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Doctoral thesis

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Trondheim, March 2021

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To Eirin, Sofia and Niklas

Norsk sammendrag (Norwegian Summary)

Bakgrunn: Vold, overgrep og forsømmelser mot eldre er et alvorlig folkehelse- og menneskerettighetsproblem som forventes å øke i takt med den økende andelen eldre i befolkningen. Slike uønskede hendelser påvirker en persons velvære og har blitt satt i sammenheng med en rekke negative fysiske og psykiske helseutfall fra mindre plager til tidlig død. I tillegg har det betydelige samfunnsmessige og økonomiske konsekvenser. Vold, overgrep og forsømmelser kan skje både i hjemmet og i institusjon, og det kan begås av både pårørende, helsepersonell og medbeboere, og inkluderer ulike typer: psykisk vold, fysisk vold, økonomisk/materiell vold, seksuelle overgrep og forsømmelser.

I sykehjem er beboere spesielt sårbare og utsatte på grunn av sin fysiske og kognitive svikt, avhengighet av omsorgspersoner og et delt boareal med personer med utfordrende adferd. Ulike faktorer ved både den som blir utsatt og den som begår handlingen, deres relasjon, sykehjemmet og samfunnet for øvrig, har vist seg å ha betydning for at uønskede hendelser oppstår.

Verdens helseorganisasjon (WHO) understreker at vold, overgrep og forsømmelser mot eldre er mindre forsket på enn andre typer vold, og med den økende andelen eldre i befolkningen, oppfordrer WHO alle land til mer forskning som kan bidra til å forebygge og redusere omfanget av slike uønskede hendelser.

Formål: Det overordnede målet med denne avhandlingen var å frembringe ny kunnskap om omfanget og risikofaktorer relatert til vold, overgrep og forsømmelser mot beboere i norske sykehjem. Dette ble beskrevet i tre artikler med spesifikke formål: (I) estimere antallet hendelser begått av pleieansatte, og undersøke demografiske forskjeller ved ansatte som begår og ikke begår slike handlinger; (II) estimere antallet hendelser av aggresjon mellom beboere og undersøke forskjeller ved sykehjem som har høy og lav forekomst, og (III) undersøke faktorer på ulike nivå i den økologiske modellen (individuell, relasjonell, institusjonell) som kan ha en sammenheng med psykisk vold, fysisk vold og forsømmelser begått av pleieansatte. En fjerde artikkel, som er under utarbeidelse, estimerer antallet hendelser av vold og overgrep begått av pårørende i sykehjem.

Metode: Dette var en nasjonal tverrsnittstudie av 3693 pleieansatte rekruttert fra 100 ulike sykehjem over hele Norge. Dataene ble samlet inn ved hjelp av et kvantitativt spørreskjema som undersøkte antallet hendelser av vold, overgrep og forsømmelser observert og begått av pleieansatte, antallet hendelser av aggresjon mellom beboere, og antallet hendelser av vold og overgrep begått av pårørende i løpet av det siste året. I tillegg inneholdt skjemaet spørsmål om ulike faktorer knyttet til pleieansatte, deres relasjon med beboerne og faktorer ved sykehjemmet. Forekomsten av vold, overgrep og forsømmelser ble presentert med antall og prosent, mens risikofaktorene ble analysert med Pearsons khikvadrattest og en flernivå regresjonsmodell.

Funn: Resultat fra studien viser at 76% av pleieansatte hadde ved minst én anledning observert en kollega begå vold, overgrep eller forsømmelser, mens cirka 60% av pleieansatte innrømmet å ha begått minst én slik handling selv i løpet av det siste året. Psykisk vold og

forsømmelser var mest rapportert (artikkel I). Regresjonsmodellen viste at individuelle risikofaktorer for at pleieansatte begår psykisk vold, fysisk vold og forsømmelser var at de hadde helsefaglig utdanning, symptomer på psykiske plager, intensjon om å slutte i jobben og dårlige holdninger til personer med demens. Ansatte som rapporterte om dårlig kvalitet på egen barndom, rapporterte om flere forsømmelser. Relasjonelle faktorer som aggressiv adferd fra beboere og pleierelaterte konflikter, viste seg å ha sammenheng med flere hendelser av psykisk vold, fysisk vold og forsømmelser. Av institusjonelle faktorer, var mangel på støtte fra leder assosiert med flere handlinger av psykisk vold (artikkel III).

Nær 89% av pleieansatte hadde observert minst én hendelse av aggresjon mellom beboere det siste året, der verbal og fysisk aggresjon var mest rapportert. Pleieansatte som jobbet i skjermede avdelinger, i større sykehjem og sykehjem lokalisert i urbane/suburbane områder, rapporterte om flere hendelser enn ansatte som jobbet i korttids- og langtidsavdelinger, mindre sykehjem og sykehjem lokalisert i rurale områder (artikkel II). Litt under halvparten (46%) av pleieansatte rapporterte at de hadde observert minst én hendelse av vold og overgrep begått av pårørende det siste året, med handlinger av psykisk og fysisk karakter som de mest rapporterte.

Konklusjon: Denne avhandlingen presenterer resultater fra den første nasjonale studien som har undersøkt omfanget av og risikofaktorer relatert til vold, overgrep og forsømmelser mot beboere i norske sykehjem. Studien er en av de største i verden som har kartlagt omfanget av slike hendelser mot eldre i pleieinstitusjoner. Samlet sett bidrar funnene i denne avhandlingen til mer kunnskap om et utbredt og mangesidig problem i norske sykehjem. Et problem som trenger oppmerksomhet fra både helsepersonell, ledere i institusjoner, ledere i kommuner og samfunnet for øvrig, spesielt med tanke på den raskt økende befolkningen av eldre som alle har krav på gode og trygge helsetjenester.

Kandidat: Anja Botngård

Institutt: Institutt for samfunnsmedisin og sykepleie

Hovedveileder: Førsteamanuensis Wenche Malmedal (NTNU)

Veiledere: Professor Arne H. Eide (NTNU, SINTEF), Professor Laura Mosqueda (USC)

Finansieringskilde: Norges Forskningsråd

Ovennevnte avhandling er funnet verdig til å forsvares offentlig for graden philosophiae doctor (ph.d.) i medisin og helsevitenskap.

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English Summary

Introduction: Elder abuse is recognized as a public health problem, predicted to increase as many countries experience rapid growth in their population of older adults. Elder abuse undermines an older person's well-being and has been associated with a range of negative health outcomes from minor harms to premature death and has substantial societal and economic consequences. Elder abuse may occur in the community and institutional settings and includes various forms: psychological, physical, financial/material, and sexual abuse, and neglect.

In nursing homes, residents are particularly vulnerable due to their physical and cognitive impairments, the dependency of caregivers, and shared living arrangements with other impaired residents; hence, at higher risk of being exposed to abuse by nursing staff, fellow residents, and/or relatives. Different risk factors have been related to the individuals (victim and perpetrator), their relationship, the institution, and the society in general, demonstrating that elder abuse in nursing homes is a complex and multifaceted problem.

WHO emphasizes that elder abuse is less addressed than the other forms of interpersonal violence, and with the projected demographic changes in the population all over the world, countries are urged for more research that could lead to prevention and reduction of the mistreatment of older persons.

Aim: The overall aim of this thesis was to generate new knowledge on the extent, nature, and risk factors of elder abuse in Norwegian nursing homes. This was presented in three Papers with specific aims: (I) estimate the prevalence of observed and perpetrated staff-to-resident abuse and examine demographic differences between staff who perpetrate and not-perpetrate acts of abuse; (II) estimate the prevalence of resident-to-resident aggression and examine differences in facility characteristics between nursing homes with a high and low occurrence; (III) examine risk factors on different levels of the ecological model (individual, relational, institutional) associated with staff-to-resident psychological abuse, physical abuse, and neglect. A fourth study, in process, estimates the prevalence of relative-to-resident abuse in nursing homes.

Methods: This study was a national, cross-sectional survey of 3,693 nursing staff recruited from 100 nursing homes all over Norway. The quantitative data was collected by means of a questionnaire measuring the annual proportion of observed/perpetrated staff-to-resident abuse, observed resident-to-resident aggression, and observed relative-to-resident abuse, and the associations of the different individual (staff), relational, and institutional factors of elder abuse in nursing homes. The annual prevalence of the different types of abuse was presented with frequencies and percentages. Risk factors were analyzed with Pearson's chi-squared test and a multilevel regression model.

Results: Study findings revealed that 76% of the nursing staff had observed, and about 60% admitted, perpetrating at least one incident of staff-to-resident abuse during the previous year, where psychological abuse and neglect were the most reported subtypes (Paper I). The

multilevel regression model showed that individual risk factors of staff associated with psychological abuse, physical abuse, and neglect, were having health education, reporting symptoms of psychological distress, intention to leave their job, and reporting poor attitudes towards people with dementia. In addition, staff who reported poorer quality of childhood were more likely to perpetrate neglect. Relational factors such as care-related conflicts and resident aggression were associated with all three types of abuse. Of institutional factors, a lack of support from a manager was associated with perpetrating psychological abuse (Paper III).

Concerning resident-to-resident aggression, about 89% of the nursing staff had observed one or more incidents during the previous year, with verbal and physical aggression the most reported. Nursing staff working in dementia special care units, larger nursing homes, and nursing homes located in suburban/urban municipalities, reported more incidents than staff in short-term and long-term units, small institutions, and nursing homes located in rural municipalities (Paper II). Of relative-to-resident abuse, about 46% had observed one or more incidents during the previous year, with acts of psychological and physical character the most reported.

Conclusion: This thesis presents results from the first national study that has examined the extent, nature and risk factors of elder abuse in Norwegian nursing homes, and it is one of the largest studies worldwide providing evidence on the magnitude of elder abuse in institutional settings. Overall, the findings contribute to a greater knowledge of a prevalent and multifaceted problem of elder abuse in Norwegian nursing homes requiring immediate attention from both healthcare professionals, institutional managers, municipal leaders, and the society in general, considering in particular the rapidly aging population who are entitled to decent and safe long-term care services.

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These last years have been an extraordinary journey where I have met so many dedicated and hardworking people, and I have gained so much knowledge and experience in a field that has been underrecognized and underreported for too many years. These last years have also been a bit overwhelming, trying to find the researcher in myself, and how *I* can contribute to this important field of elder abuse. Luckily, I have worked with the experts, and I am so indebted to all those around me, supporting, cheering, and guiding me through this journey.

Dear primary supervisor Associate Professor Wenche Malmedal, I am so grateful that you introduced me to this field. It has been so inspiring to learn from your respected experience and see how devoted you have been for so many years to provide a safer place for older persons. Thank you so much for your guidance and motivation through these years. Dear supervisor Professor Arne Henning Eide, thank you for your valued knowledge and guidance, and your incredible calmness and patience through tons of meetings, emails, and documents. Dear supervisor Professor Laura Mosqueda, thank you for coming to Norway to share your knowledge, for giving appreciated responses, and for welcoming us to California and introducing us to all those dedicated researchers. I also extend my thanks to Associate Professor Lene Blekken, who stopped me from pulling my hair out while conducting the statistics in Paper III and instead guided me with stoic calmness.

I also like to thank Senior Engineer Berit Bjelkåsen at NTNU for helping with the pilot study, and Senior Adviser Kyrre Svarva, NTNU, with the questionnaire design and scanning of 4000 questionnaires. I extend my thanks to the nursing homes and staff who participated in the pilot and main study, especially to the devoted coordinators who were my long-stretched arms during the data collection. I also want to thank the reference group for valued suggestions.

Dear Janne Myhre, who has been my PhD colleague and roomie. I will never forget our good laughs and shared frustrations at the nicest office with the most beautiful view of Trondheim. A sincere thank also goes to my dear colleague and friend Stine Borgen Lund who has reminded me that *"the time to relax is when you don't have time for it".* Thank you to all my colleagues at the Department of Public Health and Nursing, and to my friends who have supported and believed in me through this journey, cheers!

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Trondheim, March 2021

Anja Bøtngård

List of Papers

The current thesis is based on the following papers:

I. Botngård, A., Eide, A.H., Mosqueda, L., & Malmedal, W. (2020). Elder abuse in Norwegian nursing homes: a cross-sectional exploratory study. *BMC Health Services Research, 20*(9), 1–12. https://doi.org/10.1186/s12913-019-4861-z

II. Botngård, A., Eide, A.H., Mosqueda, L., & Malmedal, W. (2020). Resident-to-resident aggression in Norwegian nursing homes: a cross-sectional exploratory study. *BMC Geriatrics, 20*(222), 1–10. https://doi.org/10.1186/s12877-020-01623-7

III. Botngård, A., Eide, A.H., Mosqueda, L., Blekken, L., & Malmedal, W. (2021) Factors associated with staff-to-resident abuse in Norwegian nursing homes: a cross-sectional exploratory study. *BMC Health Services Research, 21*(244), 1–20. https://doi.org/10.1186/s12913-021-06227-4

Acronyms and Abbreviations

ACR	Applied Clinical Research
ADL	Activity of Daily Living
APS	Adult Protective Service
CBPR	Community-based Participatory Research
CDC	Centers for Disease Control and Prevention
CI	Confidence Interval
COSMIN	Consensus-based Standards for the Selection of Health Measurement Instruments
CRE	Central Register of Establishments and Enterprises
CVI	Content Validity Index
ICC	Intraclass Correlation Coefficient
KT	Knowledge Translation
LPN	Licensed Practical Nurse
NPS	Neuropsychiatric Symptoms
NTNU	Norwegian University of Science and Technology
OECD	Organisation for Economic Co-operation and Development
OR	Odds Ratio
RN	Registered Nurse
RRA	Resident-to-Resident Aggression
SD	Standard Deviation
SRA	Staff-to-Resident Abuse
UK	United Kingdom
US	United States
WHO	World Health Organization

Key Concepts and Definitions

Nursing home	A facility with a domestic-style environment that provides 24-hour functional support and care for persons who require assistance with activities of daily living and who often have complex health needs and increased vulnerability
Resident	A person who lives, or *resides*, in a nursing home
Nursing staff	Healthcare staff working with the direct care of residents in nursing homes, including registered nurses, social educators, licensed practical nurses, and nursing assistants
Elder abuse	An intentional act or failure to act by a caregiver or another person in a relationship involving an expectation of trust that causes or creates a risk of harm to an older adult

1.0 Introduction

Elder abuse is recognized as a public health and human rights problem; the mistreatment of older adults has been associated with a range of adverse consequences for both the victims and their families, as well as negative outcomes for healthcare utilization and society in general (Krug et al., 2002). The World Health Organization's European Region has estimated that about 4 million persons aged 60 and older are exposed to abuse in any one year, and this number is expected to increase along with the rapidly aging population (Sethi et al., 2011).

The United Nations (2019) has projected that by 2050, one in six persons worldwide will be aged 65 or above, more persons will live with age-related chronic illnesses including dementia, and the demand for long-term care services will increase. At the same time, WHO (2016) has projected a shortfall of 18 million healthcare workers by 2030, where all countries, to varying degrees, will face challenges in education, employment, deployment, retention, and workforce performance. In Norway, several reports have already shown that the long-term care sector is experiencing a high workload and time constraints, as well as difficulties in the recruitment and retention of trained healthcare personnel; this combination of exponential growth in the aging population and an inadequate supply of trained personnel is dangerous and could lead to a deterioration of health services (Gautun, 2020; Gautun & Hermansen, 2011; Gautun et al., 2016).

Compared to the other fields of interpersonal violence, research on elder abuse is still in its infancy (WHO, 2014), particularly regarding nursing home residents, who tend to be frailer and more vulnerable to abuse than community-dwelling older adults (McDonald et al., 2012). In recent decades, several studies have attempted to measure the extent of elder abuse in institutional settings, but few have conducted national studies to ascertain the magnitude of the problem. This leads to the overall goal of the current thesis: to provide new knowledge on the extent, nature, and risk factors of elder abuse in nursing homes by conducting a national cross-sectional survey of nursing staff in Norwegian nursing homes. This study is one of the largest surveys worldwide examining the prevalence and risk factors of elder abuse in institutional settings, and the completion of this study is expected to establish a baseline of the magnitude of the problem so that appropriate interventions to prevent elder mistreatment can be developed, implemented, and evaluated.

The current study is part of the larger project "A Multi-Method Study on Abuse and Neglect of Older Patients in Norwegian Nursing Homes", initiated by the NTNU and funded by the Research Council of Norway. This project comprises three work packages: 1) a national survey on abuse of nursing home residents, 2) the role of leadership to promote patient safety in nursing homes, and 3) relatives' perceptions and experiences of abuse of nursing home residents. The current thesis covers the first work package.

The current thesis is structured into seven chapters. Chapter 2 is the background chapter that presents the aging population, the context of Norwegian nursing homes, and the prevalence, risk factors, and theoretical frameworks of elder abuse. Chapter 3 provides the rationale and overall goal of the current thesis and the specific aims of the individual papers. In Chapter 4, the material and methods are described. Chapter 5 presents a summary of the results, and Chapter 6 provides the interpretation of the primary results, along with methodological considerations. Finally, Chapter 7 presents the overall conclusion, theoretical and practical implications, and recommendations for future research. The submitted (Paper III) and published (Papers I and II) papers included in this thesis are attached as appendices. The article on abuse perpetrated by relatives is in progress, and only some prevalence rates are reported; it is nonetheless referred to as Paper IV in this thesis. Elder abuse in nursing homes is a large field, with many issues of concern. The current thesis primarily emphasizes the prevalence and risk factors of staff-to-resident abuse (SRA; Papers I and III), but the prevalence and risk factors of resident-to-resident aggression (RRA; Paper II) and relative-to-resident abuse (Paper IV, in progress) are also addressed.

