with regards to the support perceptions of pharmacists by second victim status

Tests of Normality

Occupation	Support perceptions	Trauma experience	Kolmogorov-Smirnov[a] Statistic	df	Sig.	Shapiro-Wilk Statistic	df	Sig.
								Tests of
Pharmacists	The possibility to take time off from work directly to process the event	Yes	.298	70	<.001	.835	70	<.001
		No	.280	108	<.001	.724	108	<.001
	Access to professional counselling or psychological /psychiatric consultation	Yes	.281	70	<.001	.701	70	<.001
		No	.347	108	<.001	.634	108	<.001
	The possibility to discuss my emotional or ethical thoughts	Yes	.333	70	<.001	.647	70	<.001
		No	.318	108	<.001	.672	108	<.001
	Clear and timely information regarding the course of action after a serious event (eg.damage analysis, error report)	Yes	.304	70	<.001	.741	70	<.001
		No	.351	108	<.001	.644	108	<.001
	Formal emotional support in the sense of organised collegial help	Yes	.308	70	<.001	.760	70	<.001
		No	.325	108	<.001	.731	108	<.001
	Informal emotional support	Yes	.297	70	<.001	.702	70	<.001
		No	.353	108	<.001	.739	108	<.001
	Support / Mentoring when continuing to work with patients	Yes	.348	70	<.001	.739	70	<.001
		No	.312	108	<.001	.735	108	<.001
	Guidelines regarding the role / activities expected of me during a serious event	Yes	.277	70	<.001	.732	70	<.001
		No	.307	108	<.001	.687	108	<.001
	Support to be able to take an active role in the processing of the event	Yes	.305	70	<.001	.754	70	<.001
		No	.300	108	<.001	.718	108	<.001

	A secure possibility to give information on how to prevent similar events in the future	Yes	.324	70	<.001	.651	70	<.001
		No	.310	108	<.001	.668	108	<.001
	The possibility to access legal consultation after a severe event	Yes	.331	70	<.001	.689	70	<.001
		No	.392	108	<.001	.596	108	<.001

Lilliefors Significance Correction[a]

Fig. F6a

Q–Q Plot for Access to Professional Counselling Among Pharmacists (Second Victims)

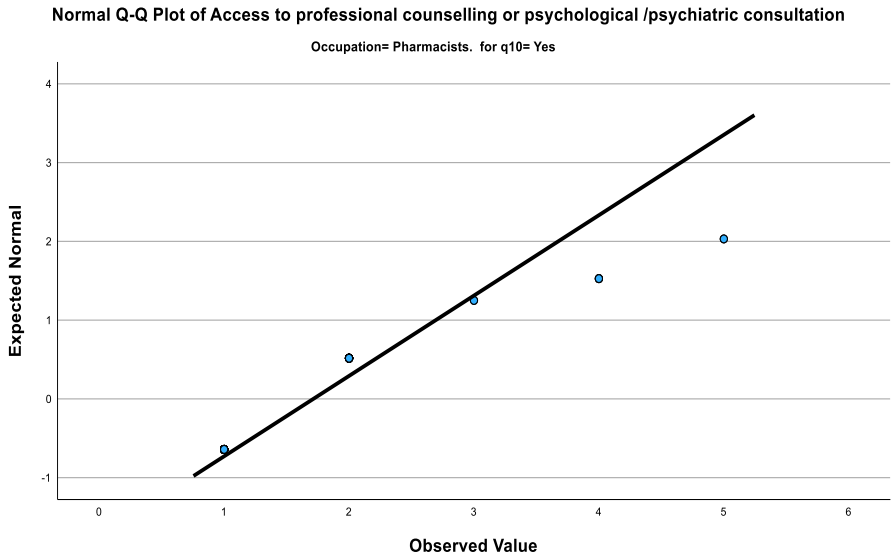

Fig. F6b

Q–Q Plot for Access to Professional Counselling Among Pharmacists (Non-Second Victims)

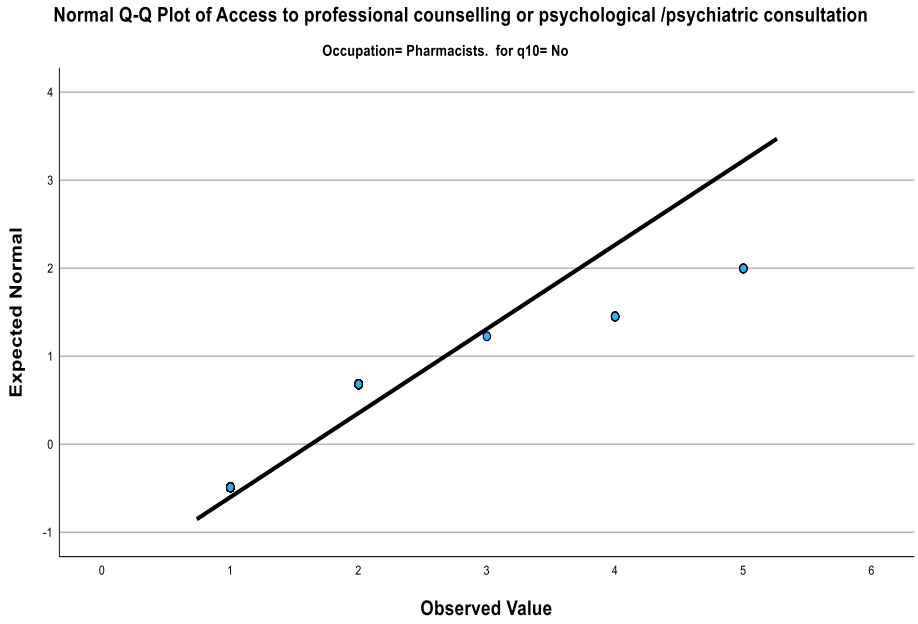

Fig. F7a

Detrended Q–Q Plot for Access to Professional Counselling Among Pharmacists (Second Victims)

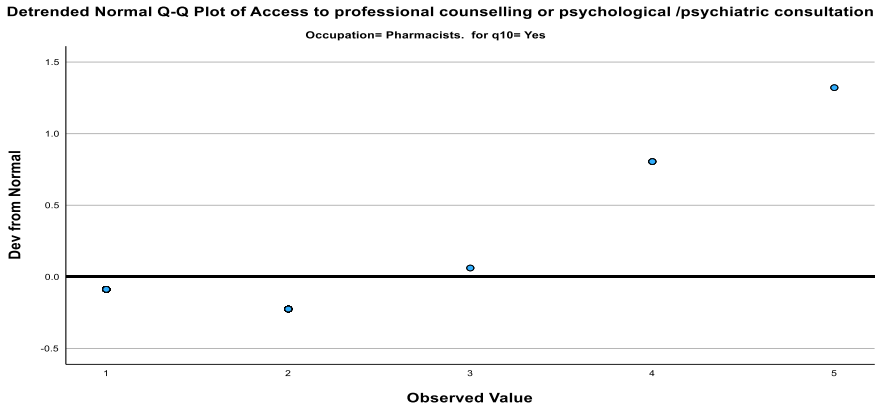

Fig. F7b

Detrended Q–Q Plot for Access to Professional Counselling Among Pharmacists (Second Victims)

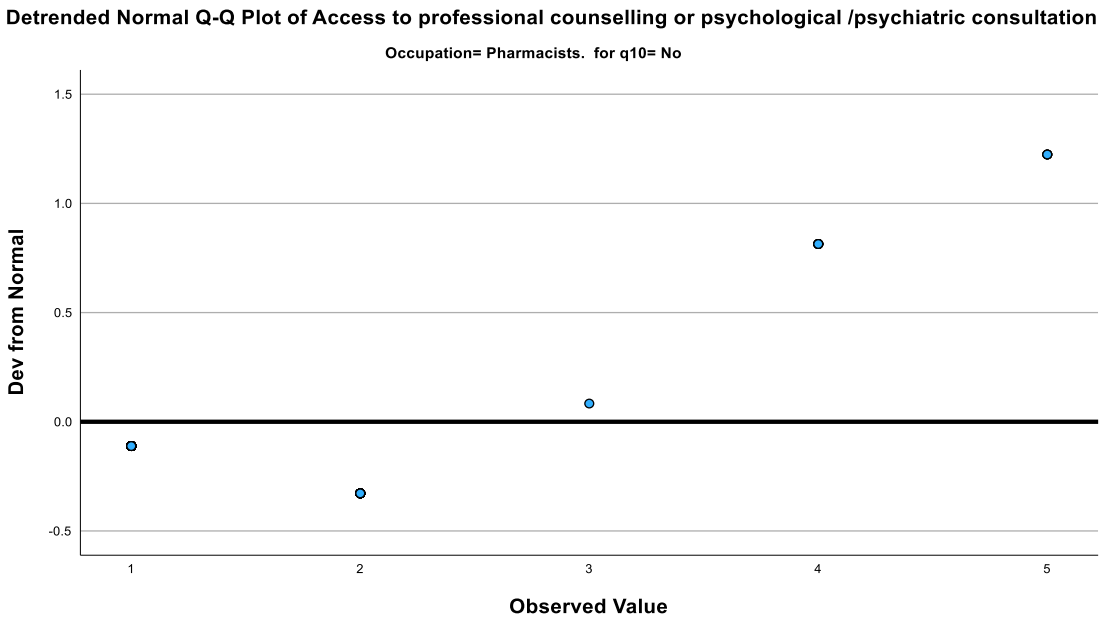

Table F13

Testing for normality with regards to the support perceptions of the three professions by second victim status

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
Support measures	Profession	Statistic	df	Sig.	Statistic	df	Sig.
The possibility to take time off from work directly to process the event	Medical Practitioners	.293	128	<.001	.805	128	<.001
	Nurses	.256	195	<.001	.778	195	<.001
	Pharmacists	.298	70	<.001	.835	70	<.001
Access to professional counselling or psychological /psychiatric consultation	Medical Practitioners	.280	128	<.001	.800	128	<.001
	Nurses	.289	195	<.001	.739	195	<.001
	Pharmacists	.281	70	<.001	.701	70	<.001
The possibility to discuss my emotional or ethical thoughts	Medical Practitioners	.270	128	<.001	.731	128	<.001
	Nurses	.323	195	<.001	.688	195	<.001
	Pharmacists	.333	70	<.001	.647	70	<.001
Clear and timely information regarding the course of action after a serious event (eg.damage analysis, error report)	Medical Practitioners	.295	128	<.001	.709	128	<.001
	Nurses	.279	195	<.001	.728	195	<.001
	Pharmacists	.304	70	<.001	.741	70	<.001
Formal emotional support in the sense of organised collegial help	Medical Practitioners	.289	128	<.001	.831	128	<.001
	Nurses	.277	195	<.001	.744	195	<.001
	Pharmacists	.308	70	<.001	.760	70	<.001
Informal emotional support	Medical Practitioners	.281	128	<.001	.771	128	<.001
	Nurses	.283	195	<.001	.732	195	<.001
	Pharmacists	.297	70	<.001	.702	70	<.001
Quick processing of the situation / quick crisis intervention (in a team or individually)	Medical Practitioners	.253	128	<.001	.797	128	<.001
	Nurses	.309	195	<.001	.719	195	<.001
	Pharmacists	.295	70	<.001	.739	70	<.001
	Medical Practitioners	.275	128	<.001	.819	128	<.001

Support / Mentoring when continuing to work with patients	Nurses	.259	195	<.001	.825	195	<.001
	Pharmacists	.348	70	<.001	.739	70	<.001
Support when communicating with patients and / or relatives	Medical Practitioners	.274	128	<.001	.837	128	<.001
	Nurses	.263	195	<.001	.829	195	<.001
	Pharmacists	.332	70	<.001	.741	70	<.001
Guidelines regarding the role / activities expected of me during a serious event	Medical Practitioners	.248	128	<.001	.793	128	<.001
	Nurses	.265	195	<.001	.762	195	<.001
	Pharmacists	.277	70	<.001	.732	70	<.001
Support to be able to take an active role in the processing of the event	Medical Practitioners	.272	128	<.001	.798	128	<.001
	Nurses	.281	195	<.001	.765	195	<.001
	Pharmacists	.305	70	<.001	.754	70	<.001
A secure possibility to give information on how to prevent similar events in the future	Medical Practitioners	.280	128	<.001	.745	128	<.001
	Nurses	.320	195	<.001	.697	195	<.001
	Pharmacists	.324	70	<.001	.651	70	<.001
The possibility to access legal consultation after a severe event	Medical Practitioners	.343	128	<.001	.684	128	<.001
	Nurses	.298	195	<.001	.761	195	<.001
	Pharmacists	.331	70	<.001	.689	70	<.001

Lilliefors Significance Correction[a]

Fig. F8

Q–Q Plot for Access to Legal Consultation Among Medical Practitioners (Second Victims)

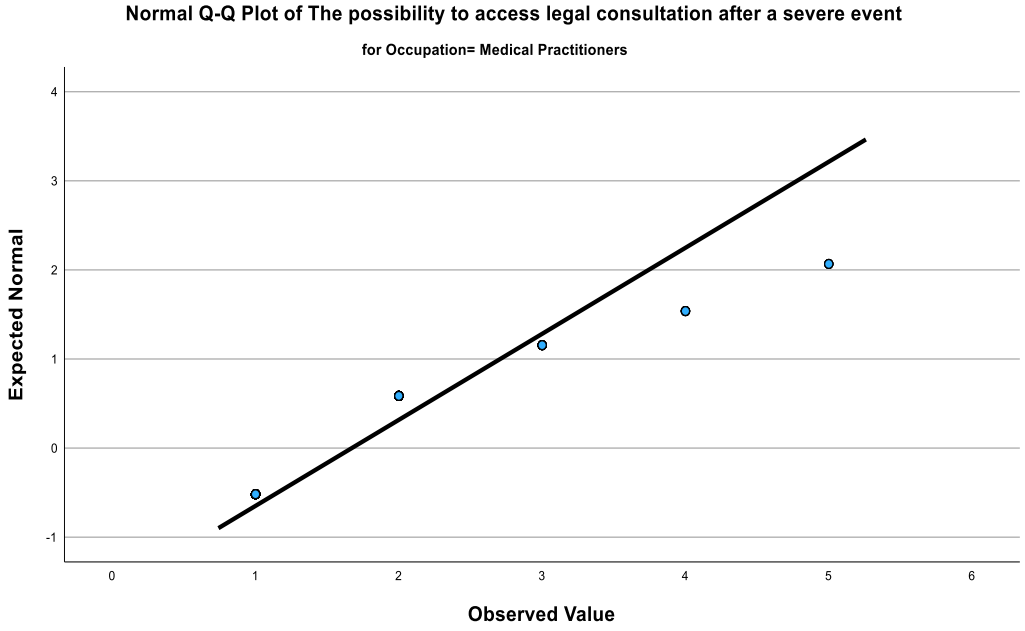

Table F14

Testing for Normality to compare support perceptions amongst the professions who did not identify as second victims

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
Non-Second Victims	Profession	Statistic	df	Sig.	Statistic	df	Sig.
The possibility to take time off from work directly to process the event	Medical Practitioners	.303	34	<.001	.759	34	<.001
	Nurses	.261	87	<.001	.813	87	<.001
	Pharmacists	.283	107	<.001	.723	107	<.001
Access to professional counselling or psychological /psychiatric consultation	Medical Practitioners	.263	34	<.001	.782	34	<.001
	Nurses	.291	87	<.001	.755	87	<.001
	Pharmacists	.351	107	<.001	.630	107	<.001
The possibility to discuss my emotional or ethical thoughts	Medical Practitioners	.274	34	<.001	.791	34	<.001
	Nurses	.280	87	<.001	.767	87	<.001
	Pharmacists	.322	107	<.001	.669	107	<.001
Clear and timely information regarding the course of action after a serious event (eg.damage analysis, error report)	Medical Practitioners	.282	34	<.001	.773	34	<.001
	Nurses	.221	87	<.001	.832	87	<.001
	Pharmacists	.355	107	<.001	.641	107	<.001
Formal emotional support in the sense of organised collegial help	Medical Practitioners	.282	34	<.001	.811	34	<.001
	Nurses	.230	87	<.001	.848	87	<.001
	Pharmacists	.325	107	<.001	.729	107	<.001
Informal emotional support	Medical Practitioners	.270	34	<.001	.798	34	<.001
	Nurses	.268	87	<.001	.846	87	<.001
	Pharmacists	.351	107	<.001	.740	107	<.001
Quick processing of the situation / quick crisis intervention (in a team or individually)	Medical Practitioners	.317	34	<.001	.760	34	<.001
	Nurses	.243	87	<.001	.834	87	<.001
	Pharmacists	.299	107	<.001	.697	107	<.001

Support / Mentoring when continuing to work with patients	Medical Practitioners	.265	34	<.001	.800	34	<.001
	Nurses	.240	87	<.001	.869	87	<.001
	Pharmacists	.313	107	<.001	.737	107	<.001
Support when communicating with patients and / or relatives	Medical Practitioners	.285	34	<.001	.800	34	<.001
	Nurses	.241	87	<.001	.841	87	<.001
	Pharmacists	.301	107	<.001	.755	107	<.001
Guidelines regarding the role / activities expected of me during a serious event	Medical Practitioners	.248	34	<.001	.786	34	<.001
	Nurses	.228	87	<.001	.845	87	<.001
	Pharmacists	.311	107	<.001	.685	107	<.001
Support to be able to take an active role in the processing of the event	Medical Practitioners	.269	34	<.001	.793	34	<.001
	Nurses	.258	87	<.001	.839	87	<.001
	Pharmacists	.298	107	<.001	.717	107	<.001
A secure possibility to give information on how to prevent similar events in the future	Medical Practitioners	.271	34	<.001	.789	34	<.001
	Nurses	.234	87	<.001	.820	87	<.001
	Pharmacists	.314	107	<.001	.666	107	<.001
The possibility to access legal consultation after a severe event	Medical Practitioners	.315	34	<.001	.750	34	<.001
	Nurses	.279	87	<.001	.803	87	<.001
	Pharmacists	.396	107	<.001	.591	107	<.001

Lilliefors Significance Correction[a]

Fig. F9

Distribution of Pharmacists about the Support Perception of the Possibility of Taking Time off from Work after the Event

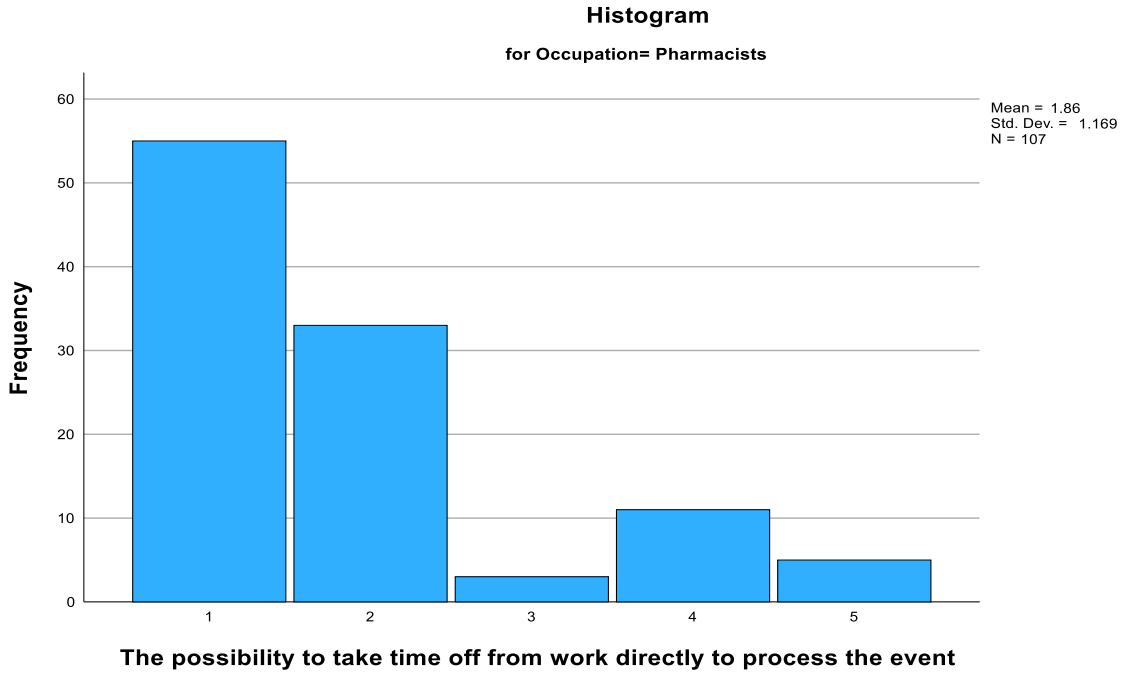

Fig. F10

Detrended Q–Q Plot for Access to Legal Consultation Among Medical Practitioners (Second Victims)

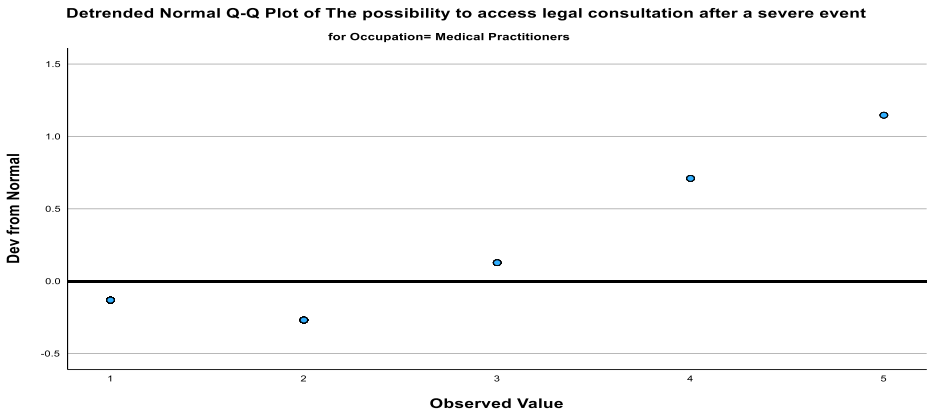

Fig. F11

Q–Q Plot for Access to Legal Consultation Among Medical Practitioners (Second Victims)