Personal Motivation

During my career working as a nurse in the Sexual Assault Unit at St. Olav's hospital, I gained great knowledge in the field of child abuse and intimate partner violence. However, during my seven years as a nurse, the unit never received referrals of persons over age 60. In 2012, I began working as an assistant professor at the nursing school in Trondheim, where I met my supervisor, Dr. Malmedal, who introduced me to the field of elder abuse. I was surprised when I realized how underrecognized and underreported this field is compared to the other areas of violence. This inspired and motivated me to conduct this important work on a subject that has been neglected for so long. I feel privileged to have had the opportunity to conduct this national survey and to write these articles and this thesis; I hope that our findings will contribute to both a better understanding and increased attention to elder abuse in nursing homes, which could enhance the protection and safety of nursing home residents.

2.0 Background

2.1 The Aging Population

An aging population is the result of a decline in fertility rates and an increase in life expectancy; in recent decades, this demographic change has resulted in a rapidly increasing number of older persons, often defined as aged 60 or 65 and above (United Nations, 2019; WHO, 2015). In 2019, the worldwide number of older persons was 1 billion, projected to increase to 1.4 billion by 2030 and further to 2.1 billion by 2050 (WHO, 2019). In Norway, it has been predicted that the population aged 65 and older will increase from today's 940,000 to about 2 million by 2100, wherein the share of 80-year-olds will more than triple, and the number of 90- and 100-year-olds will increase almost fivefold (Syse et al., 2020).

Population aging is a human success story representing the triumph of public health, medical and technical advancements, and economic and social progressions over chronic illnesses, injuries, and early deaths, which have restricted life expectancy through history (United Nations, 2019). However, the changes that influence aging are neither linear nor consistent and are only loosely related to age in years; some 70-year-olds enjoy a healthy life, while others are frail and require extensive support to meet basic needs (WHO, 2015). Some of these variations are caused by genetics, but a large part arises from individuals' social and physical environments and their behaviors, which begin influencing the aging process at an early stage (WHO, 2015). Common conditions associated with aging include the loss of sensory functions, a decline in movement functions, a reduction in the immune response, and a deterioration in cognitive functions including dementia-related illnesses (WHO, 2015), and increasing age has been associated with experiencing multiple conditions simultaneously (Kingston et al., 2018).

Dementia is one of the greatest health challenges of our time, with extensive personal, social, and economic consequences (Prince et al., 2015). In 2015, dementia-related illnesses affected approximately 47 million people globally, a number projected to increase to 132 million by 2050 (Prince et al., 2015). In Norway, an estimated 101,000 persons live with dementia in 2020, projected to increase to 235,000 by 2050 (Gjøra et al., 2020). Compared to the older population in general, persons with dementia have an increased risk of multimorbidity, a faster functional decline, and a poorer quality of life (Livingston et al., 2020).

Kingston et al. (2018) have forecasted an increase in the number of older persons with complex care needs, where at a certain point in life, many will no longer be able to live at home. WHO's *Global strategy and action plan on aging and health* (2017) emphasizes that every country should have an integrated system of long-term care that ensures that older persons can maintain the best possible level of functional ability that allows them to live with dignity and enjoy their human rights and fundamental freedoms. To reach this goal, three key actions have been deemed necessary: a) establish and continually improve an equitable and sustainable long-term care sector, b) build the workforce and support informal caregivers, and c) ensure the quality of a person-centered and integrated long-term care (WHO, 2017).

2.2 Nursing Homes in Norway

A nursing home is "a facility with a domestic-styled environment that provides 24-hour functional support and care for persons who require assistance with ADLs [activities of daily living] and who often have complex health needs and increased vulnerability" (Sanford et al., 2015, p. 183).

The municipalities are responsible for primary healthcare services, including home care, assisted living facilities, and nursing homes (Sperre Saunes et al., 2020). All inhabitants have equal access to healthcare, regardless of social or economic status or geographical location; this has been a long-standing feature of the welfare system and is embedded in national documents and legislation (Sperre Saunes et al., 2020). As in most Western countries, a large Coordination Reform was implemented in 2012, with the impetus that healthcare services had become too fragmented and expensive. The Reform was implemented to ensure a more sustainable healthcare system by giving municipalities more responsibility for providing services closer to where people live and improving coordination and collaboration between municipalities and specialist services (Research Council of Norway, 2016).

Norway has a well-established system with formal arrangements for the aging population, wherein long-term care receives approximately 25% of total public spending on health (Sperre Saunes et al., 2020). Home care is fully publicly financed, but in nursing homes, residents must pay about 80% of their income to the institutions (Sperre Saunes et al., 2020). The Norwegian Health and Care Services Act (2011) outlines municipalities' and nursing homes' responsibilities to provide care, treatment, and rehabilitation, as well as municipal obligations to regulate access for people requiring institutional care (Sperre Saunes et al.,

2020). The Norwegian Board of Health Supervision is responsible for overseeing and monitoring that health services are provided according to national regulations and legislation (Meagher & Szebehely, 2013).

Approximately 5% of nursing homes are owned and operated by private voluntary organizations, and about 5% by commercial stakeholders, but all are equally obliged to follow the same national health legislation as publicly run nursing homes (Ågotnes, 2017). Most nursing homes are organized with a top leader and middle management, often occupied by registered nurses (RNs) with some form of continuing education and employed physicians (often part-time) who encompass the overall medical responsibility of the residents (Sperre Saunes et al., 2020). Nursing homes contain both long-term and various short-term care units, such as rehabilitation, respite stay, and palliative care (Ågotnes, 2017). An increasing number of municipalities have established units specifically designed for people with dementia suffering from severe neuropsychiatric symptoms (NPS), such as agitation and aggression; these units are licensed in the same manner as other nursing home units but possess fewer beds and a higher staff-to-resident-ratio (Norwegian Directorate of Health, 2018). However, in most nursing homes, cognitively impaired residents reside in the same units as persons without such impairments. The size of Norwegian nursing homes varies considerably; the mean size is 50 beds (Ågotnes, 2017), but the median is only 34 (Statistics Norway, 2017).

A Norwegian nursing home is both a home and a treatment institution, and since the 1950s, considerable change has occurred from the traditional *care home* or *retirement home,* with little medication attention, to *the period of treatment* (1950–1985) when *patients* in *nursing homes* received treatment (Hauge, 2004). From the 1980s, nursing homes were increasingly considered a place for permanent residence, emphasizing the need for institutions to be more home-like, as well as a place for treatment (Hauge, 2004). In 1997, the government presented the “Action Plan for Eldercare”, wherein some of the objectives were to reorganize municipal health services by restructuring nursing homes toward single occupancies and increase the construction and use of assisted living facilities (Næss et al., 2013). In 2017, almost 87% of all nursing home rooms were single occupancy with separate bathrooms (Sperre Saunes et al., 2020). The number of nursing home beds in Norway has slightly decreased, from approximately 42,000 in 1992 to just under 40,000 beds in 2017, which is due partly to the increased number of single-occupancy rooms (Sperre Saunes et al., 2020) but also to the increased use of assisted living facilities and home-based care services (Ågotnes, 2017). However, as dementia illnesses increase with age, and with the future projections of life

expectancy, there may be a need for approximately 40,000 nursing home beds in 2030, increasing to 70,000 beds in 2060 (Vossius et al., 2015).

2.2.1 Nursing Home Residents

A nursing home resident is a person who lives, or *resides*, in a nursing home (Forskrift for sykehjem m.v., 1988; Pirhonen & Pietila, 2015). The Coordination Reform of 2012 placed more responsibility on municipalities to ensure 24-hour care and treatment after hospital discharge, which led to a sicker and more complex group of older persons in nursing homes (Research Council of Norway, 2016; Sperre Saunes et al., 2020). Helvik et al. (2015) indicate that among residents with a long-term stay in Norwegian nursing homes, about 84% suffer from dementia. A longitudinal study of mortality reported a median survival rate of 2.2 years, with about one-third of nursing home residents dying every year (Vossius et al., 2018). The risk of mortality is associated with individual characteristics, such as higher age, comorbidity, more severe dementia, and higher dependency on ADLs, as well as on institutional factors, such as living in units with many residents (Vossius et al., 2018). The number of Norwegians above 80 years of age is expected to increase from 220,000 in 2018 to 700,000 in 2060, many of whom will require long-term care services (Leknes et al., 2018).

2.2.2 Nursing Home Staff

Within Norwegian nursing homes, the nursing staff (*pleieansatte)* on average consists of registered nurses (31%), licensed practical nurses (LPNs) (42.5%), social educators (2.5%), and nursing assistants with no formal health education (24%) (Norwegian Directorate of Health, 2017). The basic degree of RNs and social educators comprises three years or 180 ECTS points leading to a bachelor's degree and authorization to practice (Sperre Saunes et al., 2020). LPNs obtain a certificate upon completion of vocational training in upper secondary school, a system introduced in 2008, replacing the former auxiliary nurse and care worker education (Sperre Saunes et al., 2020). Nursing homes are obligated to have "professional and sufficient staffing" (Meagher & Szebehely, 2013), but no legal requirements exist for either staff-to-resident ratios or the qualifications of the healthcare workers (Sperre Saunes et al., 2020). Different requirements regulate how health personnel are expected to behave professionally, with the most important standard found in the Norwegian Health Personnel Act (§4), asserting that "health personnel shall conduct their work in accordance with the requirements of professional responsibility and diligent care that

can be expected based on their qualifications, the nature of their work and the situation in general." The Norwegian Board of Health and Supervision may provide several reactions to health professionals who breach this act, and in the worst case, the authorization may be revoked "if the holder is unfit to practice his profession in a responsible manner for reasons of severe mental illness, mental or physical impairment, prolonged absence from the profession, use of alcohol or narcotics or substances with a similar effect, a gross lack of professional insight, irresponsible conduct, gross breach of duty pursuant to this act … or due to behavior considered to be incompatible with professional conduct" (Norwegian health personnel act, 1999, § 57).

The Norwegian healthcare system has one of the highest densities of healthcare professionals in Europe; still, analysts predict an alarmingly high under-coverage of RNs and LPNs in the future (Gautun, 2020; Sperre Saunes et al., 2020). Causes have been related to nursing students' high education drop-out rates, as well as a high turnover rate in the primary healthcare sector in general (Gautun, 2020). Moreover, only a minority of newly educated nurses choose to work in nursing homes, and about half of nurses in nursing homes are considering a change of workplace (Gautun et al., 2016). Given this predicted shortage of healthcare personnel, the government has set out two action plans, "Competence Lift 2020" and "Competence Lift 2025," to increase recruitment and improve the competence and professional development of health personnel, especially in primary healthcare services (Sperre Saunes et al., 2020).

2.2.3 Quality of Care

Since 2013, the Norwegian government has presented an annual white paper on the quality of care and patient safety to the parliament, emphasizing the status and activities to improve care quality and safety (Sperre Saunes et al., 2020). The Norwegian Directorate of Health (2019) has the legislative responsibility to develop, disseminate, and maintain national quality indicators in the healthcare sector. This quality indicator system is based on the framework of the Organisation for Economic Co-operation and Development's (OECD) Health Care Quality Indicator Project, designed to provide equal access to high-quality care (Norwegian Directorate of Health, 2019). A quality indicator is an indirect measure that provides information on the quality of health services and is often classified according to which aspects are being measured (Norwegian Directorate of Health, 2019). Considerable attention has been given to improving the quality of care and patient safety in Norway, and

compared to other OECD countries, the sector scores high on most indicators (Sperre Saunes et al., 2020), suggesting that most residents in Norwegian nursing homes are adequately cared for in safe settings (Kirkevold & Engedal, 2006; Sperre Saunes et al., 2020). However, some national evidence suggests a darker side of the sector; in 2003, the Norwegian Board of Health Supervision reported that 10% of nursing home residents received insufficient help during meals, 15% received insufficient help with personal care and hygiene, and 60% were provided with insufficient activities and psychosocial care. Kirkevold and Engedal (2008) reported that more than half of nursing home residents experienced two or more quality deficiencies in their care during one week, and Malmedal et al. (2009a) reported that approximately nine out of ten nursing home staff had committed at least one act of inadequate care toward residents.

In 2010, the Ministry of Health and Care Services introduced the *dignity guarantee* for older persons, to ensure that healthcare services contribute to a dignified, safe, and meaningful older life (Verdighetsgarantiforskriften, 2010). Still, in 2014 and 2019, the Norwegian National Human Rights Institution published two thematic reports on human rights challenges in nursing homes, and both reports identified several areas failing to meet human rights obligations. In 2019, the Norwegian Directorate of Health launched the current action plan, "Patient Safety and Quality Improvements (2019–2023)," wherein the overall goals were to improve safety and quality in four areas: leadership and culture, staff competence, a national initiative for quality and safety, and systems and structures (Sperre Saunes et al., 2020).

2.3 Violence – A Global Public Health Problem

Violence has probably always been a part of human life, and its impact can be seen in various forms all over the world (Krug et al., 2002). WHO defines violence as "the intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community, that either result in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation" (Krug et al., 2002, p. 5), and it is generally divided into three categories: self-directed violence, interpersonal violence, and collective violence. Interpersonal violence is further divided into two subcategories: intimate partner or family violence, largely committed by family members, within the home, and community violence, referring to violence committed by unrelated individuals outside the home who may or may not know the victim (Krug et al., 2002). The former group includes

child abuse, intimate partner violence, and abuse of older persons living at home, and the latter group includes violence occurring in institutional settings, such as schools, workplaces, and nursing homes (Krug et al., 2002).

Violence affects millions of people every year (Krug et al., 2002). Recognizing the serious immediate and long-term implications for people's health, social, and psychological development, in 1996, the World Health Assembly declared violence to be a leading global public health problem, "noting with great concern the dramatic worldwide increase in the incidence of intentional injuries affecting people of all ages and both sexes" (World Health Assembly, 1996, p. 1). The World Health Assembly (1996) urged all state members to assess the phenomenon in their regions and requested that WHO's Director-General initiated and presented an action plan for improvement toward a science-based public health approach in the prevention of violence.

2.4 Elder Abuse

Interpersonal violence is a highly prevalent phenomenon, and for decades, tremendous strides have been made to advance the recognition and understanding of child abuse and intimate partner violence (Dong, 2017). However, not enough has been done to shed light on the mistreatment of older adults, particularly in institutional settings (Dong, 2017; Yon et al., 2019), where residents tend to be frailer and more vulnerable and thus at higher risk of being exposed to abuse (McDonald et al., 2012). Initial attention to the ill-treatment of older adults emerged during the 1970s, when scientific medical articles concerning the physical abuse of older women, labeled as *granny bashing* and *granny battering,* were published (Krug et al., 2002). This recognition first occurred in the United Kingdom (UK), but in succeeding years, research and legislative forces were concentrated in the United States (US), Canada, and some European countries (Lachs & Pillemer, 2004). The US Congress was the first federal government to seize the problem in a congressional hearing; in 1981, Congress proposed legislation to create a National Center on Elder Abuse, which was funded and established in 1989 (Bonnie & Wallace, 2003). Since then, political actions and research have been reported from developed countries all over the world (dos Santos et al., 2020; WHO, 2014), and more recently in low- to middle-income countries (Alexa et al., 2020; Chalise & Paudel, 2020; Chokkanathan, 2018; Kotze, 2018).

Research on elder abuse is divided primarily between studies on the mistreatment of older adults in community settings and residents in institutional settings. Several studies have investigated the prevalence and risk factors of elder abuse in community settings; a recent systematic review and meta-analysis included 52 studies from 28 countries and calculated a pooled prevalence rate for overall elder abuse to be 15.7% (95% confidence interval [CI], 12.8–19.3), 11.6% (95% CI, 8.1–16.3) for psychological abuse, 6.8% (95% CI, 5.0–9.2) for financial abuse, 4.2% (95% CI, 2.1–8.1) for neglect, 2.6% (95% CI, 1.6–4.4) for physical abuse, and 0.9% (95% CI, 0.6–1.4) for sexual abuse (Yon et al., 2017).

Elder abuse has been associated with a range of negative health consequences, from minor injuries to lasting physical disabilities, long-term psychological problems, suicide attempts, and increased risk of hospitalization, institutionalization, and premature death (Baker et al., 2009; Dong & Simon, 2013a, 2013b, 2013c; Olofsson et al., 2012; Yunus et al., 2019). Indeed, mortality rates among victims of elder abuse are three times higher compared to non-victims (Lachs et al., 1998). Moreover, elder abuse has been related to societal consequences such as the costs of emergency medical care, hospitalization, and expenses linked to the prosecution, punishment, and rehabilitation of perpetrators (Butchart et al., 2008; Dong & Simon, 2013a, 2013b, 2013c).

2.4.1 Elder Abuse in Norway

In 2017, the first national study on the prevalence of elder abuse toward community-dwelling adults was conducted; the annual prevalence was estimated to be between 6.8% and 9.2% (Sandmoe et al., 2017). The current thesis provides results from the first national study on the prevalence of elder abuse in nursing homes; thus, initiatives to prevent elder abuse in Norway have been driven without national data, although some efforts have been made.

Elder abuse in Norway first gained attention in the 1980s, when Stang (1982) published a scientific medical article questioning whether older persons in Norway could be subjected to abuse, but this was met with skepticism, and the general attitude was that elder abuse only occurred in the US, not in the Norwegian welfare society (Hjemdal & Juklestad, 2006). The first small studies on the prevalence of elder abuse in Norway were conducted in the mid-1980s when home care staff reported that 1–3% of older adults in community settings had been exposed to abuse by their relatives or others (Hjemdal & Juklestad, 2006). In 1986, the Norwegian Ministry of Health and Social Affairs issued a pamphlet on elder abuse, in which they proposed that all municipalities implemented a reporting system and an interdisciplinary

team dedicated to the area. In the same year, the "First Nordic Seminar on Elder Abuse" was arranged, wherein practitioners from Norway and Finland were the most prominent (Podnieks et al., 2010). Since then, the Norwegian Ministry of Health and Social Affairs has funded several projects to enhance professional coping and improve intervention to identify and prevent elder abuse; Protective Services for the Elderly (*Vern for eldre*) is among these government-funded projects (Juklestad & Johns, 1997). This included a telephone helpline at the local level to guide victims, healthcare professionals, and others in cases of or suspicions of elder abuse; by 2008, this helpline service was established nationally.