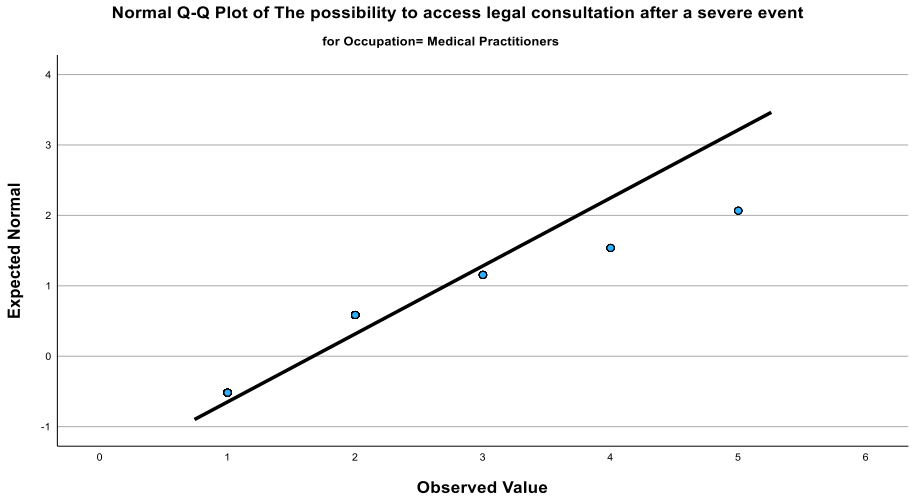

Table F15

Testing for Normality of Symptoms across the Three Profession

		Kolmogorov-Smirnov[a]			Shapiro-Wilk		
Symptoms	Profession	Statistic	df	Sig.	Statistic	df	Sig.
Fear of exclusion by colleagues	Medical Practitioners	.536	124	<.001	.140	124	<.001
	Nurses	.531	182	<.001	.330	182	<.001
	Pharmacists	.538	69	<.001	.249	69	<.001
Fear of losing the job	Medical Practitioners	.539	124	<.001	.197	124	<.001
	Nurses	.534	182	<.001	.307	182	<.001
	Pharmacists	.531	69	<.001	.101	69	<.001
Listlessness	Medical Practitioners	.514	124	<.001	.420	124	<.001
	Nurses	.458	182	<.001	.554	182	<.001
	Pharmacists	.524	69	<.001	.373	69	<.001
Depressive mood	Medical Practitioners	.536	124	<.001	.284	124	<.001
	Nurses	.538	182	<.001	.268	182	<.001
	Pharmacists	.532	69	<.001	.101	69	<.001
Concentration difficulties	Medical Practitioners	.539	124	<.001	.244	124	<.001
	Nurses	.536	182	<.001	.130	182	<.001
	Pharmacists	.242	69	<.001	.797	69	<.001
Reliving the situation outside the professional activity	Medical Practitioners	.540	124	<.001	.221	124	<.001
	Nurses	.540	182	<.001	.224	182	<.001
	Pharmacists	.539	69	<.001	.249	69	<.001
Reliving the situation in similar professional situations	Medical Practitioners	.537	124	<.001	.285	124	<.001
	Nurses	.538	182	<.001	.268	182	<.001
	Pharmacists	.538	69	<.001	.161	69	<.001
Aggressive, intentionally risky behaviour	Medical Practitioners	.540	124	<.001	.196	124	<.001
	Nurses	.535	182	<.001	.294	182	<.001
	Pharmacists	.537	69	<.001	.160	69	<.001
Defensive, overly cautious behaviour	Medical Practitioners	.219	124	<.001	.808	124	<.001
	Nurses	.540	182	<.001	.207	182	<.001

	Pharmacists	.538	69	<.001	.161	69	<.001
Psychosomatic reactions (headaches, backpain,etc.)	Medical Practitioners	.536	124	<.001	.140	124	<.001
	Nurses	.536	182	<.001	.294	182	<.001
	Pharmacists	.532	69	<.001	.318	69	<.001
Insomnia or excessive need for sleep	Medical Practitioners	.536	124	<.001	.140	124	<.001
	Nurses	.540	182	<.001	.224	182	<.001
	Pharmacists	.279	69	<.001	.769	69	<.001
Use of alcohol/drugs due to the event	Medical Practitioners	.539	124	<.001	.169	124	<.001
	Nurses	.538	182	<.001	.253	182	<.001
	Pharmacists	.535	69	<.001	.284	69	<.001
Feelings of shame	Medical Practitioners	.538	124	<.001	.265	124	<.001
	Nurses	.538	182	<.001	.254	182	<.001
	Pharmacists	.537	69	<.001	.161	69	<.001
Feelings of guilt	Medical Practitioners	.525	124	<.001	.066	124	<.001
	Nurses	.536	182	<.001	.294	182	<.001
	Pharmacists	.531	69	<.001	.101	69	<.001
Self -doubt	Medical Practitioners	.539	124	<.001	.170	124	<.001
	Nurses	.539	182	<.001	.172	182	<.001
	Pharmacists	.532	69	<.001	.101	69	<.001
Social isolation	Medical Practitioners	.536	124	<.001	.140	124	<.001
	Nurses	.534	182	<.001	.307	182	<.001
	Pharmacists	.531	69	<.001	.100	69	<.001
Anger Rage towards others	Medical Practitioners	.538	124	<.001	.170	124	<.001
	Nurses	.538	182	<.001	.268	182	<.001
	Pharmacists	.537	69	<.001	.161	69	<.001
Anger rage towards myself	Medical Practitioners	.538	124	<.001	.170	124	<.001
	Nurses	.536	182	<.001	.131	182	<.001
	Pharmacists	.538	69	<.001	.249	69	<.001

Lilliefors Significance Correction[a]

Fig. F12a

Use of Alcohol or Drugs Due to the Event Among Medical Practitioners

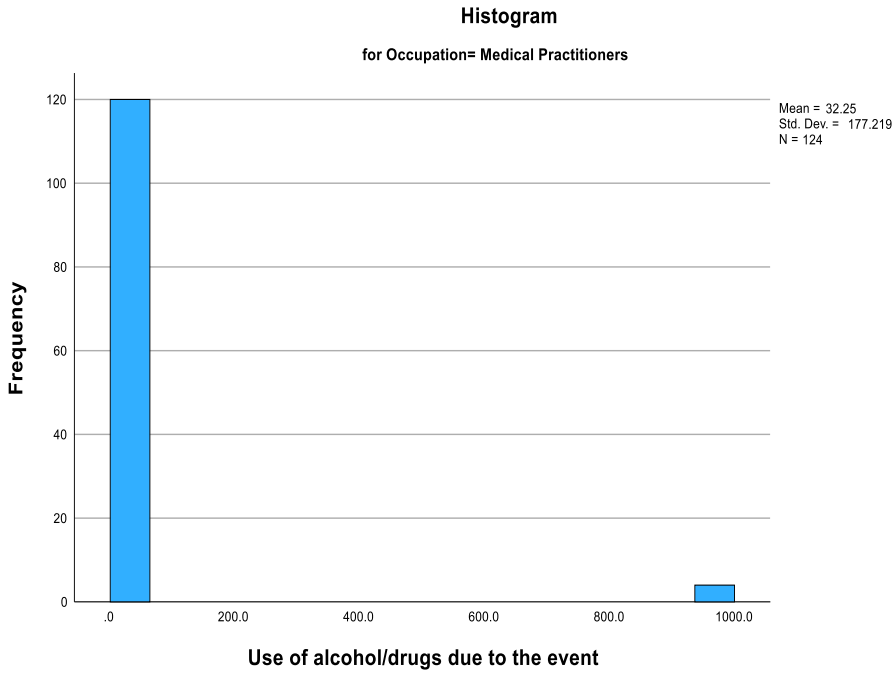

Fig. F12b

Use of Alcohol or Drugs Due to the Event Among Nurses

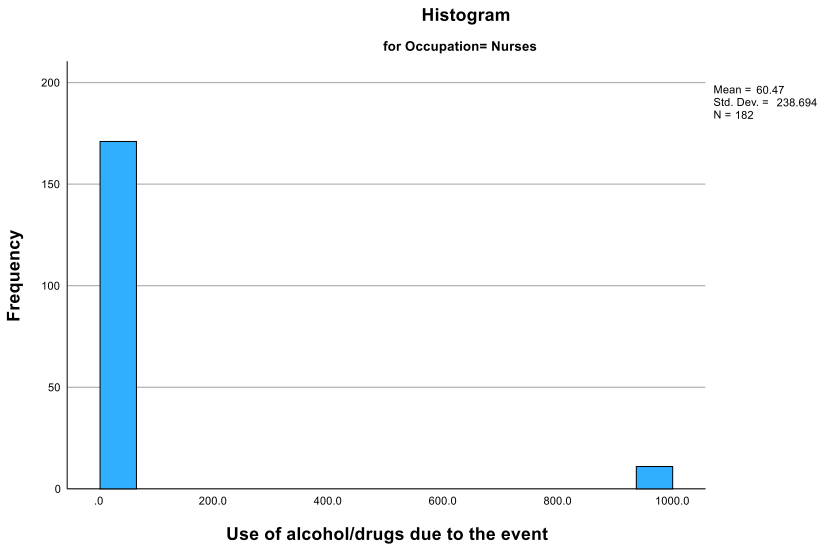

Fig. F12c

Use of Alcohol or Drugs Due to the Event Among Pharmacists

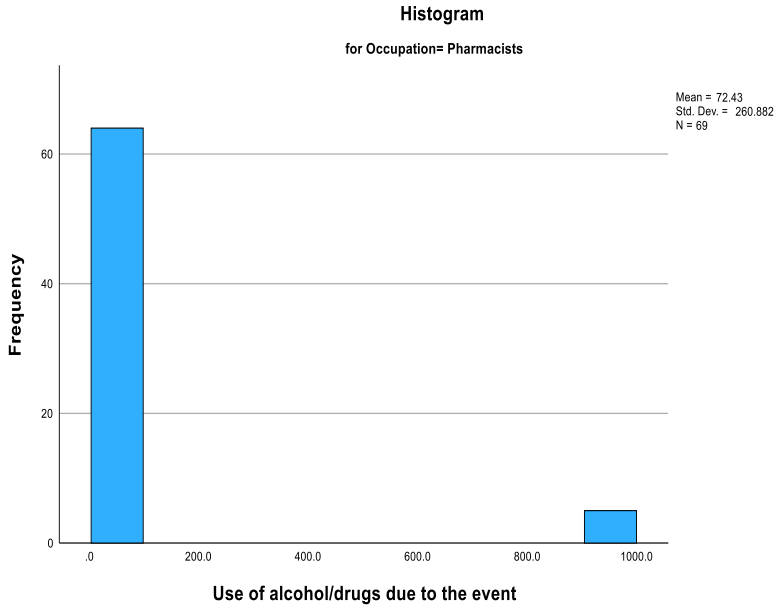

Table F16

Tests of Normality for the total Symptom Load amongst the Three Professions

Tests of Normality

		Kolmogorov-Smirnov			Shapiro-Wilk		
	Occupation	Statistic	df	Sig.	Statistic	df	Sig.
Symptom Load	Medical Practitioners	.079	132	.042	.968	132	.004
	Nurses	.065	200	.039	.987	200	.058
	Pharmacists	.072	73	.200	.979	73	.247

Fig. F13a

Symptom Load Among Medical Practitioners

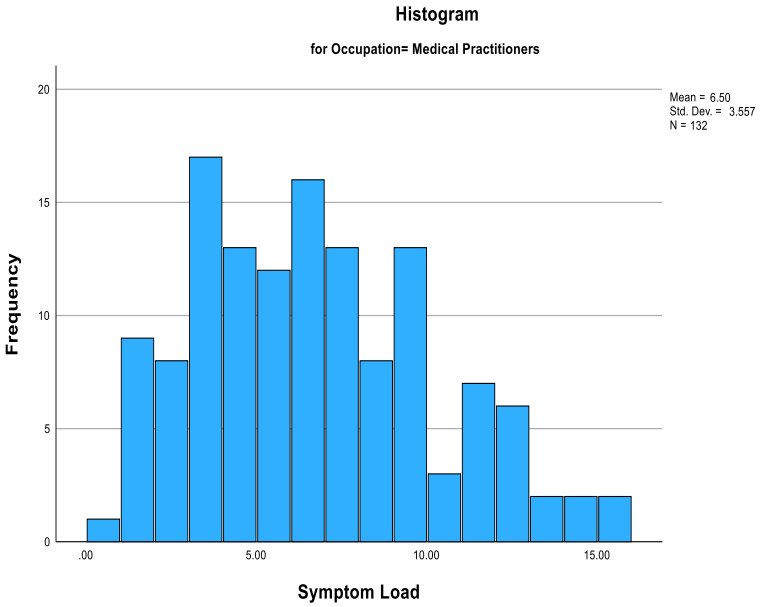

Fig. F13b

Symptom Load Among Nurses

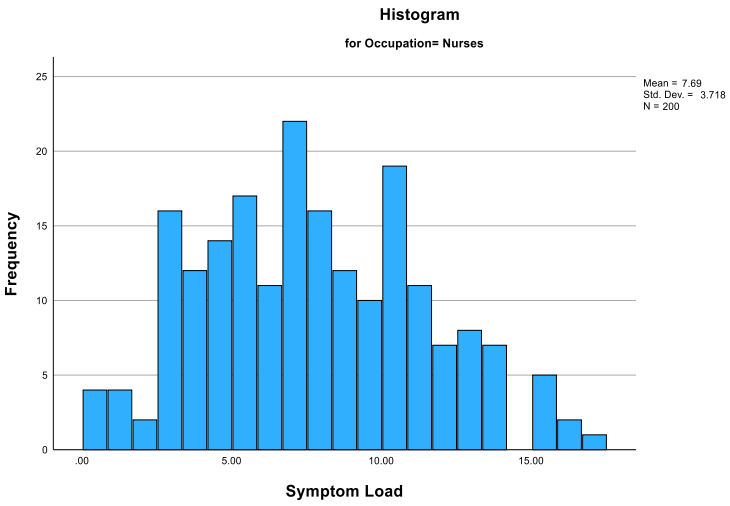

Fig. F13c

Symptom Load Among Pharmacists

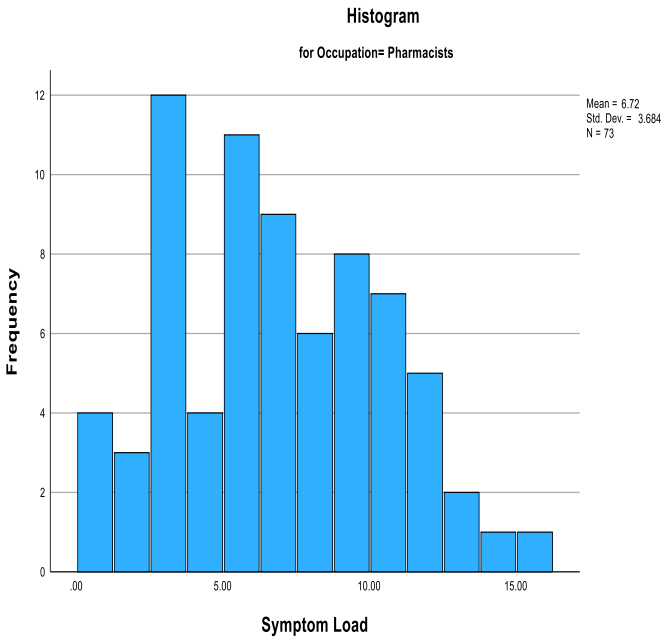

Table F17

Perceived Support Among Second Victims across Professions using Ranks

Ranks[a]

Support perceptions

	Occupation	N	Mean Rank
The possibility to take time off from work directly to process the event	Medical Practitioners	132	211.44
	Nurses	199	190.72
	Pharmacists	72	215.85
	Total	403	
Access to professional counselling or psychological /psychiatric consultation	Medical Practitioners	132	217.64
	Nurses	199	198.12
	Pharmacists	72	184.06
	Total	403	
The possibility to discuss my emotional or ethical thoughts	Medical Practitioners	132	214.67
	Nurses	199	198.63
	Pharmacists	72	188.08
	Total	403	
Clear and timely information regarding the course of action after a serious event (eg.damage analysis, error report)	Medical Practitioners	131	196.29
	Nurses	199	201.06
	Pharmacists	72	212.19
	Total	402	
Formal emotional support in the sense of organised collegial help	Medical Practitioners	131	225.13
	Nurses	199	184.28
	Pharmacists	72	206.10
	Total	402	
Informal emotional support	Medical Practitioners	131	212.31
	Nurses	199	194.58
	Pharmacists	71	198.13
	Total	401	
Quick processing of the situation / quick crisis intervention (in a team or individually)	Medical Practitioners	131	212.81
	Nurses	199	191.52
	Pharmacists	72	208.51
	Total	402	
Support /Mentoring when continuing to work with patients	Medical Practitioners	130	202.29
	Nurses	199	203.37
	Pharmacists	72	192.11

	Total	401	
Support when communicating with patients and / or relatives	Medical Practitioners	129	211.32
	Nurses	199	200.09
	Pharmacists	72	182.24
	Total	400	
Guidelines regarding the role / activities expected of me during a serious event	Medical Practitioners	131	204.81
	Nurses	198	199.98
	Pharmacists	71	193.99
	Total	400	
Support to be able to take an active role in the processing of the event	Medical Practitioners	131	206.99
	Nurses	199	198.31
	Pharmacists	71	197.48
	Total	401	
A secure possibility to give information on how to prevent similar events in the future	Medical Practitioners	131	208.66
	Nurses	198	199.17
	Pharmacists	72	192.11
	Total	401	
The possibility to access legal consultation after a severe event	Medical Practitioners	131	189.23
	Nurses	198	210.48
	Pharmacists	72	196.33
	Total	401	

a. Have you ever experienced this sort of traumatisation after an event in the course of your professional work in healthcare? = Yes

Kruskal-Wallis Test was chosen after testing for normality. Tables F17 and F18 are merged into the comprehensive Results Table: Table 4.31 *Perceived Support Among Second Victims across Professions* in Section 4.9.1 (page152)

Table F18

The support perceptions using the Non -Parametric Test

Test Statistics[a,b,]

	The possibility to take time off from work directly to process the event	Access to professional counselling or psychological /psychiatric consultation	The possibility to discuss my emotional or ethical thoughts	Clear and timely information regarding the course of action after a serious event (eg.damage analysis, error report)	Formal emotional support in the sense of organised collegial help	Informal emotional support	Quick processing of the situation / quick crisis intervention (in a team or individually)	Support / Mentoring when continuing to work with patients	Support when communicating with patients and / or relatives	Guidelines regarding the role / activities expected of me during a serious event	Support to be able to take an active role in the processing of the event	A secure possibility to give information on how to prevent similar events in the future	The possibility to access legal consultation after a severe event
Kruskal-Wallis H	4.147	4.970	3.428	1.041	11.314	2.246	3.464	.583	3.217	.475	.600	1.295	3.437
Df	2	2	2	2	2	2	2	2	2	2	2	2	2
Asymp. Sig.	.126	.083	.180	.594	.003	.325	.177	.747	.200	.789	.741	.523	.179

Note a. Have you ever experienced this sort of traumatisation after an event in the course of your professional work in healthcare? = Yes

b. Kruskal Wallis Test c.Grouping Variable: Occupation

Table F19

Nonparametric Correlation table for Medical Practitioners (including all data)

Correlations[a]

			Nationality	Gender	Age	Professional Experience (years)	Extraversion	Agreeableness	Conscientousness	Neuroticism	Openness	Symptom Load
Spearman's rho	Nationality	Correlation Coefficient	1.000	-.079	.028	-.026	-.025	.201*	.114	-.001	.021	-.076
		Sig. (2-tailed)	.	.243	.680	.701	.756	.010	.146	.989	.793	.386
		N	223	223	222	217	163	162	163	164	163	131
	Gender	Correlation Coefficient	-.079	1.000	-.352**	-.339**	.025	-.001	-.023	-.001	-.057	.129
		Sig. (2-tailed)	.243	.	.000	.000	.748	.990	.770	.993	.465	.140
		N	223	224	223	218	164	163	164	164	164	132
	Age	Correlation Coefficient	.028	-.352**	1.000	.910**	.010	-.038	-.061	-.221**	-.146	-.151
		Sig. (2-tailed)	.680	.000	.	.000	.900	.626	.434	.004	.062	.084
		N	222	223	223	218	164	163	164	164	164	132
	Professional Experience (years)	Correlation Coefficient	-.026	-.339**	.910**	1.000	-.006	-.076	-.054	-.236**	-.084	-.234**
		Sig. (2-tailed)	.701	.000	.000	.	.936	.341	.501	.003	.292	.008
		N	217	218	218	218	159	158	159	159	159	128
	Extraversion	Correlation Coefficient	-.025	.025	.010	-.006	1.000	-.062	.059	.135	.101	-.004
		Sig. (2-tailed)	.756	.748	.900	.936	.	.430	.453	.085	.201	.961

		N	163	164	164	159	164	162	163	163	163	129
	Agreeableness	Correlation Coefficient	.201*	-.001	-.038	-.076	-.062	1.000	.000	-.008	.018	.003
		Sig. (2-tailed)	.010	.990	.626	.341	.430	.	.997	.917	.817	.972
		N	162	163	163	158	162	163	162	162	162	129
	Conscientousness	Correlation Coefficient	.114	-.023	-.061	-.054	.059	.000	1.000	.269**	.114	-.054
		Sig. (2-tailed)	.146	.770	.434	.501	.453	.997	.	.001	.147	.547
		N	163	164	164	159	163	162	164	163	163	129
	Neuroticism	Correlation Coefficient	-.001	-.001	-.221**	-.236**	.135	-.008	.269**	1.000	.099	-.019
		Sig. (2-tailed)	.989	.993	.004	.003	.085	.917	.001	.	.210	.828
		N	164	164	164	159	163	162	163	164	163	129
	Openness	Correlation Coefficient	.021	-.057	-.146	-.084	.101	.018	.114	.099	1.000	.170
		Sig. (2-tailed)	.793	.465	.062	.292	.201	.817	.147	.210	.	.053
		N	163	164	164	159	163	162	163	163	164	130
	Symptom Load	Correlation Coefficient	-.076	.129	-.151	-.234**	-.004	.003	-.054	-.019	.170	1.000
		Sig. (2-tailed)	.386	.140	.084	.008	.961	.972	.547	.828	.053	.
		N	131	132	132	128	129	129	129	129	130	132

Note *. Correlation is significant at the 0.05 level (2-tailed). **. Correlation is significant at the 0.01 level (2-tailed). a. Occupation = Medical Practitioners

Tables F19-F21 include all the data with regards to Correlations between Demographics, personality traits, and symptom load for the three professions. Tables F22-F24 are an abridged version of these tables which are similar to the format used in the previous SeViD studies for direct comparisons.

Table F20

Nonparametric Correlation table for Nurses (including all data)

Correlations

			Nationality	Gender	Age	Professional Experience (years)	Extraversion	Agreeableness	Conscientousnness	Neuroticism	Openness	Symptom Load
Spearman's rho	Nationality	Correlation Coefficient	1.000	-.073	-.045	-.136**	-.086	-.048	-.121*	-.095	-.035	.015
		Sig. (2-tailed)	.	.128	.353	.005	.148	.427	.043	.110	.559	.839
		N	436	434	436	434	285	279	282	286	284	199
	Gender	Correlation Coefficient	-.073	1.000	-.077	-.079	.008	.054	.040	.099	-.162**	.037
		Sig. (2-tailed)	.128	.	.108	.101	.888	.369	.505	.094	.006	.602
		N	434	435	435	433	284	277	281	285	283	199
	Age	Correlation Coefficient	-.045	-.077	1.000	.881**	.002	.066	.175**	-.014	.045	-.138
		Sig. (2-tailed)	.353	.108	.	.000	.971	.270	.003	.814	.447	.051
		N	436	435	437	435	286	279	283	287	285	200
	Professional Experience (years)	Correlation Coefficient	-.136**	-.079	.881**	1.000	.002	.033	.172**	.021	.066	-.148*
		Sig. (2-tailed)	.005	.101	.000	.	.974	.582	.004	.730	.272	.038
		N	434	433	435	435	284	277	281	285	283	198
	Extraversion	Correlation Coefficient	-.086	.008	.002	.002	1.000	.158**	.018	-.128*	-.033	-.072
		Sig. (2-tailed)	.148	.888	.971	.974	.	.008	.764	.031	.582	.317
		N	285	284	286	284	286	278	281	285	283	196