This seminal work of elder abuse in Norway did not, however, focus on the mistreatment of older persons in institutional care settings until Malmedal (1999) conducted a qualitative study of nursing home staff, revealing that older residents in need of care were exposed to abuse and that their rights to self-determination and dignity were deprived. Juklestad (2001) further highlighted the complex situations leading to abuse in nursing homes and illustrated circumstances of residents in need of care suffering from dementia, anxiety, and aggressive behaviors, with poorly paid nursing home staff, who "would have chosen another profession had they been able to" (p. 36). Malmedal et al. (2009a) published an article on the inadequate care of residents in nursing homes, where 616 nursing staff from 16 nursing homes in one Norwegian county participated; nursing staff admitted to having neglected oral care (64%), delayed care longer than necessary (55%), restrained/held back resident(s) (33%), used diapers to prevent toilet visits (20%), given more medication than needed (9%), and threatened resident(s) with punishment (4%). Risk factors were found to be the staff's older age, higher education, and job dissatisfaction, conflicts between staff and residents, resident aggression directed toward staff, smaller nursing homes, and institutions being located in rural areas (Malmedal et al., 2014). Since 2000, the Norwegian government has presented four action plans to address domestic violence, but the plans contain few measures specifically aimed at older adults. Some important initiatives have, however, occurred to prevent elder abuse in Norway, including the government-funded Norwegian Centre for Violence and Traumatic Stress Studies and the Regional Centre for Violence, Traumatic Stress and Suicide Prevention (Saur et al., 2011).

2.4.2 Elder Abuse in Institutional Settings

In the literature on elder abuse, institutional settings are often referred to as residential (care) facilities, long-term care facilities, or nursing homes. According to Penhale (2014), an

institution specifically related to residential nursing care is described as "care provided within a home which is not owned by the individual and where the locus of control lies beyond the individual living in that environment" (p. 1855). Essential to this definition is that older individuals live with others with whom they have not chosen to live and that the control of the organization and structure of the home are not within their power (Penhale, 2014). Elder abuse in institutions refers to any form of abuse occurring in settings where care, treatment, and assistance are provided to dependent older persons (Penhale, 2014). All individuals residing in institutions may be at risk of experiencing abuse or abusive regimes, and while some abusive events may be isolated, the mistreatment often arises through the organizational culture that develops and functions within these institutions (Penhale, 2014). The abuse may be committed by formal caregivers, fellow residents, relatives, volunteers, or other visitors; it may be a continuation of a pre-existing abusive situation, for example, by a relative; or it may occur for the first time in the institution (Penhale, 2014).

In recent years, progress has been made in measuring the extent of elder abuse perpetrated by staff in nursing homes, but research on many aspects, including the evidence of causes and predictors, is still limited (Kamavarapu et al., 2017). Research on aggressive incidents occurring between residents is even more limited (Hirst et al., 2015), which is surprising, considering that agitation and aggression related to dementia have been extensively reported within nursing homes for many decades (Jutkowitz et al., 2016), and even more serious injuries and deaths have been related to such incidents than to staff abuse (Caspi, 2018; DeBois et al., 2019; Murphy et al., 2017). Concerning resident abuse committed by relatives, visitors, or others in long-term care, only a handful of studies have addressed this issue, even though the prevalence of interpersonal abuse in community settings is high.

2.4.3 Terms and Definitions

Elder abuse terminology has changed considerably in recent decades, from the initial *granny battering* and *granny bashing* to *battered elder syndrome*, *old age abuse*, *elder mistreatment*, and the most widely used *elder abuse* (Mysyuk et al., 2013). The latter term has been criticized, with researchers arguing that the real focus should be on the abusive act, regardless of age (Mysyuk et al., 2013). Criticism has also been directed toward *gender neutrality* since the literature has shown that many persons affected by elder abuse are women (Penhale, 2003). A better understanding of risk factors related to gender can enhance the development of preventive responses (Jeon et al., 2019).

For decades, definitions of elder abuse have been debated contentiously, while some aspects, such as environmental setting (home or institution) and the five subtypes of abuse (physical, psychological, financial/material, sexual, and neglect) have been most commonly agreed upon (Hall et al., 2016). However, the field lacks an overarching definition or standardization of which acts are judged to be abusive and under which subtype they belong (Saghafi et al., 2019; van Bavel et al., 2010). Another concern has been on the interpretation of *self-neglect* as a type of elder abuse. Self-neglect is considered a person's inability or unwillingness to manage own hygiene or health issues, and this is a commonly reported issue found associated with increased morbidity and mortality, but it is often excluded from elder abuse definitions (Mosqueda & Dong, 2011). Finally, most definitions of elder abuse are established in developed countries (dos Santos et al., 2020) and may not be appropriate to capture the specific forms of elder abuse occurring in other cultures and developing countries (Kotze, 2018; Yan et al., 2015).

One of the most used definitions was developed by Action on Elder Abuse (1995) in the UK and later adopted by the International Network for the Prevention of Elder Abuse and WHO (Krug et al., 2002, p. 126), defining elder abuse as "a single, or repeated act, or lack of appropriate action, occurring within any relationship where there is an expectation of trust which causes harm or distress to an older person." Definitions are, however, in constant flux, and in 2016, the Centers for Disease Control and Prevention (CDC) and a group of elder abuse experts reviewed existing definitions and proposed a new uniform definition and core data elements to standardize elder abuse (Hall et al., 2016). The current study draws on this definition, considering elder abuse or mistreatment "an intentional act or failure to act by a caregiver or another person in a relationship involving an expectation of trust that causes or creates a risk of harm to an older adult" (Hall et al., 2016, p. 28). Several aspects are central to this definition. *Intentional* limits elder abuse to acts done deliberately, purposefully, and consciously by another person, but the definition also acknowledges that harm may be an unintentional *failure to act* (Hall et al., 2016). The *expectation of trust* is based on a belief that a caregiver, relative, or another person with whom a legally defined relationship exists should be relied upon to protect the interests of and/or provide care for an older person; this expectation of trust does not extend to estranged relatives or casual acquaintances (Hall et al., 2016). This distinction is crucial since risk factors and appropriate interventions vary between different perpetrators (Storey, 2020). Unlike in WHO's definition, the *risk* component is included, which considers the possibility that an older adult may experience an illness,

condition, disorder, disease, injury, or another outcome that is adverse, undesirable, or detrimental (Hall et al., 2016). *Harm* includes instant or delayed disruptions to an older adult's cognitive, physical, psychological, financial, or social health (Hall et al., 2016).

The CDC considers an *older adult* any person who is chronologically 60 years or older, due to the eligibility for amenities furnished under the Older American's Act (Hall et al., 2016). Defining old age may, however, be challenging, considering that chronological age may not always be a sufficient measure for the process of aging and that younger persons with age-related diseases may be excluded (Mysyuk et al., 2013). In most Western countries, an older adult is considered 65 years or older, which is often the entitlement age for social pension benefits (Krug et al., 2002). In this study, age was not an issue of concern, because the average age of Norwegian nursing home residents is above 80 years (Helvik et al., 2015). Table 1 presents the subtypes, operationalizations, and manifestations of elder abuse as defined by the CDC.

Table 1. Subtypes, Operationalizations, and Manifestations of Elder Abuse (Hall et al., 2016)

Subtypes	Operationalizations	Manifestations
Psychological abuse	Verbal or nonverbal behavior that results in the infliction of anguish, mental pain, fear, or distress	May include but is not limited to humiliation/disrespect, threats, harassment, and isolation/coercive control
Physical abuse	Intentional use of physical force that results in acute or chronic illness, bodily injury, physical pain, functional impairment, distress, or death	May include but is not limited to such acts of violence as striking (with or without an object or weapon), hitting, beating, scratching, biting, choking, pushing, shaking, slapping, kicking, pinching, burning, inappropriate use of medications and physical restraints
Financial/ material abuse	Illegal, unauthorized, or improper use of an older individual's resources	May include but is not limited to depriving an older individual of rightful access to, information about, or use of personal benefits, resources, belongings, or assets
Sexual abuse	Forced and/or unwanted sexual interaction (touching and non-touching acts) of any kind with an older adult	May include but is not limited to forced and/or unwanted completed or attempted penetration, however slight; forced and/or unwanted penetration of the anal or genital opening of another person by a hand, finger, or another object; forced and/or unwanted intentional touching; unwarranted, intrusive, and/or painful procedures in caring for genitals or rectal area; or forced and/or unwanted non-contact acts of a sexual nature such as forcing a victim to view pornographic materials, and verbal or behavioral sexual harassment
Neglect	Failure to protect from harm or to meet needs for essential basic care results in serious risk of compromised health and/or safety, relative to age, the status of health, and cultural norms	May include but is not limited to essential medical care, nutrition, hydration, hygiene, clothing, basic activities of daily living, or shelter

Resident-to-resident Aggression

RRA is a prevalent phenomenon (Burnes, Syed, et al., 2020); however, it does not fully fit into the distinctive definition of elder abuse. Dementia is a progressive degenerative brain disease that is often accompanied by NPS, such as depression, agitation, psychotic symptoms, and apathy (Livingston et al., 2020). Aggressive behaviors are often the result of this condition, where the individual may not be responsible for an ostensibly unprovoked act and both parts in such incidents may suffer from harm and injuries (McDonald, Sheppard, et al., 2015). Also, the conceptualization of elder abuse embraces a *relationship of trust* that may or may not be relevant in the resident-to-resident dyad (McDonald, Sheppard, et al., 2015). Elder abuse researchers tend to use different terms for residents perpetrating aggressive behaviors toward fellow residents, including *exhibitors* (Caspi, 2018; DeBois et al., 2019), *perpetrators* (Lachs et al., 2016), *initiators* (McDonald, Sheppard, et al., 2015), and *aggressors* (Shinoda-Tagawa et al., 2004). Prior research has also used a variety of terms to describe these incidents, including *resident-to-resident abuse* (Castle, 2012b; McDonald, Sheppard, et al., 2015; Schiamberg et al., 2015; Zhang et al., 2012), *resident-to-resident (elder) mistreatment* (Ellis et al., 2019; Lachs et al., 2007; Lachs et al., 2016; Rosen et al., 2016; Teresi et al., 2013; Teresi et al., 2018), *resident-to-resident relational aggression* (Trompetter et al., 2011), *resident-to-resident violence* (Shinoda-Tagawa et al., 2004; Sifford-Snellgrove et al., 2012; Snellgrove et al., 2015), and *resident-to-resident (physical) aggression* (DeBois et al., 2019; Ferrah et al., 2015; Murphy et al., 2017; Pillemer et al., 2012; Rosen, Lachs, et al., 2008; Rosen, Pillemer, et al., 2008). In 2015, a consensus-building workshop with an expert panel of researchers and practitioners reached an agreement regarding RRA, defining it as *"*negative, aggressive and intrusive verbal, physical, sexual, and material interactions between long-term care residents that in a community setting would likely be unwelcome and potentially cause physical or psychological distress or harm to the recipient" (McDonald, Hitzig, et al., 2015).

Despite the inconsistency in how this phenomenon is labeled and defined, aggression between residents may produce severe consequences identical to those resulting from abuse by staff or others, and it is often the outcome when nursing homes fail to prevent or manage aggression (Hall et al., 2016). Norwegian nursing homes are obligated to provide all residents with a safe environment; in nursing homes where incidents of RRA occur, this safety has been compromised (Hall et al., 2016). Therefore, in the current thesis, RRA is considered a type of elder abuse, but residents displaying aggressive acts toward fellow residents are

referred to as *aggressors,* to avoid defining them as "intentional abusers" (McDonald, Sheppard, et al., 2015). The terms *elder abuse* and *elder mistreatment* are used to embrace all subtypes of abuse by caregivers: physical, psychological, financial/material, sexual, and neglect. Residents who experience abuse are referred to as *victims,* and nursing staff and relatives who inflict or cause victims to experience abuse are referred to as *perpetrators.* The term *relative* (*pårørende*) refers to residents' family members, next of kin, or others who may serve as guardians. To distinguish between the various types of abuse with different perpetrators; *staff-to-resident abuse* is used to describe nursing staff perpetrating abusive acts (psychological, physical, financial/material, sexual, neglect); this term has been used in previous elder abuse research (Daly, 2017; Lachs et al., 2007; Phelan, 2020), *resident-to-resident aggression* is used to describe acts of aggression (verbal, physical, material, sexual) between residents, and *relative-to-resident abuse* (no abbreviation) is used to describe relatives perpetrating abuse (psychological, physical, financial/material, sexual) toward nursing home residents.

2.4.4 Reviewing the Literature

To obtain an overview of existing studies measuring the prevalence and risk factors of elder abuse in nursing homes, and to identify the staff survey instruments used to measure the prevalence of abuse, a comprehensive literature search was conducted in May 2017, with alert services set up for new records (Malmedal et al., 2020). The search strategy included six databases (Medline, Cinahl, Cochrane Library, Embase, PsycINFO, and SveMed+) and included no specific timeframe of records. The search was based on a combination of keywords and MeSH terms; the following terms were used, combined with adequate Boolean operators: *older persons, older adults, residents, patients, seniors, elders/elderly, aged, nursing homes, long-term care facilities, residential care settings, residential care institutions, residential aged care facility, residential facilities, care homes, nursing residence, homes for the aged, neglect, violence, aggression, mistreatment, maltreatment, inadequate care, ill-treatment, restraints, coercion, duress, abuse, physical abuse, physical aggression, psychological abuse, material/financial abuse, material/financial exploitation, sexual abuse, sexual aggression, patient abuse, verbal abuse, verbal aggression, emotional abuse, elder abuse, elder mistreatment, elder maltreatment, prevalence, incidence, occurrence, screening, frequency*, and *correlation* (Malmedal et al., 2020). A secondary, manual search of selected journals was also conducted, and references cited in the included

articles and previous literature reviews were screened. This comprehensive literature search resulted in a review article describing various staff survey instruments used to measure SRA in residential care settings (Malmedal et al., 2020). In addition, other searches with combinations of the following terms were conducted: *resident-to-resident aggression, resident-to-resident violence, resident-to-resident maltreatment, resident-to-resident mistreatment, resident-to-resident abuse, relative-to-resident abuse, family-to-resident abuse, resident/patient aggression, resident/patient agitation, prevalence, incidence, occurrence, frequency, correlation, risk factors, predictors*, and *associations*, along with secondary, manual searches and the screening of reference lists.

This literature search revealed several scoping, rapid, synthesis, and systematic reviews examining the prevalence and risk factors of elder abuse in both community and institutional settings (Cooper et al., 2008; Daly et al., 2011; Ramsey-Klawsnik, 2017; Storey, 2020; Wang et al., 2015; Yan et al., 2015), and explicitly in long-term care settings (Castle et al., 2015; Ferrah et al., 2015; Kamavarapu et al., 2017; Lindbloom et al., 2007; Malmedal et al., 2015; McDonald et al., 2012; McDonald, Sheppard, et al., 2015; Mogaka et al., 2020; Reader & Gillespie, 2013; Rosen et al., 2010; Smith et al., 2018).

Within the original studies identified, the greatest effort has been made on the prevalence and risk factors of SRA; only a small proportion of studies have estimated the prevalence of RRA, and no studies have explicitly examined the prevalence of relative-to-resident abuse in nursing homes. The identified studies on SRA revealed a wide range of prevalence estimates, depending on the perspective from which the abuse was measured and understood; the differing definitions, operationalizations, and data collection methods used; and variations in the reference periods set to measure the abuse. Given these substantial differences, the prevalence estimates of SRA and the design of the studies are outlined in Table 2, and an overall presentation is given in the text. The presentation of studies is extensive but not exhaustive. In 2017 and 2019, two systematic reviews and meta-analyses calculated the pooled prevalence estimates of SRA in institutional settings (Ho et al., 2017; Yon et al., 2019); these pooled prevalence estimates are presented in the text. The few identified studies and prevalence estimates concerning RRA and relative-to-resident abuse are also presented in the text.

2.4.5 Prevalence of Elder Abuse in Nursing Homes

Staff-to-resident Abuse

One of the first studies on the prevalence of SRA was conducted in the US by Pillemer and Moore (1989), who performed a random sample survey of nursing staff and identified that a substantial proportion of nursing staff had observed coworkers commit abuse and also admitted to themselves perpetrating acts of physical and psychological character toward nursing home residents. Since this seminal work on elder abuse in institutional settings, several studies have attempted to estimate the prevalence of SRA with self-reported surveys by nursing staff, secondary analyses of existing registers/records, and interviews/surveys of nursing home managers/directors, residents, and family members. Most studies have been conducted in the US, but also Sweden, Germany, Norway, Israel, Czechia, Ireland, Croatia, Switzerland, Canada, Slovenia, and the UK.

When self-reported surveys of nursing staff have been used, most researchers have developed study-specific survey instruments to measure the prevalence of abuse (Malmedal et al., 2020), and in these surveys, overall prevalence estimates have ranged widely, from 11% to 91% on observed abuse and 2% to 87% on perpetrated abuse. Surveys have also varied widely according to sample size (49–4,599 respondents), response rates (15–85.5%), reference periods (from the most recent shifts to the entire work career), how SRA was identified (observed/perpetrated), and how prevalence rates were reported (on each item, subtypes, and/or the overall rate). Studies using other data collection methods also report a wide range of estimates, depending on the study subjects and data collection methods.