	Agreeableness	Correlation Coefficient	-.048	.054	.066	.033	.158**	1.000	.314**	-.238**	.014	-.130
		Sig. (2-tailed)	.427	.369	.270	.582	.008	.	.000	.000	.811	.072
		N	279	277	279	277	278	279	274	278	276	193
	Conscientousness	Correlation Coefficient	-.121*	.040	.175**	.172**	.018	.314**	1.000	-.077	.043	-.212**
		Sig. (2-tailed)	.043	.505	.003	.004	.764	.000	.	.198	.478	.003
		N	282	281	283	281	281	274	283	283	280	193
	Neuroticism	Correlation Coefficient	-.095	.099	-.014	.021	-.128*	-.238**	-.077	1.000	.066	.358**
		Sig. (2-tailed)	.110	.094	.814	.730	.031	.000	.198	.	.269	.000
		N	286	285	287	285	285	278	283	287	284	196
	Openness	Correlation Coefficient	-.035	-.162**	.045	.066	-.033	.014	.043	.066	1.000	.112
		Sig. (2-tailed)	.559	.006	.447	.272	.582	.811	.478	.269	.	.118
		N	284	283	285	283	283	276	280	284	285	195
	Symptom Load	Correlation Coefficient	.015	.037	-.138	-.148*	-.072	-.130	-.212**	.358**	.112	1.000
		Sig. (2-tailed)	.839	.602	.051	.038	.317	.072	.003	.000	.118	.
		N	199	199	200	198	196	193	193	196	195	200

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed). a. Occupation = Nurses

Table F21

Nonparametric Correlation table for Pharmacists (including all data)

			Nationality	Gender	Age	Professional Experience (years)	Extraversion	Agreeableness	Conscientousness	Neuroticism	Openness	Symptom Load
Spearman's rho	Nationality	Correlation Coefficient	1.000	.043	-.212**	-.286**	.018	.019	-.042	-.024	-.037	.301**
		Sig. (2-tailed)	.	.513	.001	.000	.807	.804	.568	.744	.616	.010
		N	239	238	239	239	184	182	184	184	183	73
	Gender	Correlation Coefficient	.043	1.000	-.135*	-.119	.045	.118	.216**	.072	-.214**	.290*
		Sig. (2-tailed)	.513	.	.037	.067	.543	.114	.003	.336	.004	.014
		N	238	238	238	238	183	181	183	183	182	72
	Age	Correlation Coefficient	-.212**	-.135*	1.000	.889**	.089	-.096	.166*	.051	.111	-.095
		Sig. (2-tailed)	.001	.037	.	.000	.230	.198	.024	.492	.136	.424
		N	239	238	239	239	184	182	184	184	183	73
	Professional Experience (years)	Correlation Coefficient	-.286**	-.119	.889**	1.000	.087	-.092	.154*	.043	.089	-.045
		Sig. (2-tailed)	.000	.067	.000	.	.239	.216	.036	.565	.232	.703
		N	239	238	239	239	184	182	184	184	183	73

	Extraversion	Correlation Coefficient	.018	.045	.089	.087	1.000	.114	.112	-.174*	.133	-.055
		Sig. (2-tailed)	.807	.543	.230	.239	.	.128	.132	.019	.073	.644
		N	184	183	184	184	184	181	183	183	182	73
	Agreeableness	Correlation Coefficient	.019	.118	-.096	-.092	.114	1.000	.193**	-.244**	.039	.093
		Sig. (2-tailed)	.804	.114	.198	.216	.128	.	.009	.001	.602	.439
		N	182	181	182	182	181	182	182	181	181	71
	Conscientousness	Correlation Coefficient	-.042	.216**	.166*	.154*	.112	.193**	1.000	.034	.084	.087
		Sig. (2-tailed)	.568	.003	.024	.036	.132	.009	.	.651	.259	.465
		N	184	183	184	184	183	182	184	183	182	73
	Neuroticism	Correlation Coefficient	-.024	.072	.051	.043	-.174*	-.244**	.034	1.000	-.012	.329**
		Sig. (2-tailed)	.744	.336	.492	.565	.019	.001	.651	.	.873	.005
		N	184	183	184	184	183	181	183	184	182	73
	Openness	Correlation Coefficient	-.037	-.214**	.111	.089	.133	.039	.084	-.012	1.000	-.059
		Sig. (2-tailed)	.616	.004	.136	.232	.073	.602	.259	.873	.	.626
		N	183	182	183	183	182	181	182	182	183	71
	Symptom Load	Correlation Coefficient	.301**	.290*	-.095	-.045	-.055	.093	.087	.329**	-.059	1.000
		Sig. (2-tailed)	.010	.014	.424	.703	.644	.439	.465	.005	.626	.
		N	73	72	73	73	73	71	73	73	71	73

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed). a. Occupation = Pharmacists

Table F22

Correlations Between Demographics, Personality Traits, and Symptom Load in Medical Practitioners

Variable	Nationality	Gender	Age	Professional Experience (years)	Extraversion	Agreeableness	Conscientousness	Neuroticism	Openness	Symptom load
Nationality	1									
Gender	-0.079	1								
Age	0.028	-0.352**	1							
Professional Experience (years)	-0.026	-0.339**	0.910**	1						
Extraversion	-0.025	0.025	0.010	-0.006	1					
Agreeableness	0.201*	-0.001	-0.038	-0.076	-0.062	1				
Conscientousness	0.114	-0.023	-0.061	-0.054	0.059	0.000	1			
Neuroticism	-0.001	-0.001	-0.221**	-0.236**	-0.236**	0.135	-0.08	1		
Openness	0.021	-0.057	-0.146	-0.084	0.101	0.018	0.114	0.099	1	
Symptom Load	-0.076	0.129	-0.151	-0.234**	-0.004	0.003	-0.054	-0.019	0.170	1

*Note.**Correlation is significant at the 0.01 level.**Correlation is significant at the 0.05 level

Table F23

Spearman's Rank-Order Correlations Between Demographic Variables,Personality Traits and Symptom Load In Nurses

Variable	Nationality	Gender	Age	Professional nce(years)	Extraversion	Agreeableness	Conscientousness	Neuroticism	Openness	Symptom load
Nationality	1									
Gender	-0/073	1								
Age	-0.045	-0.077	1							
Professional Experience (years)	-0.136**	-0.079	0.881**	1						
Extraversion	-0.086	0.008	0.002	0.002	1					
Agreeableness	-0.048	0.054	0.066	0.033	0.158*	1				
Conscientousness	-0.121*	0.040	0.175**	0.172**	0.018	0.314**	1			
Neuroticism	-0.095	0.099	-0.014	0.021	-0.128*	-0.238**	-0.77	1		
Openness	-0.035	-0.162**	0.045	0.066	-0.033	0.014	0.043	0.06	1	
Symptom load	0.015	0.037	-0.138	-0.148*	-0.072	-0.130	-0.212**	0/35	0.1	1

Table F24

Spearman's Rank-Order Correlations Between Demographic Variables,Personality Traits, and Symptom Load Among Pharmacists

Variable	Nationality	Gender	Age	Professional Experience (years)	Extraversion	Agreeableness	Conscientousness	Neuroticism	Openness	Symptom load
Nationality	1									
Gender	-0.073	1								
Age	-0.045	-0.77	1							
Professional Experience (years)	-0.136**	-0.079	0.881**	1						
Extraversion	-0.086	0.008	0.002	0.002	1					
Agreeableness	-0.048	0.054	0.066	0.033	0.158**	1				
Conscientousness	-0.121**	0.040	0.175**	0.172**	0.018	0.314**	1			
Neuroticism	0.095	0.099	-0.014	0.021	-0.128*	0.238**	-0.077	1		
Openness	0.021	-0.057	-0.146	-0.084	0.101	0.108	0.114	0.099	1	
Symptom load	-0.076	0.129	-0.151	-0.234**	-0.004	0/003	-0.054	-0.019	0.170	1

Table F25

Bootstrapped Multiple Linear Regression Coefficients Predicting Symptom Load by Profession

Bootstrap[a]		B	Bias	Std. Error	Sig. (2-tailed)	BCa 95% Confidence Interval Lower	Upper
Medics Adjusted R-squared 0.090	(Constant)	8.937	.365[b]	3.366[b]	.008[b]	1.017[b]	17.200[b]
	Nationality	-1.600	-.110[b]	1.631[b]	.236[b]	-4.552[b,c]	2.242[b]
	Gender	.461	-.062[b]	.620[b]	.446[b]	-.645[b]	1.445[b]
	Age	1.192	-.087[b]	.618[b]	.060[b]	-.053[b]	2.145[b]
	Professional Experience (years)	-1.510	.044[b]	.473[b]	**.001[b]**	-2.442[b]	-.487[b]
	Extraversion	-.097	-.008[b]	.201[b]	.620[b]	-.483[b]	.257[b]
	Agreeableness	-.179	.010[b]	.239[b]	.452[b]	-.645[b]	.303[b]
	Conscientousness	.177	.008[b]	.374[b]	.657[b]	-.579[b]	.902[b]
	Neuroticism	-.484	-.008[b]	.231[b]	**.036[b]**	-.922[b]	-.069[b]
	Openness	.472	-.007[b]	.176[b]	.006[b]	.125[b]	.824[b]
Nurses Adjusted R-squared 0.145	(Constant)	6.372	.110	2.894	.023	.748	12.331
	Nationality	-.138	-.012	.987	.873	-2.228	1.782
	Gender	.241	.039	.640	.703	-1.053	1.548
	Age	.115	-.037	.457	.778	-.747	.955
	Professional Experience (years)	-.433	.031	.403	.275	-1.278	.470
	Extraversion	.075	-.001	.200	.716	-.282	.454
	Agreeableness	-.059	.002	.163	.718	-.354	.262
	Conscientousness	-.370	-.010	.191	.058	-.774	-.015
	Neuroticism	.610	.002	.131	.001	.345	.871
	Openness	.241	-.013	.164	.142	-.083	.548

Pharmacists Adjusted R-squared 0.286	(Constant)	-9.701	.132[d]	4.136[d]	.014[d]	-17.946[d]	-.909[d]
	Nationality	5.091	.104[d]	1.646[d]	**.003[d]**	1.403[d]	8.620[d]
	Gender	2.004	-.036[d]	.882[d]	**.026[d]**	.165[d]	3.580[d]
	Age	-.857	.087[d]	.778[d]	.254[d]	-2.608[d]	1.008[d]
	Professional Experience (years)	1.299	-.030[d]	.726[d]	.077[d]	-.255[d]	2.644[d]
	Extraversion	.052	.013[d]	.165[d]	.771[d]	-.257[d]	.386[d]
	Agreeableness	.162	.008[d]	.274[d]	.543[d]	-.403[d]	.740[d]
	Conscientousness	.381	-.016[d]	.294[d]	.169[d]	-.270[d]	.908[d]
	Neuroticism	.485	-.028[d]	.211[d]	**.031[d]**	.084[d]	.817[d]
	Openness	-.227	-.022[d]	.233[d]	.325[d]	-.662[d]	.158[d]

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

b.Based on 986 samples

c. Some results could not be computed from jackknife samples, so this confidence interval is computed by the percentile rather than the BCa method. d. Based on 999 samples

Table F26

Simple mediation models by profession

Profession	Demographic Predictor	Mediator (Personality Trait)	**S**ignificant a path	Significant b path	Significant Direct Effect (c')	Significant Indirect Effect (a×b)	Mediation
Medical Practitioner	Professional Experience	Extraversion	No	No	Yes (p = 0.0041)	No	No
		Agreeableness	No	No	Yes (p = 0.005)	No	No
		Conscientiousness	No	No	Yes (p = 0.0035)	No	No
		Neuroticism	Yes (p=0.028)	No (p = 0.0987)	Yes (p = 0.0029)	No	No
		Openness	No	No (p = 0.1001)	Yes (p = 0.0047)	No	No
	Gender	Extraversion	No	No	No	No	No
		Agreeableness	No	No	No	No	No
		Conscientiousness	No	No	No	No	No
		Neuroticism	No	No	No	No	No
		Openness	No	No (p = 0.0584)	No	No	No
	Nationality	Extraversion	No	No	No	No	No
		Agreeableness	Trend (p=0.065)	No	No	No	No
		Conscientiousness	No	No	No	No	No
		Neuroticism	No	No	No	No	No
		Openness	No	No (p = 0.0625)	No	No	No
Nurse	Professional Experience	Extraversion	No	No	Yes (p = 0.031)	No	No
		Agreeableness	No	Yes (p = 0.045)	Yes (p = 0.034)	No	No
		Conscientiousness	No	Yes (p = .014)	Yes (p = 0.014)	No	No
		Neuroticism	No	Yes (p < 0.001)	Yes (p = 0.027)	No	No

Nurse	Gender	Extraversion	No	No	No	No	No
		Agreeableness	No	Yes (p = 0.044)	No	No	No
		Conscientiousness	No	Yes (p = 0.004)	No	No	No
		Neuroticism	No	Yes (p < 0.001)	No	No	No
		Openness	**Yes (p=0.011)**	No	No	No	No
	Nationality	Extraversion	No	No	No	No	No
		Agreeableness	No	Yes (p = 0.040)	No	No	No
		Conscientiousness	Yes (p=0.018)	Yes (p = 0.008)	No	No	No
		Neuroticism	No	Yes (p < 0.001)	No	No	No
		Openness	No	No	No	No	No
Pharmacist	Professional Experience	Extraversion	No	No	No	No	No
		Agreeableness	No	No	No	No	No
		Conscientiousness	No	No	No	No	No
		Neuroticism	No	**Yes (p = 0.007)**	No	No	No
		Openness	**Yes (p=0.042)**	No	No	No	No
	Gender	Extraversion	No	No	**Yes**	No	No
		Agreeableness	**Yes (p = 0.038)**	No	**Yes**	No	No
		Conscientiousness	**Yes (p=0.011)**	No	**Yes**	No	No
		Neuroticism	No	**Yes (p = 0.011)**	**Yes**	No	No
		Openness	No	No	**Yes**	No	No
	Nationality	Extraversion	No	No	**Yes**	No	No
		Agreeableness	No	No	**Yes**	No	No
		Conscientiousness	No	Trend (p = 0.068)	**Yes**	No	No
		Neuroticism	No	**Yes (p = 0.006)**	**Yes**	No	No
		Openness	No	No	**Yes**	No	No

Table F27

Unstandardised indirect and direct effects of professional experience, gender, and nationality as medical practitioners on symptom load, using the simple mediation model.

Professional Experience	Medical Practitioners	Indirect effect				Direct effect
		Unstandardised effect	Boot LLCI	BootULCI	Sig. p	
	Extraversion	0.000	-0.0367	0.0369	No	Yes p=0.0041
	Agreeableness	0.0072	-0.038	0.0683	No	Yes p= 0.005
	Conscientiousness	-0.0017	-0.0843	0.0838	No	Yes p=0.0035
	Neuroticism	0.0768	0.0232	0.2309	No	Yes p=0.0029
	Openness	-0.0198	-0.1010	0.0546	No	Yes p=0.0049
Gender	Extraversion	0.000	0.0986	0.1051	No	No
	Agreeableness	-0.0005	0.1393	0.1370	No	No
	Conscientiousness	-0.0171	0.2690	0.1179	No	No
	Neuroticism	0.0273	0.1093	0.2293	No	No
	Openness	-0.0457	0.2883	0.1962	No	No
Nationality	Extraversion	-0.0122	0.3507	0.3613	No	No
	Agreeableness	-0.1618	-0.7257	0.3918	No	No
	Conscientiousness	0.0466	-0.7807	0.8508	No	No
	Neuroticism	-0.1124	-0.5607	0.1856	No	No
	Openness	-0.0650	1.1059	0.6551	No	No

Table F28

Unstandardised indirect and direct effects of professional experience, gender, and nationality as Nurses on symptom load using the simple mediation model.

Professional Experience	Nurses	Indirect effect				Direct effect
		Unstandardised effect	Boot LLCI	BootULCI	Sig. p	
	Extraversion	0.0036	-0.0323	0.0602	No	Yes p=0.0314
	Agreeableness	0.0044	-0.0653	0.0783	No	Yes p=0.0340
	Conscientiousness	-0.0530	-0.1381	0.0108	No	No
	Neuroticism	-0.0119	-0.1422	0.1214	No	Yes p=0.0274
	Openness	-0.0125	-0.0740	0.0376	No	Yes p=0.0377
Gender	Extraversion	0.0109	-0.1580	0.1489	No	No
	Agreeableness	-0.0445	-0.2554	0.1718	No	No
	Conscientiousness	-0.0267	0.3251	0.2194	No	No
	Neuroticism	0.1431	-0.2960	0.5930	No	No
	Openness	-0.1843	-0.4907	0.0476	No	No
Nationality	Extraversion	0.0788	-0.2237	0.5493	No	No
	Agreeableness	0.2080	-0.2810	0.9289	No	No
	Conscientiousness	0.5164	-0.1417	1.6244	No	No
	Neuroticism	0.0089	-0.6588	0.7711	No	No
	Openness	-0.3755	-1.222	0.6065	No	No

Table F29

Unstandardised indirect and direct effects of professional experience, gender, and nationality as Pharmacists on symptom load using the simple mediation model.

Professional Experience	Pharmacists	Indirect effect				Direct effect
		Unstandardised effect	Boot LLCI	Boot ULCI	Sig. p	
	Extraversion	-0.0070	-0.1753	0.1190	No	No
	Agreeableness	-0.0190	-0.1571	0.1169	No	No
	Conscientiousness	0.0054	-0.1969	0.1933	No	No
	Neuroticism	-0.0640	-0.3251	0.1219	No	No
	Openness	-0.0431	-0.3176	0.1936	No	No
Gender	Extraversion	-0.0053	0.3386	0.2177	No	No
	Agreeableness	-0.0176	-0.4643	0.5335	No	No
	Conscientiousness	0.2091	-0.3562	1.0805	No	No
	Neuroticism	0.1868	-0.3297	0.7017	No	No
	Openness	0.0324	-0.3342	0.4655	No	No
Nationality	Extraversion	-0.0730	-0.7125	0.3118	No	Yes p=0.0027
	Agreeableness	-0.0354	-0.8088	0.3207	No	Yes p=0.0033
	Conscientiousness	-0.1712	-0.8897	0.4842	No	Yes p=0.0017
	Neuroticism	0.1442	-0.7537	0.9080	No	Yes p=0.0027
	Openness	0.0124	-0.2881	0.3856	No	Yes p=0.0027

The following Matrices provide the raw data to Table F29 – Unstandandardised indirect and direct effects of professional experience, gender, and nationality as pharmacists on symptom load using a simple mediation model. The tables F27-F29 were deliberately presented in this compact, streamlined format to ensure that the results are directly comparable to the other SeViD studies. The same procedure was adopted for the two professions and to test for parallel media

Matrix

Run MATRIX procedure:

```
***************** PROCESS Procedure for SPSS Version 4.2 *****************
       Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
   Documentation available in Hayes (2022). www.guilford.com/p/hayes3

Model: 4
   Y: SymptomL
  X: q6
  M: Extraver

Sample
Size:  73

**************************************************************************
******
OUTCOME VARIABLE:
 Extraver

Model Summary
        R      R-sq       MSE         F       df1       df2         p
    .0919     .0084    5.6688     .6050    1.0000   71.0000     .4393

Model
              coeff        se         t         p       LLCI       ULCI
constant     5.7113     .6938    8.2319     .0000    4.3279    7.0947
q6           .1971      .2535     .7778     .4393    -.3082     .7025

**************************************************************************
******
```

VARIABLE:
SymptomL

Model Summary

R	R-sq	MSE	F	df1	df2	p
.0594	.0035	13.9098	.1241	2.0000	70.0000	.8835

Model

	coeff	se	t	p	LLCI	ULCI
constant	7.3834	1.5193	4.8596	.0000	4.3531	10.4136
q6	-.1756	.3987	-.4405	.6609	-.9708	.6196
Extraver	-.0355	.1859	-.1910	.8491	-.4063	.3353

********** DIRECT AND INDIRECT EFFECTS OF X ON Y **********

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-.1756	.3987	-.4405	.6609	-.9708	.6196

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
Extraver	-.0070	.0623	-.1753	.1190

********** BOOTSTRAP RESULTS FOR REGRESSION MODEL PARAMETERS **********

OUTCOME VARIABLE:
Extraver

	Coeff	BootMean	BootSE	BootLLCI	BootULCI
constant	5.7113	5.7033	.7363	4.3071	7.2275
q6	.1971	.1937	.2638	-.3540	.7161

OUTCOME VARIABLE:
SymptomL

	Coeff	BootMean	BootSE	BootLLCI	BootULCI
constant	7.3834	7.3165	1.4872	4.3836	10.4533
q6	-.1756	-.1806	.3903	-.9412	.6313
Extraver	-.0355	-.0252	.1858	-.3809	.3549

********** ANALYSIS NOTES AND ERRORS **********

Level of confidence for all confidence intervals in output:
95.0000
Number of bootstrap samples for percentile bootstrap confidence intervals:
1000
WARNING: Variables names longer than eight characters can produce incorrect output
when some variables in the data file have the same first eight characters. Shorter variable names are recommended. By using this output, you are accepting all risk and consequences of interpreting or reporting results that may be incorrect.

------ END MATRIX -----

* Encoding: UTF-8.
preserve.
set printback=off.

Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.2 *****************

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2022). www.guilford.com/p/hayes3

****
Model: 4
Y: SymptomL
X: q6
M: Agreeabl

Sample
Size: 71

****
OUTCOME VARIABLE:
Agreeabl

Model Summary

R	R-sq	MSE	F	df1	df2	p
.1009	.0102	2.2856	.7091	1.0000	69.0000	.4026

Model

	coeff	se	t	p	LLCI	ULCI
constant	7.7653	.4448	17.4579	.0000	6.8779	8.6526
q6	-.1375	.1633	-.8421	.4026	-.4632	.1882

****
******
OUTCOME VARIABLE:
SymptomL

Model Summary

R	R-sq	MSE	F	df1	df2	p
.0702	.0049	14.2173	.1683	2.0000	68.0000	.8454

Model

	coeff	se	t	p	LLCI	ULCI
constant	6.0326	2.5820	2.3364	.0224	.8802	11.1849
q6	-.1255	.4093	-.3066	.7601	-.9422	.6912
Agreeabl	.1379	.3003	.4592	.6476	-.4613	.7370

********** DIRECT AND INDIRECT EFFECTS OF X ON Y
****

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-.1255	.4093	-.3066	.7601	-.9422	.6912

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
Agreeabl	-.0190	.0645	-.1571	.1169

********** BOOTSTRAP RESULTS FOR REGRESSION MODEL PARAMETERS **********

OUTCOME VARIABLE:
Agreeabl

	Coeff	BootMean	BootSE	BootLLCI	BootULCI
constant	7.7653	7.7656	.4168	6.9505	8.5818
q6	-.1375	-.1385	.1722	-.4797	.1914

OUTCOME VARIABLE:
SymptomL

	Coeff	BootMean	BootSE	BootLLCI	BootULCI

```
constant     6.0326     5.9175     2.4678      .8971    10.6143
q6           -.1255     -.1475      .3927     -.9224      .6313
Agreeabl      .1379      .1589      .2901     -.3799      .7782

************************ ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  1000

WARNING: Variables names longer than eight characters can produce incorrect
output
when some variables in the data file have the same first eight characters. Shorter
variable names are recommended. By using this output, you are accepting all risk
and consequences of interpreting or reporting results that may be incorrect.

------ END MATRIX -----



* Encoding: UTF-8.
preserve.
set printback=off.

Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.2
*****************

        Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
******
Model: 4
    Y: Symptom Load
    X: q6
    M: Conscientiousness

Sample
Size:  73

**************************************************************************
******
OUTCOME VARIABLE:
```