In 2017, the first systematic review and meta-analysis of the global prevalence of elder abuse in both community and institutional settings was conducted (Ho et al., 2017). This meta-analysis included 34 population-based and 17 non-population-based studies and estimated a pooled prevalence of 10% (CI 95%, 5.2–18.6) when abuse was reported by older adults themselves, and 34.3% (CI 95%, 22.9–47.8) when reported by caregivers or third parties (Ho et al., 2017). In 2018, another systematic review and meta-analysis on the prevalence of elder abuse in institutional settings was conducted (Yon et al., 2019), which included institutional-based samples (above 60 years of age) that provided estimates of SRA at the national or sub-national level and excluded qualitative studies, studies on physical restraints, and studies with no prevalence data. Out of the 55 articles identified for full-text review, nine studies reported an annual prevalence of elder abuse and were selected for meta-analysis (Yon et al., 2019). Among these, three studies examined the prevalence as reported by the older adults (Cohen et

al., 2010; Habjanic & Lahe, 2012) or by relatives as proxies (Griffore et al., 2009), one study reported prevalence rates reported from both residents and nursing staff (Buzgova & Ivanova, 2011), and five studies examined the prevalence of abuse through self-reports by nursing home staff in Germany (Goergen, 2001, 2004), Ireland (Drennan et al., 2012), Israel (Natan et al., 2010), and, in the seminal work by Pillemer and Moore (1989), the US. Based on self-reports by nursing staff, the meta-analysis calculated a pooled prevalence rate of 64.2% (CI 95%, 53.3–73.9), indicating that two-thirds of staff in nursing homes admitted perpetrating at least one incident of elder abuse in one year. Concerning the studies of older adults and their proxies, the meta-analysis did not include enough data to calculate the overall estimate of elder abuse (Yon et al., 2019).

Psychological abuse is one of the most reported types of elder abuse in nursing homes; however, prevalence rates may be highly underestimated due to the subtle nature and lack of physical evidence (Wang, 2005). Moreover, researchers disagree on whether acts of a verbal nature should be considered psychological abuse (Drennan et al., 2012; Hall et al., 2016) or a unique subtype (Castle, 2012a; Castle, 2013). In addition, a minor number of researchers tend to use a threshold criterion of ten or more incidents to determine psychological abuse, as these acts are considered less severe than the other subtypes of abuse (Drennan et al., 2012; Pillemer & Moore, 1989). However, in nursing home settings, where the power imbalance is significant, as are the vulnerabilities of residents, most researchers determine that single incidents of psychological abuse are considered elder abuse. Although acts of a verbal or psychological nature have been considered less severe compared to, for example, sexual and physical abuse, psychological abuse may cause serious and direct effects or delayed effects either short- or long-term in nature (Hall et al., 2016). In the meta-analysis by Yon et al. (2019), the pooled prevalence of staff-reported abuse was 32.5% (CI 95%, 16.1–54.6), and 33.4% (CI 95%, 6.3–78.9) when reported by residents/relatives. A wide range of estimates have been provided for the specific items of psychological abuse, but the most frequently reported acts are yelling/shouting, insulting/swearing, and/or intimidating older adults receiving long-term care (Castle, 2012a; Drennan et al., 2012; Pillemer & Moore, 1989).

Physical abuse is the subtype and manifestation most often agreed upon, both in terms of which acts are classified as *wrong* and what constitutes physical abuse: intent to harm or inflict pain (Hawes, 2003). In general, physical abuse includes bodily manifestations, such as slapping, hitting, kicking, pulling hair, and throwing things at residents, and the signs may include bruises, hematomas, lacerations, scratches, black eyes, punctures, or hair loss (van

Bavel et al., 2010). These are all easy to recognize forensic markers, but many are attributed to an older person's normal aging process, and detection may go underreported (van Bavel, et al., 2010). Acts of physical abuse may also include the improper use of medications by staff, including the use of medication as chemical restraints (Hall et al., 2016). Physical restraints may also be considered physical abuse, but this only includes situations where there is an inappropriate use of restraints, not when the practice has been medically authorized for a legitimate purpose (Hall et al., 2016). In the meta-analysis by Yon et al. (2019), the pooled prevalence of physical abuse was 9.3% (CI 95%, 4.4–18.4) when reported by staff, and 14.1% (CI 95% 1.9–58.3) when reported by residents/relatives.

Financial/material abuse is one of the fastest-growing threats to older adults, and about 5% of older adults in the US have been taken advantage of financially by an informal caregiver or nursing staff member; financial abuse itself costs older Americans about 2.6 billion dollars each year (Hall et al., 2016). As a broad typology, Burnes et al. (2017) divide financial abuse into two categories: elder financial abuse perpetrated by persons in a trust relationship, and elder financial fraud or scams perpetrated by a stranger or someone else outside this trusting relationship. To date, most evidence is gathered on elder financial abuse among community-dwelling adults (Jackson, 2018). In the meta-analysis by Yon et al. (2019), there was an insufficient number of studies to calculate a pooled prevalence estimate as reported by staff, but the pooled estimate was 13.8% (CI 95% 0.7–78.3) when reported by residents/relatives. The most reported acts of financial abuse in nursing homes include stealing possessions or money, as well as the denial of residents to spend their own money and the destruction of things that belong to them (Castle, 2012a; Drennan et al., 2012; Habjanic & Lahe, 2012).

Sexual abuse is considered the most hidden and least acknowledged subtype of elder abuse, and despite the increasing attention to elder abuse in nursing homes, sexual abuse is still sparsely explored and the most underreported of all subtypes (Teaster et al., 2015). Ramsey-Klawsnik (2004) divides sexual abuse into two broad categories that include hands-on and hands-off offenses. Hands-off offenses include sexual comments, voyeuristic activity, and exhibitionism, while hands-on offenses include unwelcome touching and kissing, intrusive or harmful procedures when providing genital or rectal care, oral–genital contact, and rape. Considering these physical manifestations, some researchers include acts of a sexual nature as physical abuse when this is measured in long-term care settings (Schiamberg et al., 2012). In the meta-analysis by Yon et al. (2019), the pooled prevalence estimates as reported by staff

were 0.7% (CI 95%, 0.04–11.7), and 1.9% (CI 95%, 0.03–59.2) when reported by the residents/relatives.

Neglect is often divided into intentional or unintentional neglect, where unintentional acts refer to inadvertent actions resulting in harm due to ignorance, inexperience, or lack of caregiver ability/desire to provide adequate care (Strasser & Fulmer, 2007). Intentional neglect refers to acts perpetrated with maliciousness or for personal gain (e.g., monetary benefit; Strasser & Fulmer, 2007). Thus, acts perpetrated intentionally or unintentionally may produce indistinguishable harms or injuries, but the approaches required to prevent these intentions differ greatly (Hall et al., 2016). Moreover, neglect may be divided into physical and psychological forms, where physical manifestations include malnutrition, poor personal hygiene, unclean clothes, inadequate heating, lack of dentures, hearing aids and eyeglasses, and exposure to danger (Strasser & Fulmer, 2007), while psychological neglect refers to acts such as isolating residents for longer periods or reducing social interactions (Strasser & Fulmer, 2007). The meta-analysis by Yon et al. (2018) reported a pooled estimate of 12.0% (CI 95%, 2.6–41.4) when reported by staff, and 11.6% (CI 95%, 0.4–81.8) when reported by residents/relatives.

Neglect in nursing homes is, however, a complex construct that is commonly reported yet little understood (Strasser & Fulmer, 2007). Nursing staff conceptualizes neglect differently, and acts of neglect are often associated with the rationing of care, labeled as *missed care, rushed care,* and *inadequate care* (Malmedal et al., 2009a, 2014; Song et al., 2020). Reader and Gillespie (2013) conducted a systematic review of patient neglect in healthcare institutions and identified two broad aspects: *procedure neglect*, referring to failures by staff to achieve objective care standards, and *caring neglect*, referring to behaviors that led residents and others to believe the nursing staff did not care. The review also found that patients and relatives more often reported acts of neglect than did nursing staff, and nurses more likely reported neglectful acts committed by other staff than acts perpetrated by themselves (Reader & Gillespie, 2013).

Table 2. Prevalence of SRA in Nursing Homes

Author(s) (Year) - Country	Study design (Response rate, if reported)	Prevalence			
Staff surveys					
Song et al. (2020) – Canada	A cross-sectional survey of a random sample of 4,016 care aides (74%) in 93 urban nursing homes	**Perpetrated (in the most recent shifts):** • Missed care: 57.4% • Rushed care: 65.4%			
Moore (2017) – UK	A questionnaire pen and paper survey of 156 nursing and care staff (75.4%) in five convenient sampled independent-sector nursing homes	**Witnessed/suspected (past year, 1–3 years, > 3 years):** • Psychological: 47.6% • Physical: 20% • Financial: one respondent • Sexual: 0% • Neglect: 31.9% • Overall: 88.5%		• Witnessed repeated acts: 90.8% • Witnessed isolated abuse: 16.5% • Witnessed abuse past year: 69.0% • Witnessed abuse 1-3 years ago: 28.6% • Witnessed abuse > 3 years ago: 2.4%	
Blumenfeld Arens et al. (2017) – Switzerland	A cross-sectional survey of 4,599 care workers in 156 randomly selected nursing homes	**Observed (past 4 weeks):** • Emotional: 50.8% • Physical: 1.4% • Neglect: 23.7%			
Neuberg et al. (2017) – Croatia	A cross-sectional survey of 171 nursing professionals (85.5%) from four nursing homes and two extended care units at the hospital	**Most observed acts (past year):** shouting (55%), insulting/swearing (43%), force-feeding (42%), ignoring (39%), neglecting to turn or move a resident to prevent pressure sores (38%)			
Drennan et al. (2012) – Ireland	A national cross-sectional pen and paper survey of 1,316 RNs and assistants (43%) from 64 randomly selected nursing homes	**Observed (past year):** • Psychological: 26.9% • Physical: 11.7% • Financial/material: 1.2% • Sexual: 0.7% • Neglect: 57.6%		**Perpetrated (past year):** • Psychological: 7.5% • Physical: 3.2% • Financial/material: 0.7% • Sexual: 0.2% • Neglect: 27.4%	
Castle (2012a) – US	A cross-sectional survey of 4,451 nurse aides (64%) working in nursing homes and registered in the Pennsylvania nurse aide registry	**Most observed acts (past 3 months):** argumentative with residents (36%), humiliating (29%), intimidation (28%), yelling (27%), threatening remarks (26%), aggressive behavior (20%), inappropriately delayed giving medication (19%)			
Buzgova & Ivanova (2011) – Czechia	A quantitative pen and paper survey of 454 direct care employees (64%) and 488 clients from 12 randomly selected residential homes for older persons	**Staff observed (past year):** • Psychological: no report • Physical: 30% • Sexual: 0.7% • Neglect: 9% • Overall: 65%	**Staff perpetrated:** • Psychological: 46% • Physical: 12% • Sexual: 0.7% • Neglect: 1% • Overall: 54%	**Client observed (past year):** • Psychological: 4% • Physical: <1% • Sexual: unmentioned • Neglect: unmentioned • Overall: 5%	**Client experienced:** • Psychological: 10% • Physical: <2% • Sexual: unmentioned • Neglect: unmentioned • Overall: 11%
Natan et al. (2010) – Israel	A quantitative survey of 510 healthcare staff (85%) from 24 randomly sampled long-term facilities for older persons	**Perpetrated (past year):** • Mental abuse: 23% • Physical abuse: 12% • Financial and sexual: 0.1%		• Mental neglect: 30% • Physical neglect: 34% • Overall: 54%	
Malmedal et al. (2009a) – Norway	A cross-sectional pen and paper survey of 616 nursing staff (79%) from 16 nursing homes in one county in the middle of Norway	**Observed (entire work career):** 91% **Perpetrated (entire work career):** 87% **Most perpetrated acts:** entering a room without knocking (69%), neglected oral care (64%), delayed care longer than necessary (55%), ignored a resident (44%), restrained/held back a resident (33%), did not change diapers when needed (21%)			
McCool et al. (2009) – US	A mailed questionnaire survey of 49 nursing staff (15%) from two nursing homes	**Suspected (in the current facility):** • Overall: 53%			
Wang (2005) – Taiwan	A cross-sectional survey of 114 caregivers from several long-term elderly care facilities located in southern Taiwan	**Observed (past 6 months):** • Psychological: 16.1%			

Goergen (2004) – Germany	A questionnaire survey of 361 professional caregivers (36%) from 27 nursing homes in a metropolitan area	**Observed (past year):** • Psychological: 61.8% • Physical: 34.9% • Sexual: 1.1% • Neglect: 59.6% • Psychosocial neglect: 34.1% • Mechanical restraints: 39.3% • Chemical restraints: 12.5% • Overall: 71.2%	**Perpetrated (past year):** • Psychological: 53.7% • Physical: 23.5% • Sexual: 0% • Neglect: 53.7% • Psychosocial neglect: 29.6% • Mechanical restraints: 28.3% • Chemical restraints: 5.5% • Overall 71.5%
Goergen (2001) – Germany	A mailed questionnaire survey of 80 nursing staff (20.4%) from nine convenience sampled nursing homes	**Observed (past year):** • Psychological: 59% • Physical: 23% • Overall: 66%	**Perpetrated (past year):** • Psychological: 68% • Physical: 6% • Overall: 79%
Harris & Benson (1999) – US	A national survey of 1,116 nursing staff (22%) from 47 randomly selected nursing homes	**Observed (past year):** • Financial: 6%	**Perpetrated (past year):** • Financial: 1.53%
	Survey of 417 family members in the same nursing homes	47% had noticed relatives' possessions missing the past year, where 18.7% believed possessions were taken by an employee	
Saveman et al. (1999) – Sweden	A quantitative survey of 499 nursing staff (78%) working in residential settings in one Swedish area	**Observed (past year):** • Psychological: 71% • Physical: 74% • Financial: 25% • Sexual: 2% • Neglect: 56% • Overall: 11%	**Perpetrated (past year):** • Overall: 2%
Pillemer & Moore (1989) – US	A telephone survey of 577 nursing staff (85%) from 31 nursing homes	**Observed (past year):** • Psychological: 81% • Physical: 36%	**Perpetrated (past year):** • Psychological: 40% • Physical: 10%
Other data collection methods			
Schiamberg et al. (2012) – US	A telephone survey of a random sample of 452 family members (64%) of residents in long-term care settings in Michigan	24.3% reported at least one incident of physical abuse by nursing home staff, whereof physical abuse: 27%, sexual abuse: 11%, forced use of restraint: 62%	
Habjanic & Lahe (2012) – Slovenia	Cross-sectional structured interviews of 128 nursing homes residents in 10 nursing homes	56.3% reported at least one incident of mental abuse, 7.8% physical abuse, and 32.8% reported at least one incident of financial abuse	
Zhang et al. (2010) – US	A telephone survey of a random sample of 414 family members of residents in long-term care settings in Michigan	21% of residents were neglected at least once in the past year	
Cohen et al. (2010) – Israel	Interviews of 71 long-term care residents admitted to hospital	31% of residents reported some form of maltreatment. Most reported was humiliation, followed by neglect and psychological abuse, and the lowest rate was for physical abuse	
Post et al. (2010) – US	A telephone survey of a random sample of 816 family members of residents in long-term care settings in Michigan	29.1% reported at least one incident of abuse by staff Verbal: 11.2%, emotional: 13%, physical: 4.2%, caretaking: 12.7%, neglect, 16.2%, sexual: 0.6%, material: 9.2%	
Griffore et al. (2009) – US	A telephone survey of a random sample of 452 family members of residents in long-term care settings in Michigan	Incidents experienced past year: verbal: 67%, psychological: 78%, physical: 31%, material: 64%, sexual: 10%, caretaking mistreatment: 89%, neglect: 99%	
Jogerst et al. (2006) – US	Mailed survey of nursing home leaders in 409 nursing homes in Iowa	The annual rate of 20.7% per 1,000 nursing home residents	
Jogerst et al. (2005) – US	Analysis of the National Ombudsman Reporting System data from 1997 to 2002	The range of abuse, gross neglect, and exploitation rates was 0.4 to 158 with a median of 5.05 incidents of abuse per 1,000 beds. Verbal (median 1.1), physical (median 1.4), financial (median 0.3), sexual (median 0.3), neglect (median 0.9), RRA (median 0.9)	
Isola et al. (2003) – Finland	A questionnaire survey of family members to residents in long-term geriatric care, in 1998 (n = 509; 75.6%) and 2001 (n = 624; 77.8%)	27% had observed either neglect, physical or psychological offensive behaviors by staff, with the most common type reported to be left an elderly patient alone unnecessarily (12.7%), wet incontinence pads unnecessarily long (12.3%), not helped (11.4%)	
Allen et al. (2004) – US	Retrospective case record review (n= 3,443) of Ombudsman Reporting System in 261 nursing homes in Connecticut	69% of nursing homes had accounts of care complaints, and 47% had at least one account of elder abuse	

Resident-to-resident Aggression

Numerous studies have explored the prevalence of NPS and aggressive behaviors related to dementia (Zhao et al., 2016), and several studies have investigated the prevalence of aggressive behaviors exhibited by residents toward healthcare staff (Edward et al., 2014). In 1990, Cohen-Mansfield et al. explored agitation in dementia and found that cognitively impaired persons manifested aggressive behaviors toward staff, fellow residents, and visitors alike, but it was not until 2004 that Shinoda-Tagawa et al. drew attention to the aggressive behaviors occurring *between* nursing home residents. Shinoda-Tagawa et al. (2004) identified the number of cases of resident injury inflicted by fellow residents by conducting a case-control study of the Minimum Data Set assessments for Massachusetts nursing home residents and the Massachusetts Department of Public Health Complaint and Incident Reporting System. The study identified 294 cases, wherein the reported injuries were lacerations (n = 113), bruises or hematomas (n = 105), fractures (n = 39), reddened areas (n = 31), and dislocations (n = 6).