Conscien

Model Summary

R	R-sq	MSE	F	df1	df2	p
.0091	.0001	2.1056	.0058	1.0000	71.0000	.9393

Model

	coeff	se	t	p	LLCI	ULCI
constant	8.8882	.4228	21.0208	.0000	8.0451	9.7313
q6	.0118	.1545	.0764	.9393	-.2962	.3198

****
******
OUTCOME VARIABLE:
SymptomL

Model Summary

R	R-sq	MSE	F	df1	df2	p
.1867	.0349	13.4725	1.2639	2.0000	70.0000	.2889

Model

	coeff	se	t	p	LLCI	ULCI
constant	3.1258	2.8746	1.0874	.2806	-2.6076	8.8591
q6	-.1880	.3907	-.4812	.6319	-.9673	.5913
Conscien	.4562	.3002	1.5196	.1331	-.1425	1.0549

********** DIRECT AND INDIRECT EFFECTS OF X ON Y **********

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-.1880	.3907	-.4812	.6319	-.9673	.5913

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
Conscien	.0054	.0875	-.1969	.1933

********** BOOTSTRAP RESULTS FOR REGRESSION MODEL PARAMETERS **********

OUTCOME VARIABLE:
Conscien

	Coeff	BootMean	BootSE	BootLLCI	BootULCI
constant	8.8882	8.8989	.4102	8.0325	9.6923
q6	.0118	.0076	.1645	-.3178	.3411

OUTCOME VARIABLE:
SymptomL

	Coeff	BootMean	BootSE	BootLLCI	BootULCI
constant	3.1258	3.3282	3.1068	-2.0747	9.8823
q6	-.1880	-.1636	.3810	-.9201	.5342
Conscien	.4562	.4254	.3286	-.3164	.9992

********** ANALYSIS NOTES AND ERRORS **********

Level of confidence for all confidence intervals in output:
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
1000

WARNING: Variables names longer than eight characters can produce incorrect output
when some variables in the data file have the same first eight characters. Shorter variable names are recommended. By using this output, you are accepting all risk and consequences of interpreting or reporting results that may be incorrect.

------ END MATRIX -----

* Encoding: UTF-8.
preserve.
set printback=off.

Matrix

Run MATRIX procedure:

********** PROCESS Procedure for SPSS Version 4.2 **********

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2022). www.guilford.com/p/hayes3

```
*************************************************************************
******
Model: 4
   Y: Symptom Load
   X: q6
   M: Neurotic

Sample
Size:  73

*************************************************************************
******
OUTCOME VARIABLE:
 Neurotic

Model Summary
        R      R-sq       MSE         F       df1       df2         p
    .0614     .0038    4.1690     .2688    1.0000   71.0000     .6057

Model
            coeff         se          t          p       LLCI       ULCI
constant   6.1729     .5950   10.3750     .0000    4.9866    7.3593
q6         -.1127     .2174    -.5185     .6057    -.5461     .3207

*************************************************************************
******
OUTCOME VARIABLE:
 SymptomL

Model Summary
        R      R-sq       MSE         F       df1       df2         p
    .3173     .1007   12.5536    3.9184    2.0000   70.0000     .0244

Model
            coeff         se          t          p       LLCI       ULCI
constant   3.6754    1.6377    2.2443     .0280     .4092    6.9417
q6         -.1186     .3779    -.3140     .7545    -.8723     .6350
Neurotic    .5678     .2059    2.7572     .0074     .1571     .9786


****************** DIRECT AND INDIRECT EFFECTS OF X ON Y
*****************

Direct effect of X on Y
    Effect         se          t          p       LLCI       ULCI
    -.1186     .3779    -.3140     .7545    -.8723     .6350

Indirect effect(s) of X on Y:
```

```
          Effect     BootSE   BootLLCI   BootULCI
Neurotic    -.0640     .1108    -.3251     .1219

********** BOOTSTRAP RESULTS FOR REGRESSION MODEL
PARAMETERS **********

OUTCOME VARIABLE:
 Neurotic

          Coeff   BootMean     BootSE   BootLLCI   BootULCI
constant   6.1729    6.1884     .4305    5.3522     7.0380
q6         -.1127    -.1208     .1776    -.4842     .2151

----------

OUTCOME VARIABLE:
 Symptom Load

          Coeff   BootMean     BootSE   BootLLCI   BootULCI
constant   3.6754    3.6137    1.5213     .5987     6.6636
q6         -.1186    -.1103     .3673    -.8514     .6166
Neurotic    .5678     .5744     .1942     .2030     .9694

************************ ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  1000

WARNING: Variables names longer than eight characters can produce incorrect
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------ END MATRIX -----

* Encoding: UTF-8.
preserve.
set printback=off.
```

Matrix

Run MATRIX procedure:

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****
Model: 4
Y: Symptom Load
X: q6
M: Openness

Sample
Size: 71

****
OUTCOME VARIABLE:
Openness

Model Summary

R	R-sq	MSE	F	df1	df2	p
.2425	.0588	3.7613	4.3105	1.0000	69.0000	.0416

Model

	coeff	se	t	p	LLCI	ULCI
constant	5.3900	.5790	9.3098	.0000	4.2350	6.5450
q6	.4351	.2095	2.0762	.0416	.0170	.8531

****
OUTCOME VARIABLE:
SymptomL

Model Summary

R	R-sq	MSE	F	df1	df2	p
.0606	.0037	14.0347	.1253	2.0000	68.0000	.8824

Model

	coeff	se	t	p	LLCI	ULCI
constant	7.4554	1.6798	4.4382	.0000	4.1033	10.8074
q6	-.0636	.4172	-.1524	.8793	-.8961	.7690
Openness	-.0990	.2325	-.4256	.6717	-.5630	.3651

***************** DIRECT AND INDIRECT EFFECTS OF X ON Y *****************

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
-.0636	.4172	-.1524	.8793	-.8961	.7690

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
Openness	-.0431	.1205	-.3176	.1936

********** BOOTSTRAP RESULTS FOR REGRESSION MODEL PARAMETERS **********

OUTCOME VARIABLE:
Openness

	Coeff	BootMean	BootSE	BootLLCI	BootULCI
constant	5.3900	5.3948	.5908	4.2258	6.6129
q6	.4351	.4342	.2258	-.0275	.8709

OUTCOME VARIABLE:
SymptomL

	Coeff	BootMean	BootSE	BootLLCI	BootULCI
constant	7.4554	7.4507	1.6335	4.3442	10.9036
q6	-.0636	-.0614	.4202	-.9155	.7597
Openness	-.0990	-.0962	.2380	-.5864	.3935

********** ANALYSIS NOTES AND ERRORS **********

Level of confidence for all confidence intervals in output:
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
1000

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------ END MATRIX -----

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set printback=off.



Run MATRIX procedure:

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*****************

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**************************************************************************
******
Model: 4
    Y: Symptom Load
    X: q3
    M: Extraversion

Sample
Size:  72

**************************************************************************
******
OUTCOME VARIABLE:
 Extraver

Model Summary
        R       R-sq        MSE          F        df1        df2          p
     .0424      .0018     5.6399      .1259     1.0000    70.0000      .7238

Model
            coeff         se          t          p       LLCI       ULCI
constant   5.8768     1.0885     5.3989      .0000     3.7058     8.0477
q3          .2185      .6158      .3548      .7238    -1.0096     1.4466

**************************************************************************
******
OUTCOME VARIABLE:
 SymptomL

Model Summary
        R       R-sq        MSE          F        df1        df2          p
     .2924      .0855    12.6442     3.2245     2.0000    69.0000      .0458

Model
```

```
            coeff         se          t          p       LLCI       ULCI
constant     2.8042     1.9397     1.4457      .1528    -1.0654     6.6739
q3           2.3433      .9228     2.5394      .0134      .5024     4.1843
Extraver     -.0242      .1790     -.1351      .8930     -.3812      .3329


****************** DIRECT AND INDIRECT EFFECTS OF X ON Y
*****************

Direct effect of X on Y
    Effect         se          t          p       LLCI       ULCI
    2.3433      .9228     2.5394      .0134      .5024     4.1843

Indirect effect(s) of X on Y:
            Effect     BootSE   BootLLCI   BootULCI
Extraver     -.0053      .1274     -.3386      .2177

********** BOOTSTRAP RESULTS FOR REGRESSION MODEL
PARAMETERS *************

OUTCOME VARIABLE:
 Extraver

            Coeff   BootMean     BootSE   BootLLCI   BootULCI
constant     5.8768     5.8687     1.1103     3.6231     7.9832
q3           .2185      .2222      .6170     -.9444     1.4678

----------

OUTCOME VARIABLE:
 SymptomL

            Coeff   BootMean     BootSE   BootLLCI   BootULCI
constant     2.8042     2.6861     1.7992     -.9045     6.1597gt
q3           2.3433     2.3919      .9290      .6377     4.1441
Extraver     -.0242     -.0197      .1868     -.3746      .3579

************************ ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  1000

WARNING: Variables names longer than eight characters can produce incorrect
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Matrix

Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.2 *****************

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****
******
Model: 4
Y: Symptom Load
X: q3
M: Agreeableness

Sample
Size: 70

****
******
OUTCOME VARIABLE:
Agreeableness

Model Summary

R	R-sq	MSE	F	df1	df2	p
.2481	.0616	2.1963	4.4602	1.0000	68.0000	.0384

Model

	coeff	se	t	p	LLCI	ULCI
constant	6.0408	.6806	8.8763	.0000	4.6828	7.3989
q3	.8163	.3865	2.1119	.0384	.0450	1.5876

****
******
OUTCOME VARIABLE:
Symptom Load

Model Summary

R	R-sq	MSE	F	df1	df2	p
.2980	.0888	12.9013	3.2642	2.0000	67.0000	.0444

Model

	coeff	se	t	p	LLCI	ULCI
constant	2.7382	2.4234	1.1299	.2626	-2.0990	7.5754
q3	2.4103	.9671	2.4924	.0152	.4800	4.3406
Agreeableness	-.0216	.2939	-.0736	.9416	-.6083	.5650

********** DIRECT AND INDIRECT EFFECTS OF X ON Y
****

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
2.4103	.9671	2.4924	.0152	.4800	4.3406

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
Agreeableness	-.0176	.2393	-.4643	.5335

********** BOOTSTRAP RESULTS FOR REGRESSION MODEL
PARAMETERS **********

OUTCOME VARIABLE:
Agreeabl

	Coeff	BootMean	BootSE	BootLLCI	BootULCI
constant	6.0408	6.0722	.5745	5.0266	7.2745
q3	.8163	.7986	.3520	.0372	1.4300

OUTCOME VARIABLE:
SymptomL

	Coeff	BootMean	BootSE	BootLLCI	BootULCI

```
constant     2.7382     2.6347     2.4141    -2.0248     7.5859
q3           2.4103     2.3918      .9213      .6123     4.2225
Agreeabl     -.0216     -.0056      .2665     -.5234      .5481

************************ ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  1000

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------ END MATRIX -----


* Encoding: UTF-8.
preserve.
set printback=off.
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Matrix

```
Run MATRIX procedure:

***************** PROCESS Procedure for SPSS Version 4.2
*****************

        Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
******
Model: 4
    Y: SymptomL
    X: q3
    M: Conscien

Sample
Size:  72
```

****
******
OUTCOME VARIABLE:
Conscien

Model Summary
R R-sq MSE F df1 df2 p
.2972 .0883 1.9317 6.7805 1.0000 70.0000 .0112

Model
coeff se t p LLCI ULCI
constant 7.2997 .6370 11.4587 .0000 6.0292 8.5703
q3 .9384 .3604 2.6039 .0112 .2196 1.6571

****
******
OUTCOME VARIABLE:
SymptomL

Model Summary
R R-sq MSE F df1 df2 p
.3038 .0923 12.5502 3.5070 2.0000 69.0000 .0354

Model
coeff se t p LLCI ULCI
constant 1.0356 2.7536 .3761 .7080 -4.4577 6.5288
q3 2.1289 .9620 2.2130 .0302 .2098 4.0481
Conscien .2228 .3047 .7314 .4670 -.3849 .8306

********** DIRECT AND INDIRECT EFFECTS OF X ON Y **********

Direct effect of X on Y
Effect se t p LLCI ULCI
2.1289 .9620 2.2130 .0302 .2098 4.0481

Indirect effect(s) of X on Y:
Effect BootSE BootLLCI BootULCI
Conscien .2091 .3667 -.3562 1.0805

********** BOOTSTRAP RESULTS FOR REGRESSION MODEL PARAMETERS **********

OUTCOME VARIABLE:
Conscien