Since this seminal work, studies have used different approaches to examine the extent and nature of RRA in nursing homes, including secondary analysis of existing records/registers (Abner et al., 2019; DeBois et al., 2019; Lachs et al., 2007; Murphy et al., 2017), publicly available data or media (Caspi, 2018), qualitative event reconstructions (Pillemer et al., 2012), observational designs (Lachs et al., 2016), and interviews (Rosen, Lachs, et al., 2008; Sifford-Snellgrove et al., 2012; Snellgrove et al., 2013; Trompetter et al., 2011) or surveys of staff (Castle, 2012b), family members (Schiamberg et al., 2015; Zhang et al., 2012), and/or residents themselves (Rosen, Lachs, et al., 2008). These studies also provide a wide range of prevalence estimates due to the differences in data collection methods. A study by Lachs et al. (2016) calculated the annual prevalence estimate of RRA based on resident and staff interviews, shift coupons, event logs, incident/accident reports, and forensic chart interviews and reported that 20.2% of residents had been involved in at least one incident of RRA during a single month. The same study reported that 46.9% of residents had screamed at and 11.3% had hit fellow residents. Castle (2012b) used a staff survey to measure the prevalence of aggression in US nursing homes, but this study did not calculate an overall prevalence rate but instead solely reported estimates of each act and found that 97% of the nursing staff had observed residents yelling and cursing, and 94% of staff had observed residents pushing, grabbing, or pinching fellow residents during a three-month reference period. Joyce (2020) conducted a retrospective cohort study of residents in Australian residential aged care

facilities and found 169 incidents of RRA, indicating that one in every 13 residents were targets of RRA during a single year, and acts of physical aggression (62.7%) were more prevalent than verbal (20.1%) or sexual (17.2%) aggression. The most recent study, conducted by Goergen (2020), undertook a quantitative survey of staff and found that 69.3% had observed verbal aggression between residents, 48.7% had observed material aggression, 33.3% had observed physical aggression, and 9.9% had observed sexual harassment/assault in the previous four weeks.

Relative-to-resident Abuse

Perpetrators of elder abuse in community settings may be intimate partners or spouses, children, grandchildren, or others close to the older person (Roberto, 2017); several studies have estimated the prevalence of elder abuse in community settings, but few studies have explored the prevalence of relative-to-resident abuse occurring after admission to nursing homes. Saveman et al. (1999) conducted a cross-sectional survey of nursing staff in Swedish residential settings (sheltered housing, group-dwelling homes, ordinary homes, and nursing homes) wherein staff responded whether they had observed or perpetrated SRA or observed relative-to-resident abuse. The prevalence estimates reported were not differentiated by housing type, but the authors reported that relative-to-resident abuse was as prevalent as SRA. Teaster and Roberto (2004) examined aggregated data from Adult Protective Service (APS) case files of sexually abused women in nursing homes and found 50 cases during five years, wherein the alleged perpetrator was a relative in 4% of the cases. When a relative was the perpetrator, the sexual abuse either occurred in the nursing home or when the resident was removed from the institution. Another study by Teaster et al. (2015) gathered information on alleged and confirmed cases of sexual abuse of older women in nursing homes and identified 64 cases, wherein 8% of the perpetrators were relatives. Buzgova and Ivanova (2009) found in interviews with nursing staff and residents that perpetrators of abuse were employees, fellow residents, and relatives. The staff described situations where relatives misappropriated residents' pensions and took their money; this financial abuse was often connected with acts of psychological abuse. The study also reported that nursing home staff had witnessed signs of physical abuse when new residents were admitted, and employees encountered residents' aggressive behaviors as reactions to interpersonal violence occurring before admission.

2.4.6 Polyvictimization

Polyvictimization, the most recent of the lifespan victimizations gaining public attention, was first introduced in the field of child abuse (Teaster, 2017). Child abuse research indicates that

children exposed to one type of abuse are more likely to experience additional forms and that different types of abuse tend to cooccur, overlap, and interact (Debowska et al., 2017). Polyvictimization was not a focus in elder abuse research until 2012, even though decades of studies have documented the cooccurrence of multiple subtypes by one or more perpetrators (staff, relatives, fellow residents; Ramsey-Klawsnik, 2017). Ramsey-Klawsnik et al. (2008) reported, in their study of sexually abused older adults in care facilities, that the victims had experienced additional cooccurring forms of abuse, such as physical and psychological. When screening for abuse of persons with dementia, Wiglesworth et al. (2010) found that many individuals who were physically abused were also psychologically abused and/or neglected. Jackson and Hafemeister (2012) found that older adults who experienced hybrid financial abuse, acts cooccurring with physical abuse, and/or neglect were more likely to experience adverse outcomes than were persons experiencing solely financial abuse. Polyvictimization in later life may lead to deleterious effects on victims and exacerbate negative outcomes more than any singular form of abuse (Williams et al., 2020). Dong and Simon (2013c) found that being exposed to several types of elder abuse increased the likelihood of hospitalizations significantly. A review found that compared to older persons who had never experienced any abuse or had experienced only a single form, elder polyvictims were more likely to require ADL assistance, having experienced traumatic events, lower social support, and suffered from poor health (Williams et al., 2020).

In 2012, the National Committee for the Prevention of Elder Abuse received a grant from the US Department of Justice to explore polyvictimization in later life, specifically to develop a uniform definition (Teaster, 2017). The following definition emerged: “Polyvictimization in later life occurs when a person aged 60 or older is harmed through multiple cooccurring or sequential types of elder abuse by one or more perpetrators, or when an older adult experience one form of abuse perpetrated by multiple others with whom the older adult has a personal, professional, or care recipient relationship in which there is a societal expectation of trust. Perpetrators of polyvictimization in later life include individuals with special access to older adults such as intimate partners, other family members, fiduciaries, paid or unpaid care or service providers, and resident(s) or service recipients in care settings” (Teaster, 2017, p. 292).

Polyvictimization may occur in institutional settings, where many residents have disabilities and illnesses that increase vulnerability, and the perpetrators may be relatives and/or paid caregivers, from whom a trusting relationship is expected, but this societal expectation of

trust also extends to fellow residents who have *access* to vulnerable adults due to shared living arrangements (Ramsey-Klawsnik, 2017). Cascading maltreatment may occur when one or more incidents trigger additional forms of abuse inflicted by the same or another perpetrator, or in situations where people in trusted positions fail to respond adequately (Ramsey-Klawsnik, 2017). For example, a woman who was sexually abused by a fellow resident was confined to isolation by the staff to prevent further abuse (Ramsey-Klawsnik, 2017). Teaster (2017) describes polyvictimization as a wicked problem, with issues running from micro to macro levels of the environment, and proposed the ecological model as a theoretical framework to illustrate the complexity that requires a nuanced understanding, as well as a coordinated response stemming from many levels of intervention.

2.4.7 Underrecognizing and Underreporting

With the article entitled "See no evil, hear no evil, speak no evil," Moore (2016) illustrated that a significant number of caregivers had been aware of elder abuse in care homes, but the mistreatment was not reported within the institutions or to external authorities. Scholars have long suggested that for all prevalence estimates provided for elder abuse, only a fraction of cases are reported (Bonnie & Wallace, 2003; Cooper et al., 2008; Wolf, 2000); this underrecognition and underreporting of elder abuse applies to residents, relatives, healthcare professionals, facilities, and agencies (Hawes & Kimbell, 2010).

Older persons may not report abuse due to shame, fear, or dependency on the perpetrator (Mysyuk et al., 2016). Furthermore, many residents in nursing homes are cognitively impaired and unable to communicate or report acts of abuse and attempted reports may be considered implausible delusions of mentally ill older individuals (Hawes & Kimbell, 2010). Relatives may underreport abuse because they fear retaliation by staff, believe complaining is futile because nothing will change, do not recognize signs and symptoms of abuse, or do not know how or where to report the abuse (Hawes & Kimbell, 2010; Isola et al., 2003). Reasons for healthcare professionals not reporting elder abuse may include negative attitudes toward older persons, lack of training or education to recognize abuse, too few staff members to investigate incidents, feelings of powerlessness or inadequacy to report cases, and fear of reprisal (Hawes & Kimbell, 2010; Malmedal et al., 2009b; McCool et al., 2009; Natan et al., 2010; Saveman et al., 1999). Another postulated reason is that staff lack awareness that their behavior could be deemed as abusive and even blame the resident behaviors that led the abuse to occur (Drennan et al., 2012). The leadership at nursing homes may for different

reasons underreport by screening out or not reporting substantiated cases of abuse for further investigation or follow-up by the Long-Term Care Ombudsman Program or APS (Hawes & Kimbell, 2010). In Norwegian nursing homes, Myhre et al. (2020a) conducted a focus group study of leaders' perceptions of elder abuse and found that aggression between residents was considered a *normal part* of the daily life in nursing homes, that abuse by relatives was considered a *private affair* between the residents and their relatives, and that abuse from the nursing staff was considered *an unthinkable event* difficult to discuss. Concerning barriers to staff reporting elder abuse in nursing homes, Myhre et al. (2020b) found, in interviews of Norwegian nursing home leaders, three primary factors: a) *organizational, structural factors* such as lack of routines or time to report incidents in the adverse event reporting system; b) *cultural factors* such as perceptions of what constitutes abuse and loyalty among staff; c) and *abuse severity factors* where serious acts of abuse were not reported unless there was clear evidence, and less serious acts of psychological abuse were considered difficult to detect. Finally, agencies such as APS and the Long-Term Care Ombudsman Program may underreport due to differing orientations, roles, and responsibilities for accepting and investigating allegations of abuse (Hawes & Kimbell, 2010).

2.4.8 Theorizing Elder Abuse

Theories represent a systematic way to understand and explain situations, behaviors, and events and may provide a powerful influence on how information is predicted, collected, analyzed, and interpreted (Roberto & Teaster, 2017). The key element of any theory is to advance the understanding of a phenomenon, and theories must be considered a process, not a static event (Roberto & Teaster, 2017). Lack of theories may lead to the limited or spurious application of study findings and barriers to building cumulative knowledge (Roberto & Teaster, 2017). A *theoretical framework* is based on an existing theory (or theories) and is often used to test a hypothesis, and a *model* is an illustrative representation to make the framework easier to understand (Burnight & Mosqueda, 2011; Kivunja, 2018). A *conceptual framework* is a total justification, including the underlying rationale, structures, plans, and implementation of the study (Kivunja, 2018).

"Theorizing is like putting together a puzzle" (Bengston et al., 2005, p. 4). Science is a continuous and cyclic process of discoveries and confirmations (Bengston et al., 2005), and creating a knowledge base of elder abuse may include different methods of theorizing (using theories): *deductive*, *inductive*, *combining*, and *borrowing* (Roberto & Teaster, 2017).

Deductive theorizing involves drawing knowledge from an existing theory of larger scope, *inductive theorizing* begins with the data and induces theories, *combining* involves drawing tenets or constructs from several existing theories relevant to study, and *borrowing* is using promising theories and concepts from other study topics or similar disciplines (Bengston et al., 2005). Elder abuse researchers tend to *borrow* theories from other disciplines, such as the other fields of interpersonal violence, psychology, and sociology (Roberto & Teaster, 2017). Burnight and Mosqueda (2011) summarize the most utilized theoretical approaches for understanding elder abuse in four categories: intrapersonal theory, interpersonal theory, sociocultural theory, and multisystemic theory (Figure 1).

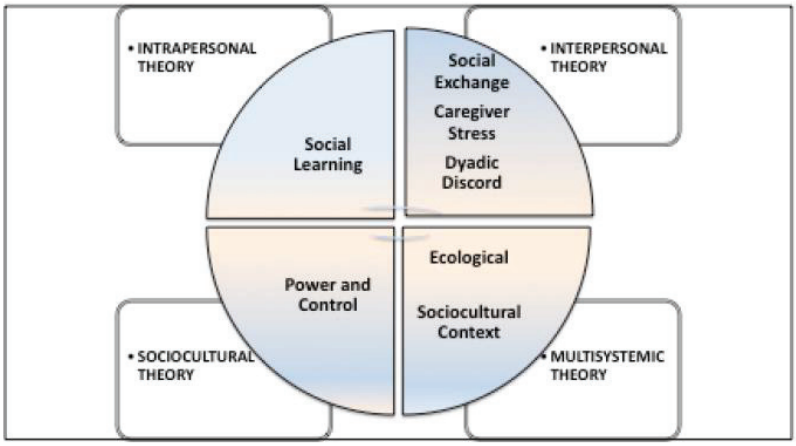

Figure 1. Theoretical Approaches for Understanding Elder Abuse (Burnight & Mosqueda, 2011)

Intrapersonal Theory

The social learning theory, or cycle of violence theory, was developed in the field of child abuse; American psychologist Albert Bandura stated that behavior was learned by observing others and that children imitate and model their parents' attitudes, behaviors, and emotional reactions (Roberto & Teaster, 2017). Researchers have used this theory to explore the transmission of violence through generations (Roberto & Teaster, 2017); in the field of elder abuse, studies have revealed that individuals who had been victims of child abuse more likely perpetrate abusive acts toward their older family members (Dong et al., 2017). Thus, this intergenerational transmission of violence may not be directly attributable to formal caregivers perpetrating abuse in nursing homes. Shaw (1999) did, however, find that nursing home staff who have been victims of child abuse or intimate partner violence become

sensitive to invasions of personal space and react viscerally by committing physical abuse toward residents.

Interpersonal Theory

The social exchange theory has its background in economics and psychology and seeks to explain interactions between individuals as a process of negotiated exchange (Burnight & Mosqueda, 2011). In the context of elder abuse, older persons are often vulnerable and frail and do not have sufficient exchange possibilities (Roberto & Teaster, 2017), and those individuals who contribute most to the relationship hold the power advantage and may manipulate the behavior of dependent older adults (Burnight & Mosqueda, 2011).

The caregiver stress theory, or situational theory, has its roots in gerontological literature and focuses on an adult family member's response to stressors when caring for an older person with physical and/or cognitive impairments (Roberto & Teaster, 2017). The older victim is considered dependent on the caregiver, who becomes frustrated, overwhelmed, and abusive because they cannot manage the caregiving responsibilities (Burnight & Mosqueda, 2011). Several studies have posited an association between caregiver stress, dependency, and elder abuse in a family context (Storey, 2020), but this has also been reported in institutional settings, with incidents of elder abuse found to be related to caregiver burden in conjunction with workplace stress (Goergen, 2001, 2004). This theory has, however, been criticized because it "blames" the victims and legitimates the perpetrators (Burnight & Mosqueda, 2011). Caregiver stress may not be considered the primary cause of elder abuse, but it is important not to overlook stress as a contributing factor of elder mistreatment, and stress and workload may be acknowledged, measured, and included in studies without defending the perpetrator (Burnight & Mosqueda, 2011).

The dyadic discord theory was developed in the field of intimate partner violence and asserts that relationship discord and behaviors are central constructs in family violence (Burnight & Mosqueda, 2011). Burnight and Mosqueda (2011) argue that the assumption that elder abuse is always unidirectional from the perpetrator to the victim is an over-simplified postulation and that studies should empirically investigate the dyadic discord between the older victim and the trusted other.

Sociocultural Theories

The power and control theory was developed in the intimate partner violence field and posits that perpetrators use certain coercive tactics to gain and maintain control and power in a

relationship (Burnight & Mosqueda, 2011). Feminists consider intimate partner violence to stem from this domineering and unequal power between men and women (Burnight & Mosqueda, 2011). From this theory, elder abuse does not result from victims' increased needs but from the dependence on their perpetrators (Burnight & Mosqueda, 2011).

Multisystemic Theories

A sociocultural framework specifically designed to explain elder mistreatment was proposed by the National Academies of Science in 2003 (Bonnie & Wallace, 2003). This framework builds on relationships between the older adult and others, considers the dynamics of power and control, social exchange, and inequality, includes outcomes, and addresses the issue of the *trusted other* (Roberto & Teaster, 2017).

The term *ecology,* derived from biological science, refers to the interrelationships between organisms and their environments; the ecology of human development refers to "the scientific study of the progressive, mutual accommodation, throughout the life span, between a growing human organism and the changing immediate environments in which it lives, as this process is affected by relations obtaining within and between these immediate settings, as well as the larger social contexts, both formal and informal, in which the settings are embedded" (Bronfenbrenner, 1977, p. 514). The ecological model was first introduced by the American psychologist Urie Bronfenbrenner in the 1970s, first as a conceptual model for understanding human development and later formalized as a theory; it was developed in response to the restricted and one-sided investigations of psychologists who claimed that individuals (children) were detached from their social contexts (Bronfenbrenner, 1979). This ecological framework, or model, is conceived as a nested set of four systems, or levels, each inside the next, like a set of Russian dolls; this illustrates the multifaceted and interactive effects between personal, relational, and environmental factors (Bronfenbrenner, 1979). The first and innermost *microsystem* contains a pattern of events, social roles, and interpersonal relations experienced by the individual in its immediate context, the second *mesosystem* refers to relational factors between and among two or more microsystems, the third *exosystem* includes different environmental aspects that affect the individual indirectly, and the fourth *macrosystem* refers to beliefs, cultures, and ideologies in the larger society (Bronfenbrenner, 1979). Bronfenbrenner later introduced the *chronosystem,* including the internal and external elements of time and history (Bronfenbrenner, 1986). Since the seminal work by Bronfenbrenner, several fields have adopted the ecological framework to illustrate multisystemic approaches, including psychology and public health promotion (Sallis et al.,

2008). In the field of violence, the ecological model was first applied to child abuse and youth violence, then to intimate partner violence, and later to elder abuse (WHO, 2014); today, the ecological model is the most widely used theoretical framework to guide analysis in elder abuse research (Burnes, MacNeil, et al., 2020).