```
            Coeff   BootMean     BootSE   BootLLCI   BootULCI
constant     7.2997     7.2988      .8284     5.6043     8.8759
q3           .9384      .9398      .4311      .0690     1.7963

----------

OUTCOME VARIABLE:
 SymptomL

            Coeff   BootMean     BootSE   BootLLCI   BootULCI
constant     1.0356     1.4006     3.0872    -3.4172     8.4348
q3           2.1289     2.0677     1.0212      .0249     4.0091
Conscien      .2228      .1950      .3553     -.5437      .8229

************************ ANALYSIS NOTES AND ERRORS
************************

Level of confidence for all confidence intervals in output:
  95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
  1000

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------ END MATRIX -----


* Encoding: UTF-8.
preserve.
set printback=off.
```
Matrix

Run MATRIX procedure:

```
***************** PROCESS Procedure for SPSS Version 4.2
*****************

        Written by Andrew F. Hayes, Ph.D.       www.afhayes.com
    Documentation available in Hayes (2022). www.guilford.com/p/hayes3

**************************************************************************
******
Model: 4
    Y: SymptomL
```

X: q3
M: Neurotic

Sample
Size: 72

****
OUTCOME VARIABLE:
Neurotic

Model Summary

R	R-sq	MSE	F	df1	df2	p
.0810	.0066	4.1990	.4625	1.0000	70.0000	.4987

Model

	coeff	se	t	p	LLCI	ULCI
constant	5.2577	.9392	5.5979	.0000	3.3845	7.1309
q3	.3613	.5313	.6801	.4987	-.6983	1.4210

****
OUTCOME VARIABLE:
SymptomL

Model Summary

R	R-sq	MSE	F	df1	df2	p
.4094	.1676	11.5091	6.9452	2.0000	69.0000	.0018

Model

	coeff	se	t	p	LLCI	ULCI
constant	-.0558	1.8709	-.0298	.9763	-3.7882	3.6766
q3	2.1512	.8825	2.4376	.0174	.3907	3.9118
Neurotic	.5170	.1979	2.6125	.0110	.1222	.9117

********** DIRECT AND INDIRECT EFFECTS OF X ON Y **********

Direct effect of X on Y

Effect	se	t	p	LLCI	ULCI
2.1512	.8825	2.4376	.0174	.3907	3.9118

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
Neurotic	.1868	.2666	-.3297	.7017

********** BOOTSTRAP RESULTS FOR REGRESSION MODEL PARAMETERS **********

OUTCOME VARIABLE:
Neurotic

	Coeff	BootMean	BootSE	BootLLCI	BootULCI
constant	5.2577	5.2742	.8098	3.6667	6.8957
q3	.3613	.3450	.4838	-.6087	1.3571

OUTCOME VARIABLE:
SymptomL

	Coeff	BootMean	BootSE	BootLLCI	BootULCI
constant	-.0558	-.1085	1.6464	-3.3010	3.4070
q3	2.1512	2.1832	.8279	.6084	3.8136
Neurotic	.5170	.5201	.1860	.1320	.8895

********** ANALYSIS NOTES AND ERRORS **********

Level of confidence for all confidence intervals in output:
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:
1000

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------ END MATRIX -----

* Encoding: UTF-8.
preserve.
set printback=off

Table F30

Parallel mediation models by profession

Profession	Predictor Variable	Mediator (Personality Trait)	Path a (X → M)	Path b (M → Y)	Indirect Effect (a × b)	Mediation Supported
	Professional Experience *Direct Effect (X → Y) Yes (B = -0.74, p =.003*)	Extraversion	No	No	No	No
Medical Practitioners		Agreeableness	No	No	No	No
		Conscientiousness	No	No	No	No
		Neuroticism	Yes (B = -0.21, p =0.032)	Yes (B = -0.53, p =0.032)	B = .11, 95% CI [0.001, 0.32]	Yes
		Openness	No	No	No	No
	Gender *Direct Effect (X → Y) No*	Extraversion	No	No	No	No
		Agreeableness	No	No	No	No
		Conscientiousness	No	No	No	No
		Neuroticism	No	No	No	No
		Openness	No	Yes (B =0.43, p=0.027)	No	No
	Nationality *Direct Effect (X → Y) No*	Extraversion	No	No	No	No
		Agreeableness	No (B=1.31, p=0.061)	No	No	No
		Conscientiousness	No	No	No	No
		Neuroticism	No	No	No	No
		Openness	No	No	No	No
Nurses	**Professional Experience** *Direct Effect (X → Y) Yes* (B = -0.74, p = 0.003)	Extraversion	No	No	No	No
		Agreeableness	No	**Yes (B=0.31, p=0.044)**	No	No
		Conscientiousness	No	**Yes (B =0.42, p=0.004)**	No	No
		Neuroticism	No	**Yes (B = 0.64, p <0.001)**	No	No
		Openness	No	No	No	No
	Gender *Direct Effect*	Extraversion	No	No	No	No
		Agreeableness	No	No	No	No
		Conscientiousness	No	No	No	No

	(X → Y) *No*	Neuroticism	No	No	No	No
		Openness	No (B =0.70, p =.011)	No	No	No
	Nationality *Direct Effect (X → Y)* *No*	Extraversion	No	No	No	No
		Agreeableness	No	No	No	No
		Conscientiousness	Yes (B = 1.10, p =0.018)	**Yes (B = -0.47, p =0.008)**	No	No
		Neuroticism	No	No	No	No
		Openness	No	No	No	No
Pharmacists	**Professional Experience** *Direct Effect (X → Y)* *No*	Extraversion	No	No	No	No
		Agreeableness	No	No	No	No
		Conscientiousness	No	No	No	No
		Neuroticism	No	**Yes B =0.57, p =0.007**	No	No
		Openness	B = .44, p = .042	No	No	No
	Gender *Direct Effect (X → Y)* *Yes* B = 2.34, p = 0.013	Extraversion	No	No	No	No
		Agreeableness	B = .82, p = .038	No	No	No
		Conscientiousness	B = 0.94, p =0.011	No	No	No
		Neuroticism	No	**Yes B = .52, p =0.011**	No	No
		Openness	No	No	No	No
	Nationality *Direct Effect (X → Y)* Yes B = 4.10, p = 0.003	Extraversion	No	No	No	No
		Agreeableness	No B=1.31, p = 0.061 (trend)	No	No	No
		Conscientiousness	No	No	No	No
		Neuroticism	No	**Yes B = 0.55, p =0.006**	No	No
		Openness	No	No	No	No

Note. Only results that are significant or approaching significance are shown

Table F31

Unstandardised indirect and direct effects of professional experience, gender, and nationality as medical practitioners on symptom load using the parallel mediation model

Professional Experience	**Medical Practitioners**	**Unstandardised effect**	**Boot LLCI**	**BootULCI**	**Sig. p**
	Total unstandardised indirect effect	0.0906	-0.0715	0.3403	No
	Extraversion	-0.0025	-0.0424	0.0532	No
	Agreeableness	0.0071	-0.0424	0.0532	No
	Conscientiousness	-0.0082	-0.0712	0.0724	No
	Neuroticism	0.1130	0.0010	0.3158	Yes **p =0.032**
	Openness	-0.0188	-0.1258	0.0842	No
	Direct Effect	-0.7352	-1.2145	-0.2559	Yes **p=0.0029**
Gender	Total unstandardised indirect effect	0.0184	-0.4120	0.4216	No
	Extraversion	0.0017	-0.132	0.111	No
	Agreeableness	-0.0003	-0.156	0.161	No
	Conscientiousness	-0.0318	-0.344	0.139	No
	Neuroticism	0.0608	-0.102	0.381	No
	Openness	-0.0120	-0.304	0.299	No
	Direct Effect	0.760	-0.502	2.021	No
Nationality	Total unstandardised indirect effect	-0.424	-2.004	1.252	No
	Extraversion	0.029	-0.411	0.555	No
	Agreeableness	-0.225	-0.878	0.405	No
	Conscientiousness	0.048	-0.745	1.014	No
	Neuroticism	-0.191	-0.858	0.146	No
	Openness	-0.085	-1.333	0.712	No
	Direct Effect	-1.181	-4.841	2.479	No

Note. Only results that are significant or approaching significance are shown

Table F32

Unstandardised indirect and direct effects of professional experience, gender, and nationality as nurses on symptom load using the parallel mediation model

	Nurses	Unstandardised effect	Boot LLCI	BootULCI	Sig. p
Professional Experience	Total unstandardised indirect effect	-0.098	-0.269	0.069	No
	Extraversion	-0.001	-0.037	0.036	No
	Agreeableness	-0.001	-0.044	0.033	No
	Conscientiousness	-0.050	-0.144	0.008	No
	Neuroticism	-0.031	-0.174	0.104	No
	Openness	-0.016	-0.077	0.035	No
	Direct Effect	-0.370	-0.768	0.028	No
Gender	Total unstandardised indirect effect	-0.034	-0.657	0.496	No
	Extraversion	-0.014	-0.196	0.082	No
	Agreeableness	-0.009	-0.126	0.117	No
	Conscientiousness	-0.043	-0.304	0.174	No
	Neuroticism	0.209	-0.267	0.628	No
	Openness	-0.177	-0.514	0.049	No
	Direct Effect	0.432	-0.792	1.655	No
Nationality	Total unstandardised indirect effect	0.332	-0.633	1.461	No
	Extraversion	-0.042	-0.414	0.276	No
	Agreeableness	0.047	-0.323	0.548	No
	Conscientiousness	0.430	-0.110	1.382	Border line
	Neuroticism	-0.015	-0.688	0.699	No
	Openness	-0.089	-0.406	0.211	No
	Direct Effect	0.121	-1.988	2.229	No

Table F33

Unstandardised indirect and direct effects of professional experience, gender, and nationality as pharmacists on symptom load using the parallel mediation model

	Pharmacists	**Unstandardised effect**	**Boot LLCI**	**Boot ULCI**	**Sig. p**
Professional Experience	Total unstandardised indirect effect	-0.184	-0.652	0.249	No
	Extraversion	0.016	-0.134	0.163	No
	Agreeableness	-0.035	-0.206	0.125	No
	Conscientiousness	0.006	-0.223	0.216	No
	Neuroticism	-0.032	-0.316	0.190	No
	Openness	-0.138	-0.484	0.154	No
	Direct Effect	0.112	-0.719	0.944	No
Gender	Total unstandardised indirect effect	0.712	-0.466	2.118	No
	Extraversion	-0.007	-0.477	0.245	No
	Agreeableness	0.099	-0.379	0.769	No
	Conscientiousness	0.247	-0.385	1.280	No
	Neuroticism	0.266	-0.306	0.912	No
	Openness	0.107	-0.224	0.683	No
	Direct Effect	1.981	-0.056	4.018	Border line significant p=0.056
Nationality	Total unstandardised indirect effect	-0.063	-1.232	0.852	No
	Extraversion	0.046	-0.394	0.570	No
	Agreeableness	-0.047	-0.798	0.363	No
	Conscientiousness	-0.227	-1.066	0.437	No
	Neuroticism	0.125	-0.865	0.979	No
	Openness	0.039	-0.277	0.511	No
	Direct Effect	4.154	1.63	6.68	**Yes p=0.0016**