In 2002, WHO's *World Report on Violence and Health* presented a four-level ecological model to describe the complexity of violence across all age groups and settings (Krug et al., 2002), but this model was "simpler" than Bronfenbrenner's initial model. This four-level model considers the complex interplay of individual, relationship, community, and societal factors that may be related to violence, where the nested circles illustrate how factors at one level affect factors at the others (Figure 2). As applied to the field of violence, the (first) individual level seeks to identify biological and personal history factors that increase the likelihood of becoming a victim or perpetrator of violence, and the (second) relationship level explores how social relationships and interactions increase the risk of violent victimization and perpetration. The (third) community or institutional level explores the settings and contexts in which these social relationships are embedded, and the (fourth) societal level examines the larger societal factors that influence victimization (Krug et al., 2002).

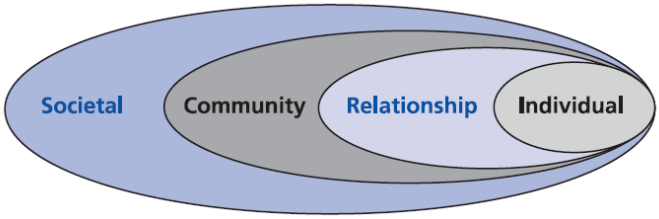

Figure 2. WHO's Ecological Model for Understanding and Preventing Violence (Krug et al., 2002)

An ecological approach has also been used in the study of RRA in nursing homes since it conceptualizes institutions as exceedingly contingent environments, where the behavior of one resident is affected by the social partners with whom they live and interact (Burnes, Syed, et al., 2020; Pillemer et al., 2012). The model also illustrates that acts of RRA are shaped by differing individual characteristics of victim and aggressor, as well as the physical and social environments in which they live (Pillemer et al., 2012; Schiamberg et al., 2015). Furthermore, the interactional nature enhances the complexity of the phenomenon, where the needs, person-environment fit, and consequences for both parts in the RRA dyad must be considered to better interpret the features contributing to aggression (Pillemer et al., 2012).

2.4.9 An Ecological Approach to Identify Risk Factors of Elder Abuse

Elder abuse in nursing homes is not a consequence of a single event and may not be explained by a single cause (Roberto & Teaster, 2017); thus, developing a full understanding of abuse in nursing homes requires attention to both victim and perpetrator characteristics, their relationships, and finally, broader institutional and societal contexts. An ecological model may not explain *why* elder abuse occurs, but using this approach to guide the identification of risk factors may provide a more comprehensive understanding of the multifaceted and complex phenomenon of elder abuse in nursing homes; thus, the current study leans on WHO's four-level ecological model as a theoretical framework to identify risk factors of elder abuse in Norwegian nursing homes. In the next sections, risk factors identified in the literature are presented according to the ecological approach.

Staff-to-resident Abuse

Individual risk factors are divided into characteristics of victims and perpetrators, and even though the available evidence of factors related to elder abuse in nursing homes is not extensive, some risk factors have been reported consistently (Kamavarapu et al., 2017). Of victim characteristics, several studies have reported that female residents are more exposed to abuse by staff members in nursing homes, compared to male residents (Kamavarapu et al., 2017). As for victim age, the effect of age without physical or cognitive impairments may not constitute an explanation for assistance and so is not expected to directly increase the likelihood of abuse (Conner et al., 2011). Conner et al. (2011) controlled for residents' impairments and found that victim age only had a positive correlation with abuse when it was associated with cognitive impairments. Other consistently reported victim characteristics have been related to residents' decreased cognitive and physical functioning (Cohen et al., 2010; Conner et al., 2011; Post et al., 2010; Schiamberg et al., 2012; Zhang et al., 2010). In addition, some studies have reported that residents who have no regular visitors are more prone to being exposed to abuse (Buzgova & Ivanova, 2011; Shaw, 1999).

Concerning staff characteristics, some findings are mixed, and some reported consistently. Of staff demographics, some studies have found that male staff perpetrate more acts of abuse than do female staff (Blumenfeld Arens et al., 2017; Drennan et al., 2012; Kamavarapu et al., 2017), but regarding the age of staff, some studies report younger age as a risk factor (Pillemer & Bachman-Prehn, 1991; Wang, 2005), while others have found older staff perpetrating more acts of abuse (Malmedal et al., 2009a; Malmedal et al., 2014). Inconsistency has also been reported regarding educational level, where some studies have

found that more highly educated staff perpetrate more acts (Malmedal et al., 2009a; Malmedal et al., 2014), while others have found that less educated staff perpetrate more acts of abuse (Buzgova & Ivanova, 2011; Wang, 2005). Other risk factors of staff have been reported to be poor overall health (Drennan et al., 2012; Saveman et al., 1999), feelings of burnout or emotional exhaustion (Buzgova & Ivanova, 2011; Drennan et al., 2012; Goergen, 2004; Neuberg et al., 2017; Pillemer & Bachman-Prehn, 1991; Saveman et al., 1999), job dissatisfaction (Buzgova & Ivanova, 2011; Malmedal et al., 2014), intention to leave the job (Drennan et al., 2012; Pillemer & Moore, 1989), and holding negative attitudes toward older persons (Drennan et al., 2012; Goergen, 2004; Shinan-Altman & Cohen, 2009).

Relational risk factors include the relationship between staff and residents. Resident aggression toward nursing staff is found to be a common component of work in nursing homes and is a significant contributor to occupational stress (Edward et al., 2014; Lachs et al., 2013). Unfortunately, resident aggression may also lead to acts of SRA, often considered a reactionary retaliation due to frustration (Lachs et al., 2013). Alternatively, staff may react by avoiding or minimizing their contact with residents, thus reducing the quality of care given (Lachs et al., 2013). Numerous studies have posited a significant association between high levels of aggressive behaviors and staff/resident conflicts with the higher occurrence of SRA in nursing homes (Buzgova & Ivanova, 2011; Drennan et al., 2012; Goergen, 2004; Malmedal et al., 2014; Post et al., 2010).

Institutional risk factors include characteristics of both staff and institutions/facilities, wherein several individual risk factors may be linked to or caused by the institutional context in which they work (Sethi et al., 2011). Studies have found that these risk factors include high workload/stress (Blumenfeld Arens et al., 2017; Buzgova & Ivanova, 2011; Goergen, 2001, 2004; Wang, 2005), a lack of social interactions or support from managers and/or coworkers (Buzgova & Ivanova, 2011; Song et al., 2020), and insufficient teamwork and safety culture (Blumenfeld Arens et al., 2017; Goergen, 2004; Shinan-Altman & Cohen, 2009; Song et al., 2020). Studies report inconsistency concerning facility characteristics, where a high prevalence of SRA has been reported in both small (Drennan et al., 2012) and large (Jogerst et al., 2006; Natan et al., 2010) nursing homes, and in institutions located in both urban (Jogerst et al., 2006) and rural (Malmedal et al., 2014) areas.

Resident-to-resident Aggression

Concerning **individual risk factors**, previous research has found that victims of RRA in nursing homes are both male (Shinoda-Tagawa et al., 2004) and female (Lachs et al., 2007; Zhang et al., 2012), are cognitively impaired (Lachs et al., 2007; Rosen, Lachs, et al., 2008; Shinoda-Tagawa et al., 2004), and/or often demonstrate NPS, such as aggression and/or wandering (getting in harm's way; Rosen, Lachs, et al., 2008; Shinoda-Tagawa et al., 2004). Aggressors are more likely to be male (Caspi, 2018; DeBois et al., 2019; Murphy et al., 2017), be younger than their victims (Caspi, 2018; DeBois et al., 2019; Murphy et al., 2017), be more physically dependent (Shinoda-Tagawa et al., 2004), and/or suffer from cognitive impairment, dementia or mental illness themselves (Caspi, 2018; Murphy et al., 2017; Shinoda-Tagawa et al., 2004).

Several studies have examined the **relational risk factors** of RRA. In a qualitative analysis of event reconstructions in US nursing homes, five broad themes emerged: invasion of privacy or personal integrity, roommate issues, intentional verbal aggression, inappropriate sexual aggression, and unprovoked incidents (Pillemer et al., 2012). Many events of RRA were the result of a self-defensive behavior by a resident who felt threatened or uncomfortable by the proximity of another resident, even though the behavior could be a genuine effort to be helpful (Pillemer et al., 2012). In focus groups of nursing home residents and staff, Rosen, Lachs, et al. (2008) found that triggers of RRA included various catalysts, such as communication challenges and competition over resources (e.g., for a preferred chair in the dining room or television lounge), as well as interaction issues related to racism, ethnic stereotyping, or religious differences. Lachs et al. (2007) also found that RRA incidents were the result of a conflict situation, often between roommates; in one example, two male residents got into a fistfight about using the doorway, resulting in one of the residents getting a laceration on his face. Furthermore, several cases of physical aggression were attributed to residents who had experienced long-standing repetitive and disruptive behaviors, such as screaming and inappropriate touching, usually (but not always) by other residents with dementia (Lachs et al., 2007).

Some **institutional risk factors** are related to RRA. One study found a higher incidence of RRA in larger, compared to smaller, nursing homes and institutions located in metropolitan, compared to non-metropolitan, areas (Murphy et al., 2017), and another study found more incidents in dementia special care units compared to other units (Shinoda-Tagawa et al., 2004). Some studies have reported that RRA is most often exhibited in shared dining/living

rooms or hallways (DeBois et al., 2019; Lachs et al., 2007; Murphy et al., 2017; Rosen, Lachs, et al., 2008), while others have found incidents to be more prevalent in residents' rooms (Caspi, 2018; Lachs et al., 2007; Rosen, Lachs, et al., 2008; Shinoda-Tagawa et al., 2004). Most episodes of RRA occur in the afternoon or evening (Lachs et al., 2007; Murphy et al., 2017; Rosen, Lachs, et al., 2008), often when staff are not present (Caspi, 2018; DeBois et al., 2019; Duxbury et al., 2013).

Few studies have examined **societal risk factors** related to both SRA and RRA. However, societal risk factors in institutional settings may include institutional cultures with a high tolerance for and acceptance of abuse and aggressive behavior, negative beliefs about older persons and aging, and unsympathetic or negative attitudes toward nursing home residents (Phelan, 2020). The health system as an institution of society may reflect ageism assumptions that may be interjected into healthcare settings; thus, confronting ageist attitudes in society may be central to preventing elder abuse in institutional settings (Phelan, 2020).

Relative-to-resident Abuse

The literature search revealed no studies exploring the risk factors of relative-to-resident abuse in nursing homes. However, in a community setting, several risk factors of elder abuse have been identified: cognitive and physical impairments of victims, older persons with dementia displaying aggressive behavior, caregiver stress and exhaustion, and problems with relationships and attitudes (Storey, 2020).

3.0 Rationale and Aims

While international research agrees on the persistent occurrence of elder abuse and its devastating consequences, WHO's *Global status report on violence prevention 2014* emphasizes that elder abuse is less addressed in governmental action plans than are the other forms of interpersonal violence and concludes that an urgent need exists for research that could lead to the prevention and reduction of the mistreatment of older persons. WHO (2014) suggests that a successful response involves a four-step comprehensive public health approach that determines the scope and consequences (step one), causes and predictors (step two), and design, implementation, and evaluation of interventions (step three) and then utilizes evidence-based actions to monitor impact and cost-effectiveness (step four). The overall goal of the current thesis is to provide new knowledge on the extent and nature (step one) and risk factors (step two) of elder abuse in Norwegian nursing homes, so that appropriate interventions to prevent elder mistreatment (step three) may be developed, implemented, and evaluated (step four). This overall goal is achieved by conducting studies with the following aims:

Paper I aims to estimate the prevalence of observed and perpetrated SRA in Norwegian nursing homes and examines demographic differences between staff who report perpetrating acts of abuse and those who do not.

Paper II aims to estimate the prevalence of RRA in Norwegian nursing homes and examines differences in facility characteristics between nursing homes with high and low occurrences of RRA.

Paper III aims to examine risk factors on different levels of the ecological model (individual, relational, institutional) associated with staff-to-resident psychological abuse, physical abuse, and neglect in Norwegian nursing homes.

Paper IV (in progress) aims to estimate the prevalence of relative-to-resident abuse in Norwegian nursing homes.

4.0 Material and Methods

4.1 Study Design

The current study utilizes an observational cross-sectional study design. The use of cross-sectional studies to estimate the prevalence of elder abuse in long-term care settings is well documented (Ho et al., 2017; Malmedal et al., 2020; Yon et al., 2019).

4.2 Participants and Procedures

Eligible participants were nursing staff who provided direct patient care during three weeks between October 2018 and January 2019. Other facility staff, such as physicians, occupational therapists, physiotherapists, and activity staff, were excluded because they spend less time with residents. A three-week data collection period was chosen to embrace nursing staff working different hours per week at the nursing home.

4.2.1 Sampling Design and Sample Size

The current study uses a multistage sampling design, with nursing homes recruited in the first stage, and nursing staff working in these nursing homes recruited in the second stage. A multistage sampling technique is a cost-effective and often-used method to cover large geographical areas (e.g., in national surveys; Lewis-Beck et al., 2004). In the field of elder abuse, standardized measurement instruments are lacking, and few large national studies have been conducted to explore its magnitude (Malmedal et al., 2020). The sample sizes of nursing homes and staff in the current study were not statistically computed. After discussing with statisticians at the unit for Applied Clinical Research (ACR), NTNU, and Statistics Norway and reviewing the sample size and response rates in the few existing national studies, a sample of approximately 10% (N = 100) of all Norwegian nursing homes was chosen. In comparison, the national survey on staff-to-resident interactions and conflicts in Ireland included 64 out of 613 nursing homes (Drennan et al., 2012).

In Norway, the Central Register of Establishments and Enterprises (CRE) contains information of all enterprises (juridical units) and establishments in the private and public sectors, and a simple random sampling technique of all nursing homes registered in the CRE was applied. The register from 2017 was first sorted by industrial codes 87.102 (somatic

nursing homes) and 87.301 (retirement homes; hereafter *nursing homes*), which resulted in 939 institutions, excluding two nursing homes used in the pilot of this study. Then, the unit for ACR used a computerized random number generator to draw a sample of 100 nursing homes. This initial procedure resulted in 49 nursing homes with ≥ 34 beds, the median number of beds in Norwegian nursing homes (Statistics Norway, 2017), and 51 institutions with < 34 beds. To compensate for nursing homes declining to participate, the ACR also randomly drew 50 nursing homes to act as reserve homes.

Of the initially 100 invited nursing homes, 27 declined participation, of which many were above the median size of 34 beds. To prevent further skewness, the reserve list was sorted by size, and the 30 largest nursing homes were initially invited, whereas 27 accepted participation (Figure 3). The sample population of nursing homes ranged in size from eight to 161 beds (median 38.5), where 42% were located in suburban areas, 31% in urban areas, and 27% in rural areas, covering all counties in Norway. Ninety-four percent of nursing homes were publicly run by municipalities and 6% by private organizations, approximately reflecting the public/private ratio of nursing homes in Norway.

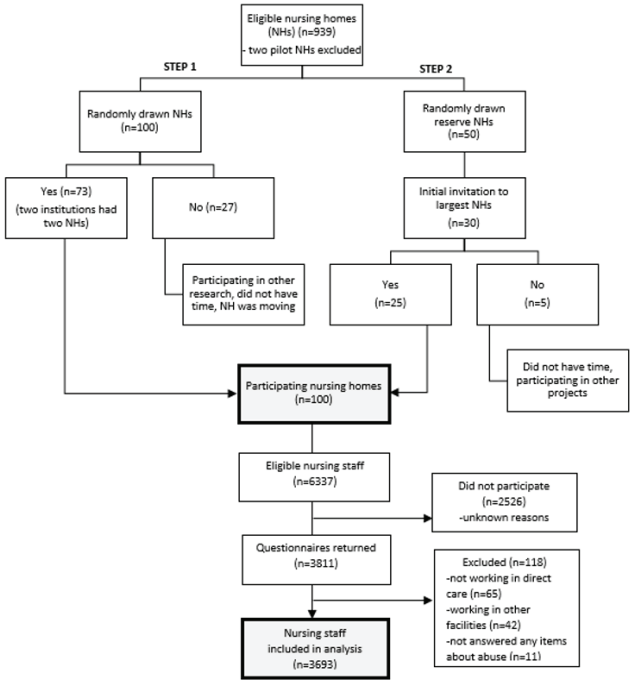

Figure 3. Flowchart of the Recruitment of Nursing Homes and Nursing Staff (Paper I)

4.2.2 Data Collection

The data collection procedure was similar to the Norwegian study on elder abuse conducted by Malmedal et al. (2009a). To recruit nursing homes, an invitation letter was emailed to each nursing home director, followed by a telephone call. Directors accepted by email, along with providing the estimated number of staff at work for three weeks and the name and contact information of one "coordinator" who could administer the survey on site. This task was assigned to either ward managers, nursing home directors, or others appointed by the directors. Each coordinator was provided with a box that included an instruction letter, information/motivation posters, staff questionnaires with information and an invitation letter on the front page (Appendix I), two short questionnaires concerning the unit and facility to be completed by unit managers (Appendix II) and nursing home director (Appendix III), sealed collection box(es), and prepaid postage for the return of the sealed collection box(es). The instruction letter described in detail how the coordinators should administer the survey on site: a) provide information to staff via email and in formal/informal meetings; b) place information/motivation posters in staff duty rooms and wardrobes; c) distribute staff questionnaires in mail shelves and inform staff to place the completed questionnaires directly in the sealed collection box(es); d) send at least two reminders by email; e) after three weeks, write down the exact number of nursing staff at work during the study period; and f) pack and send the sealed collection box(es) with the prepaid postage to NTNU. The coordinators were informed that they could contact the doctoral candidate at any time.

4.2.3 Response Rate

A total of 6,337 nursing staff were eligible for inclusion, whereas 3,811 returned survey questionnaires, resulting in a response rate of 60.1%. Of these, 118 participants were excluded because they did not work in direct care, worked in daycare centers or assisted living facilities, or had not answered any items concerning elder abuse. The nursing home participation rate was 73%, which is higher than Pillemer and Moore (1989) and Castle (2012b). Overall, 3,693 nursing staff were included, resulting in an analytic response rate of 58.3% (Figure 3).

Response rates in surveys of healthcare professionals are often low, and non-responders may be systematically different from responders, which increases the potential for bias and may threaten validity. However, researchers use a wide range of methods to calculate these response rates, and no agreed-upon standard acceptable rate exists (Draugalis et al., 2008).

Hence, of equal importance to the response rate itself is the transparency of the recruitment process (Draugalis et al., 2008). Cook et al. (2009) analyzed response rates in 350 postal or electronic surveys of healthcare personnel from 1996 to 2005 and found an average response rate of 56%, with only 16% of studies achieving a response rate of 75% or higher. The analysis also revealed that the highest response rates were found in studies using reminders, in studies with less than 1,000 respondents, and studies conducted in countries other than the US, Canada, Australia, or New Zealand.

Reasons for study participation vary; some people are stimulated by the purpose, and others respond because surveys are short in length (Groves & Peytcheva, 2008). Monetary incentives may enhance response rates, and some elder abuse studies have provided incentive gift cards directly to nursing staff and obtained high response rates (Castle, 2013). Others have achieved high response rates without incentives, but with a thorough data collection procedure (Malmedal et al., 2009a). In this study, nursing staff received no direct payment, but the eight nursing homes with the highest response rates were offered an economic incentive of approximately 900 GBP dedicated to the welfare of staff. The response rates of nursing homes varied from 14% to 100%, where nine institutions had a rate below 30%, and 46% of nursing homes achieved a response rate above 75%.

4.3 Study Variables

In Paper 1, the outcome measure is the annual prevalence of all forms of observed and perpetrated SRA: psychological, physical, financial/material, sexual, and neglect, disaggregated by the gender, age, and education level of nursing staff. In Paper II, the outcome measure is the annual prevalence of all forms of RRA: verbal, physical, material, and sexual, disaggregated according to nursing home size, location, and type of unit. In Paper III, the outcome measures are individual, relational, and institutional factors associated with perpetrated staff-to-resident psychological abuse, physical abuse, and neglect. The dependent variable is the annual prevalence of abuse, and the independent variables are factors at three levels of the ecological model, illustrated in Figure 4.

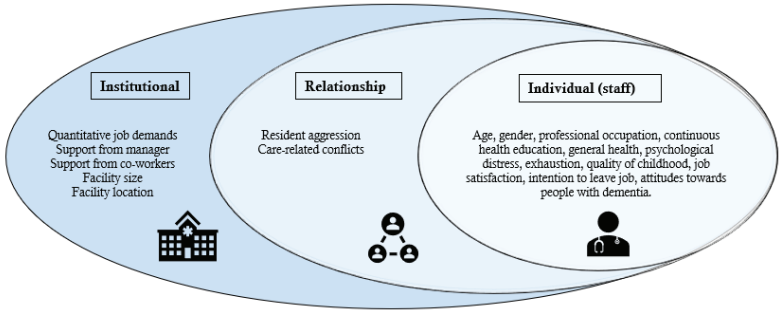

Figure 4. Factors (Independent Variables) on Three out of Four Levels of the Ecological Model (Paper III)

4.4 Measurements

A high-quality instrument aspires to high validity and reliability, wherein the goal is to achieve an exact and unbiased measure. Numerous instruments exist to measure outcomes, such as a person's physical and mental health, exhaustion, satisfaction, and work environment factors; in recent years, several instruments have been developed to measure the prevalence and associated risk factors of elder abuse in nursing homes (Malmedal et al., 2020). The process of choosing the right outcome measurement instruments is complex and involves considerations of conceptual definitions, practical aspects, costs, the burden for participants, and the quality of instruments (Prinsen et al., 2016).

4.4.1 Measuring the Prevalence of Elder Abuse

To find a valid and reliable survey instrument to measure the prevalence of elder abuse in nursing homes, a comprehensive literature search of studies using staff surveys in long-term care settings was conducted (Malmedal et al., 2020). This search produced 17 studies, wherein only one study had used a valid instrument to measure SRA, but this was limited to measuring psychological abuse. Most researchers have used study-specific instruments, mainly by adapting items from the Conflict Tactics Scale, originally designed to measure intrafamily conflicts and violence (Straus, 2004), but few studies have reported the psychometric properties of these self-developed instruments (Malmedal et al., 2020). The literature search revealed, however, one instrument developed by Dr. Nicholas Castle from the US that had been used in four large staff surveys to measure the extent and nature of all types of SRA and RRA in nursing homes and assisted living facilities, and the development of the instrument was thoroughly described in the articles (Castle, 2012a; Castle, 2012b, Castle, 2013; Castle & Beach, 2013). In the study of SRA in assisted living facilities,

satisfactory psychometric properties of the instrument were reported (Castle, 2013); thus, the dimensional structures of the instrument had not been tested in factor analysis.

As the current study aims to explore the prevalence of both SRA and RRA in nursing homes, and considering the lack of existing standardized survey instruments, permission from Dr. Castle was obtained to translate and use this instrument, and WHO's guidelines for translation and adaptation of questionnaires were used to do so with forward and backward translations. The current study did, however, use the definition of elder abuse by the CDC; items of verbal abuse were classified as psychological abuse, and items of medication abuse were classified as physical abuse. One self-developed item concerning rape was included, along with six items measuring neglect from the Norwegian study by Malmedal et al. (2009a). Overall, the instrument measuring SRA comprised 35 items: psychological abuse (eight items), physical abuse (10 items), financial/material abuse (four items), sexual abuse (five items), and neglect (eight items). The same items were used to measure RRA and relative-to-resident abuse, excluding eight items of neglect, one item of psychological abuse (threatening to stop taking care of residents), and three items of physical abuse (medications).

4.4.2 Measuring Risk Factors of Elder Abuse

Individual Staff Factors

Concerning staff demographics; **gender, age, and education** were included as independent variables in Paper I and III. In Paper I, age was divided into three categories: 16–30 years, 31–49 years, and 50–75 years, which are the same categories used by Malmedal et al. (2009a). In Paper III, age was used as a continuous variable. In Paper I, the highest level of education was used in the analysis (primary school, high school, university < 4 years, university ≥ 4 years). In Paper III, professional occupation (nursing assistant, LPN, RN/social educator) was used as a variable instead of the highest level of education, because some staff working in Norwegian nursing homes may have high educational levels, but not within healthcare (National Directorate of Health, 2017), which was the factor of interest. Considering the small percentage of social educators in this study sample (1.3%), this variable was merged with the number of RNs, as they both obtain a bachelor's degree within healthcare.

Concerning the multilevel regression analysis in Paper III, all instruments used to measure the independent variables and Cronbach's alpha levels in the original and current study, are

described in Table 1 (Paper III), and the frequencies (percentages), median (range), and missing values of the instruments are described in Table 2 (Paper III), along with the description on how the independent variables were used in the regression analysis, where some scales were reversed and dichotomized.

Nursing staff's **overall health** was measured with a single item generally accepted as useful to assess a person's health status (Bowling, 2005). **Psychological distress** was measured with the Hopkins Symptom Checklist (SCL); an instrument widely used to measure self-reported general symptoms of anxiety and depression in population surveys worldwide (Strand et al., 2003). This instrument exists in several versions with items ranging from 5 to 90 (Strand et al., 2003). Strand et al. (2003) translated and validated the instrument into Norwegian and found that the short version with only five items (SCL-5) was equally good to measure psychological distress as the version comprising 25 items. SCL-5 measures various symptoms during the last 14 days on a 4-point Likert-scale ranging from *not bothered* to *very bothered*, and according to Strand et al. (2003), a mean cut-off value of ≥ 2.0 qualifies as psychological distress. In the study by Strand et al. (2003), Cronbach's alpha level was reported to be 0.88. When used in the current study, Cronbach's alpha level was 0.86.

Feelings of **exhaustion** and overall **quality of own childhood** were measured with single items previously used in a large population-based cohort in Norway, the Nord-Trøndelag Health Study (Krokstad et al., 2013). **Job satisfaction** was measured with a single item previously found acceptable to measure overall job satisfaction (Wanous et al., 1997). Staff's **intention to leave** their job was measured with a single item also used in other studies of elder abuse (Drennan et al., 2012; Pillemer & Moore, 1989).

To measure nursing staff's **attitudes towards residents with dementia**, one subscale (*Hope*) of the instrument Approaches to Dementia Questionnaire (ADQ) was used; an instrument used in various healthcare settings (Kokkonen et al., 2014; Moyle et al., 2011; Travers et al., 2013). ADQ was developed by Lintern (2001) as a self-report instrument to measure healthcare professionals' attitudes towards persons with dementia and comprise two subscales: *Hope* (8 items) and *Recognition of Personhood* (11 items). The subscale *Hope* reflects respondents' feelings of optimism or pessimism of the current and future condition of a person with dementia and comprises solely negatively loaded items on a 5-point Likert scale ranging from *strongly agree* to *strongly disagree* (Lintern, 2001). A composite score is obtained by summing the score of each item in the subscale (ranging from 8-40), where a

higher score reflects more positive attitudes towards persons with dementia. This instrument was translated into Norwegian by Kada et al. (2009) and used to explore the attitudes to dementia perceived by 291 nursing staff in 14 nursing homes and one hospital-based geriatric ward in Norway. However, the authors did not report any psychometric properties of the translated version. When developed by Lintern (2001), the hope dimension showed a Cronbach's alpha level of 0.76; in this study, Cronbach's alpha level was 0.74.

Relational Factors

Resident aggression may be considered an individual risk factor for residents, but in this study, aggressive acts directed towards staff were measured, and thus, this variable was included as a relational factor. **Resident aggression** was measured with a modified version of a scale (five items) developed and used by Malmedal et al. (2014) in Norwegian nursing homes. A modified version of a scale (four items) from Malmedal et al. (2014) was also used to measure **care-related conflicts** between nursing staff and residents. In both scales by Malmedal et al. (2014), the values were scored on a 4-point Likert scale ranging from *never* to *more than once a week*, and the authors reported acceptable Cronbach's alpha levels of 0.79 on resident aggression and 0.77 on care-related conflicts. The study by Malmedal et al. (2014) did however measure if nursing staff had *ever* experienced any acts of aggression/conflicts, while the current study aimed to measure the annual prevalence of such acts. Also, considering that aggression towards staff is a highly prevalent phenomenon, sometimes occurring daily (Zeller et al., 2009), in the current study, the scoring values were altered to a Likert scale ranging from 1 to 5; *daily, weekly, monthly, rarely, never*, where higher average scores indicate less aggression/conflicts. In the current study, Cronbach's alpha levels were 0.81 on resident aggression and 0.87 on care-related conflicts.

Institutional Factors

In this study, three work environment factors and two facility features on the institutional level were included. **Quantitative job demands** (four items), **support from the nearest manager** (three items), and **support from coworkers** (two items) were assessed by three subscales from the General Nordic Questionnaire for Psychological and Social Factors at Work (QPS_{Nordic}; Elo et al., 2000). The QPS_{Nordic} is a widely used and validated instrument specifically designed for the assessment of psychological, social, and organizational working conditions of employees from various sectors including the healthcare sector, in Nordic countries (Elo et al., 2000). All items are scored on a 5-point Likert scale ranging from *very*

seldom/never to *very often/always*, where average scores are calculated for each subscale (Elo et al., 2000). In the quantitative job demand scale; higher scores indicate more demands, while on the other scales; higher scores indicate more support from managers and coworkers. In the original study by Elo et al. (2000), Cronbach's alpha levels were 0.73 on job demands, 0.83 on support from the manager, and 0.80 on support from co-workers, while in the current study, Cronbach's alpha levels were 0.72, 0.85, and 0.73, respectively. Considering the use of a multilevel approach to explore the potential hierarchical interplay between individual and institutional factors with nursing staff nested within nursing homes, the average score of these work environment scales were aggregated from individual to nursing home level.

Facility size was measured in the number of beds. In Paper II, facility size was disaggregated to small (≤ 50 beds) and large (> 50 beds) institutions. This same cutoff value was used in Ireland and the Norwegian study (Drennan et al., 2012; Malmedal et al., 2009a). The **location** of municipalities in which the participating nursing homes were situated was specified according to Statistics Norway's centrality measures. This index reflects the degree of centrality based on inhabitants' travel time to workplaces and service functions, where level one covers the most central municipalities (biggest cities) and level six the least central (rural villages; Høydahl, 2017). These levels were further categorized into three areas: urban (Levels 1–2), suburban (Levels 3–4), and rural (Levels 5–6).

4.4.3 Pilot Study

The final survey questionnaire comprises six sections: nursing staffs' a) demographic variables (no name or birth date) and employment profile, b) health status, c) work-related variables, d) experiences of aggression/conflicts with residents, e) attitudes toward older people with dementia, and f) experiences of observed and perpetrated SRA, observed RRA, and observed relative-to-resident abuse (Appendix I). This full questionnaire was tested in a pilot study in June 2018, where two conveniently sampled nursing homes and 60 nursing staff completed the survey (response rate: 45%). Information about the survey was also gained in two reflection groups, each with three to four nursing staff who had participated in the survey, and this knowledge was used to modify the questionnaire and data collection procedure. After the pilot study, some linguistic changes to the abuse measurement instrument were made, and one instruction detailing that nursing staff should "not report acts justified in care or treatment, i.e., not give food/water to residents before procedures" was included. Moreover, after feedback from nursing staff and a review of other studies, a period

prevalence of the past 12 months was used (Drennan et al., 2012; Neuberg et al., 2017; Pillemer & Moore, 1989); thus, the scoring values were altered to never, once, 2–5 times, 6–10 times, and more than 10 times.

4.4.4 Reliability and Validity of the Abuse Measurement Instrument

The Consensus-based Standards for the Selection of Health Measurement Instruments (COSMIN) defines reliability as "the degree to which the measurement is free from measurement error," including internal consistency and measurement error (Mokkink et al., 2010, p. 743). Validity is defined as "the degree to which an instrument measures the construct(s) it purports to measure," including content validity (also face validity), construct validity (structural validity, hypotheses testing, cross-cultural validity/measurement invariance), and criterion validity (Mokkink et al., 2010, p. 743).

The abuse measurement instrument used in the current study was originally designed to measure the prevalence of SRA and RRA in US nursing homes and assisted living facilities; considering the differences between US and Norwegian healthcare (Aaberge, 2012), it was not obvious that the instrument content was transferable to the Norwegian nursing home context. Face validity determines the degree to which an instrument adequately reflects the construct of interest (Mokkink et al., 2010). In the current study, face validity was measured by a standardized form evaluating the Norwegian version of the instrument (Appendix IV), where an expert group, several nursing students in the translation process, and nursing staff in the pilot study evaluated whether the survey instructions and items were clear, precise, and easy to understand. After translating the instrument, an expert group of three persons indicated whether each item was relevant to the context of Norwegian nursing homes, on a scale from 1 (not relevant) to 4 (highly relevant). The content validity index (CVI) was calculated for each item (experts scoring 3–4 divided by the total number of experts; Polit & Beck, 2006), which resulted in a range from 0.67 to 1, with the lowest values representing acts of sexual abuse. The scale-level CVI-average (S-CVI/Average) was also computed (summing the average of all items and dividing by the total number of items; Polit & Beck, 2006), which produced an S-CVI/Ave. score of 0.96. An instrument with acceptable content validity has an S-CVI/Ave. of 0.90 or higher (Polit & Beck, 2006).

Internal structure refers to how the various aspects/items in an instrument are related and may be combined into a scale or subscale. Evaluating the internal structure of an instrument is relevant for outcome measures that are based on a reflective model, where the items reflect

the construct to be measured (Prinsen et al., 2016). To consider the internal structure of a multiple-item instrument, a widely used method is Cronbach's alpha, which describes the interrelatedness of the items within the instrument, an index for reliability (Tavakol & Dennick, 2011). Cronbach's alpha is expressed as a number between 0 and 1, where levels > 0.70 are considered acceptable, while levels > 0.90 may suggest redundancies in items, and thus shortening the instrument should be considered (Tavakol & Dennick, 2011). Concerning the abuse measurement instrument, Castle (2013) reported psychometric properties of the instrument in the study of direct care workers' (N = 12,555) perceptions of SRA in the US and found that all Cronbach's alpha levels were between 0.72 and 0.88 on the subtypes of abuse. In the current study, the computed alpha levels of SRA were 0.70 on psychological abuse and neglect but below 0.70 on the other subtypes.

Concerning RRA and relative-to-resident abuse, Cronbach's alpha levels were 0.90 on verbal and physical aggression, but below 0.70 on material and sexual aggression. Concerning relative-to-resident abuse, the alpha was 0.84 on the psychological abuse and 0.77 on physical abuse, but below 0.70 on financial/material and sexual abuse. These findings are interesting and may be caused by several factors. Firstly, the current study used CDC's most recently developed definition and operationalization of elder abuse, where Castle (2013) used other definitions; for example, medication and verbal abuse were considered specific subtypes of abuse, where the CDC and the current study included these acts under physical and psychological abuse. Secondly, Castle (2013) measured abuse in the previous 3 months and used a different scoring scale than the current study, which measured the annual prevalence of abuse with a wider scoring scale. Finally, the counterpart of a reflective model is a formative model, in which the items within an outcome measure are *not* supposed to be correlated, and analyses of the internal structure in such models can be ignored (Prinsen et al., 2016). This may explain the low alpha values in the current study and is further discussed in Chapter 6.

4.5 Statistical Analyses

Data were analyzed with Stata software packages 15.2 and 16.1 (StataCorp., 2017, 2019).

4.5.1 Paper I

As in studies with the same scoring values (Drennan et al., 2012; Pillemer & Bachman-Prehn, 1991), the dependent variable *abuse* skewed toward *never.* For this reason, the variable was

dichotomized to *no abuse* (never) and *abuse* (one or more incidents). Descriptive statistics of nursing staff were presented with frequencies and percentages. Subtypes of abuse were calculated by summarizing all items under the specific category and presented with percentages expressing the number of participants who answered positive (*abuse*) on at least one included item. Owing to the small rates of financial and sexual abuse, these were not analyzed with chi-squared statistics. Nursing staff's perpetrated acts of psychological abuse, physical abuse, and neglect and nursing staff demographics (gender, age, education) were analyzed with Pearson's chi-squared test.

4.5.2 Paper II

Descriptive statistics of nursing staff and nursing homes were presented with percentages, means, and standard deviations (SD). The Shapiro-Francia test was used to examine the normality of the dependent variable *aggression*, where none of the items were found to be normally distributed ($p < 0.05$). Many items were skewed toward never, so the dependent variable was dichotomized into *no aggression* (never) and *aggression* (one or more incidents). All items under each subtype of aggression were summarized and presented in the text as percentages expressing the number of staff answering positive (*aggression*) on at least one item. Pearson's chi-squared test was conducted to examine the association between facility characteristics and the occurrence of all types of aggression. Verbal and physical aggression provided some level of distribution; hence a chronicity scale was created including the number of times the set of acts in the scale occurred among those who had observed one or more acts (Straus, 2004). This operationalization of chronicity is often used to deal with skewed distributions when measuring violence (Straus, 2004). To create this scale, midpoints for the response categories were added before all items under each subtype were summed and presented with median and range, as follows: once = 1; 2–5 times = 3.5; 6–10 times = 8; more than 10 times = 12.5. A Kruskal-Wallis test was conducted to examine this difference in chronicity score (median) of verbal and physical aggression according to facility characteristics.

4.5.3 Paper III

Normality was assessed with the Shapiro-Francia test, and no variables were normally distributed. Characteristics of individual, relational, and institutional factors were presented with percentages (frequencies) and median (range). Prevalence rates of psychological abuse, physical abuse, and neglect were described with percentages (frequencies). Sexual and financial/material abuse were excluded due to the low prevalence rates. Bivariate logistic

regression was used to examine associations between the dependent variable and all independent variables. The choice of covariates to be included in the multivariate logistic regression model was guided by previous empirical investigations, knowledge of potential spurious factors, and/or a p-value < 0.2 (Hosmer et al., 2013; Stoltzfus, 2011). In logistic regression analyses, some basic assumptions must be met (Stoltzfus, 2011). Firstly, the independent variables should be linearly related to the log odds of the dependent variable, which was tested with the "linktest," and nonlinear variables were improved with polynomial terms or dichotomized. Secondly, the multivariate models should have little or no multicollinearity, which was tested with Spearman's correlation coefficients ≥ 0.8, tolerance measures < 0.1, and variance inflation factor > 10 as indicators of multicollinearity (UCLA, n.d.). Thirdly, there must be an adequate number (10–20) of observations per covariate to avoid an overfit model, which was not a problem in this large survey. Finally, logistic regression analyses require that observations be independent, but in this study, nursing staff were nested within nursing homes (clusters), and thus contextual effects (institutional factors) may have affected their responses. Multilevel mixed-effects logistic regression was consequently used to test the variance between nursing homes, where the nursing staff was set at Level 1 and nursing homes at Level 2. Multilevel models "incorporate cluster-specific random parameters that account for the dependency of the data by partitioning the total individual variance into variation due to the clusters or higher-level units and the individual-level variation that remains" (Austin & Merlo, 2017, p. 3258). The importance of these clusters was assessed with the intraclass correlation coefficient (ICC) and standard error. Effect sizes were presented as odds ratio (OR) with 95% CI and exact *p*-values, and results from the full models were reported. The regression models' overall fits to the data were assessed with the Hosmer-Lemeshow goodness-of-fit test (10 groups).

4.5.4 Missing Data

All items measuring the dependent variable elder abuse had missing values lower than 3%. The item with the highest percentage of missing values when measuring perpetrated SRA abuse was *neglecting oral care,* with 2.82% missing values. On observed SRA, RRA, and relative-to-resident abuse, the item *humiliating remarks* had the highest percentage of missing values on all types, with 2.82%, 2.79%, and 2.90%, respectively. According to Straus (2004), it is not recommended to replace missing items with the mean/median when measuring violence due to the commonly skewed nature of the data, "unless the study has such a small

sample that one cannot afford to lose any cases, the best thing is to accept the loss of an unanswered question" (p. 5). Considering the large sample size in the current study, all variables with missing values were removed completely. Concerning the independent variables, items with the most missing items were *attitudes toward persons with dementia,* with 7.15% missing, and *age,* with 6.39% missing. In Paper III, many covariates were included, each with some missing data, and about 25% of observations in the full regression models were lost. This may have caused estimates to be less precise or biased if the complete cases differed systematically from the incomplete cases (Langer, 2016). However, considering that the remaining sample size was still large ($N \geq 2{,}773$), multiple imputations of the missing data were not conducted.

4.6 Ethical Considerations

The study was approved by the Norwegian Regional Committee for Medical and Health Research Ethics in May 2018 (reference number: 2018/314). Information about the study and its purpose was given on the first page of the staff questionnaire (Appendix I). Participating nursing staff did not include their names or birth dates on the questionnaire, and consent from the nursing staff was obtained upon completion when they placed the questionnaire in the sealed collection boxes. They were informed that they could not withdraw their participation after questionnaires were returned in the sealed boxes. Each nursing home was assigned a unique code for data analysis. Participants were guaranteed that this code would be kept safe and that no one could be identified in any reports or publications. Elder abuse is a sensitive topic, and information about the national helpline, Protective Services for the Elderly (*Vern for eldre)*, was provided on the first page of the staff questionnaire. This is a helpline that older persons, relatives, healthcare staff, and others may (anonymously or not) call to get advice in situations of suspected or committed abuse. Moreover, source protection issues may arise when one receives information concerning serious/severe matters, such as violence and abuse, and this may activate the Norwegian Penal Code §138, which negates researchers' duty of confidentiality to "prevent a criminal act or its consequences, at a time when this is still possible, and it appears certain or most probable that the act will be or has been committed." However, in this study, all participants were public employees and themselves obligated by the Norwegian Penal Code §139 to prevent or react when incidents of resident abuse had occurred. Moreover, this study gathered no information about study participants' names or birthdates so participants could not be identified.

5.0 Results

The following chapter summarizes the results of the three published/submitted papers covered in this thesis, as well as some prevalence estimates from Paper IV, which is in progress. Figure 5 illustrates the overall prevalence rates from Papers I, II, and IV. Papers I–III present the results in greater detail, including figures and tables.

5.1 Participating Nursing Staff

In the current study, participants comprised nursing staff working part- (53.9%) or full-time (46.1%) in long-term care (63.7%), dementia special care (21.8%), or short-term care units (14.5%). The majority were women (91.0%), aged 16 to 75 years (M = 41.3, SD = 14.0); professional occupation included RNs/social educators (29.3%), LPNs (42.6%), and nursing assistants lacking formal health education (28.1%).

5.2 Paper I

Botngård, Anja; Eide, Arne Henning; Mosqueda, Laura & Malmedal, Wenche. (2020). Elder abuse in Norwegian nursing homes: a cross-sectional exploratory study. *BMC Health Services Research, 20*(9), 1-12.

This study aimed to estimate the prevalence of all types of observed and perpetrated SRA in Norwegian nursing homes and examine demographic differences (age, gender, education) between staff who perpetrated acts of abuse and those who did not. Overall, 76% of nursing staff reported having observed at least one incident of abuse committed by other members of staff, and 60.3% admitted that they had perpetrated at least one incident of abuse toward residents during the previous year. The annual prevalence of the subtypes of observed/perpetrated abuse is presented in Table 3.

Table 3. Annual Prevalence of Subtypes of Observed/Perpetrated SRA

	Psychological	Physical	Financial/material	Sexual	Neglect
Observed	62.4%	23.2%	2.1%	1.6%	57.8%
Perpetrated	40.5%	9.6%	1.1%	0.4%	46.9%

The most frequently *observed* acts of neglect by staff were neglecting oral care (35.4%), ignoring residents (35.1%), and delaying care (29.3%). Of psychological abuse, yelling was most prevalent (48.7%), followed by arguing with (36.8%) and making critical remarks to (21.8%) residents. Regarding physical abuse, the most frequent acts were pushing, grabbing, or pinching residents (12.9%), behaving aggressively toward residents (8.4%), and deliberately delaying giving medications (4.5%). The most prevalent items of financial/material and sexual abuse were destroying things belonging to residents (0.8%) and unwelcome discussion of sexual activity with residents (1.1%).

The most frequently *perpetrated* acts of neglect by staff were neglecting oral care (30.5%), ignoring residents (25.3%), and delaying care (19.5%). Of psychological abuse, most staff admitted yelling at (27.1%), arguing with (21.4%), and making critical remarks to (9.8%) residents. Regarding physical abuse, staff admitted pushing, grabbing, or pinching residents (5.8%), deliberately delaying giving medications (2.8%), and behaving aggressively toward residents (2.0%) The most prevalent items of financial/material and sexual abuse were destroying things belonging to residents (0.7%) and unwelcome discussion of sexual activity with residents (0.3%). Male staff reported more acts of physical abuse, while female staff reported more acts of neglect. Higher education of staff was associated with higher rates of self-reported psychological abuse, physical abuse, and neglect.

Overall, we found SRA to be a relatively common phenomenon in Norwegian nursing homes. Future studies should further explore the underlying risk factors of SRA in nursing homes, including nursing staff's gender, age, and education in regression models.

5.3 Paper II

Botngård, Anja; Eide, Arne Henning; Mosqueda, Laura & Malmedal, Wenche. (2020). Resident-to-resident aggression in Norwegian nursing homes: a cross-sectional exploratory study. *BMC Geriatrics, 20*(222), 1-10.

This study examined the prevalence of RRA in Norwegian nursing homes and examined differences in facility characteristics (size, location, type of units) between nursing homes with high and low occurrences of RRA. Overall, 88.8% of the nursing staff had observed one or more incidents of RRA during the previous year, with 88.0% observing verbal aggression, 69.4% physical aggression, 24.8% material aggression, and 18.6% sexual aggression.

The most frequently reported acts of verbal aggression were residents arguing (79.1%), yelling (74.7%), and making nasty remarks (69.0%); the most reported physical acts were residents behaving aggressively toward (57.4%), bullying (46.8%), and pushing, grabbing or pinching (46.1%) other residents. The most prevalent acts of material aggression were stealing (21.3%) and destroying (10.1%) other residents' possessions; the most prevalent acts of sexual aggression were unwelcome touching (13.5%) and unwelcome discussion of sexual activity (11.5%). Furthermore, 0.61% of staff observed incidents of penetration (e.g., finger), and 0.25% had observed rape. Nursing staff working in dementia special care units, larger nursing homes, and those located in suburban/urban municipalities reported more incidents of RRA than in short- and long-term units, small institutions, or those in rural municipalities.

Overall, we found a high occurrence of all types of RRA in Norwegian nursing homes. Future studies should further explore the underlying risk factors of RRA in nursing homes and include nursing home size, location, and units in regression models.

5.4 Paper III

Botngård, Anja; Eide, Arne Henning; Mosqueda, Laura; Blekken, Lene & Malmedal, Wenche. (2021) Factors associated with staff-to-resident abuse in Norwegian nursing homes: a cross-sectional exploratory study. *BMC Health Services Research, 21*(244), 1-20.

Using a multilevel hierarchical approach, this study examined individual (staff), relational (staff-resident), and institutional characteristics associated with three types of perpetrated SRA (psychological, physical, neglect) in Norwegian nursing homes.

Individual staff factors found to be associated with all three types of abuse were 1) being an RN/social educator (OR 1.77–2.49) or LPN (OR 1.64–1.92), 2) reporting symptoms of psychological distress (OR 1.44–1.46), 3) intention to leave the job (OR 1.35–1.40) and 4) reporting poor attitudes toward people with dementia (OR 1.02–1.15). Also, staff who reported poorer quality of childhood were more likely to perpetrate neglect (OR 1.14). Relational factors, such as care-related conflicts (OR 1.97–2.33) and resident aggression (OR 1.36–2.09), were associated with all three types of abuse. Of institutional factors, lack of support from managers was associated with perpetrating psychological abuse (OR 1.56). The ICCs of all three abuse models were < 7%, indicating a small variance *between* the Norwegian nursing homes in the study.

Overall, we found several predictors of SRA on different levels of the ecological model, which underlines the importance of using a multidimensional approach to identify risk factors of elder abuse in nursing homes. Future studies should explore the underlying mechanisms and causes and target the multifaceted nature of risk factors when designing preventive interventions.

5.5 Paper IV (In Progress)

Relative-to-resident Abuse in Norwegian Nursing Homes

This study aims to estimate the prevalence of relative-to-resident abuse in Norwegian nursing homes. Overall, the total proportion of nursing staff who had observed at least one incident of relative-to-resident abuse during the previous year was 45.6% (1,530/3,359). Among the subtypes, 44.8% (1,557/3,473) of staff had observed psychological abuse, 8.4% (299/3,542) had observed physical abuse, 2.7% (95/3,591) had observed financial/material abuse, and 0.7% (25/3,585) had observed sexual abuse at least once during the previous year. The most frequently reported acts of psychological abuse were relatives yelling (28.1%), arguing (27.9%), and making critical remarks (18.8%). The most reported acts of physical abuse were relatives bullying (5.7%), behaving aggressively (4.4%), and pushing, grabbing, or pinching (3.2%) residents. The most prevalent act of financial/material abuse were relatives signing documents without permission (2.1%), while the most prevalent act of sexual abuse was unwelcome touching (0.4%).

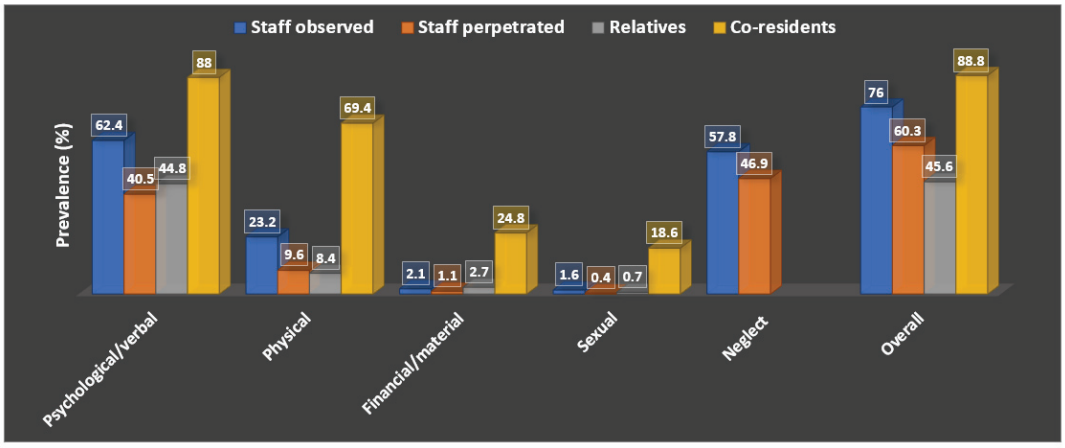

Figure 5. Overall Prevalence of Elder Abuse in Norwegian Nursing Homes

6.0 Discussion

6.1 Summary of Primary Findings

The overall goal of this thesis is to contribute to a better understanding of the extent, nature, and risk factors of elder abuse in Norwegian nursing homes. Altogether, the findings demonstrate that various types of elder abuse are prevalent, with risk factors at the individual, relational, and institutional levels revealing a complex, multifaceted phenomenon.

In brief, the primary findings are as follows:

- ✓ About 76% of the nursing staff had observed colleagues, and 60% of staff admitted to perpetrating at least one act of psychological, physical, financial/material, sexual abuse, or neglect toward residents in the past year, with acts of neglect and psychological abuse the most reported (Paper I).

- ✓ About 89% of the nursing staff had observed at least one act of verbal, physical, material, or sexual aggression between nursing home residents in the past year, with acts of a verbal or physical nature the most reported. Nursing staff working in dementia special care units, larger nursing homes, and nursing homes located in suburban/urban municipalities reported more acts of aggression (Paper II).

- ✓ Factors on different levels of the ecological model were found to be associated with a higher prevalence of SRA: (individual staff) being an RN/social educator or LPN, psychological distress, intention to leave their job, poor attitudes toward people with dementia, and poor quality of own childhood; (relational) care-related conflicts and resident aggression toward staff; and (institutional) lack of support from a manager (Paper III).

- ✓ About 46% of the nursing staff had observed at least one act of psychological, physical, financial/material, or sexual abuse toward residents perpetrated by relatives in the past year, with acts of a verbal or physical nature reported most (Paper IV, in progress).

To illustrate these findings, a prototype of a kaleidoscope is constructed to illustrate the various types of elder abuse that may occur in nursing homes, either independently or simultaneously (polyvictimization), with the individual, relational, institutional, and societal levels nested within each other (Figure 6). In this study, three types of elder abuse were found prevalent (RRA, SRA, and relative-to-resident abuse); however, the study provided no evidence if the abuse occurred simultaneously. The triangles in the kaleidoscope represent the various risk factors at the individual (SRA), relational (SRA), and institutional level (SRA and RRA) found associated with elder abuse in Norwegian nursing homes. The study provides no information about risk factors at the societal level or factors associated with relative-to-resident abuse. The rotation of a kaleidoscope causes motion of the materials, creating an ever-changing view; this may illustrate the continually shifting (e.g., time; chrono-level), multifaceted, and complex nature of elder abuse in nursing homes.

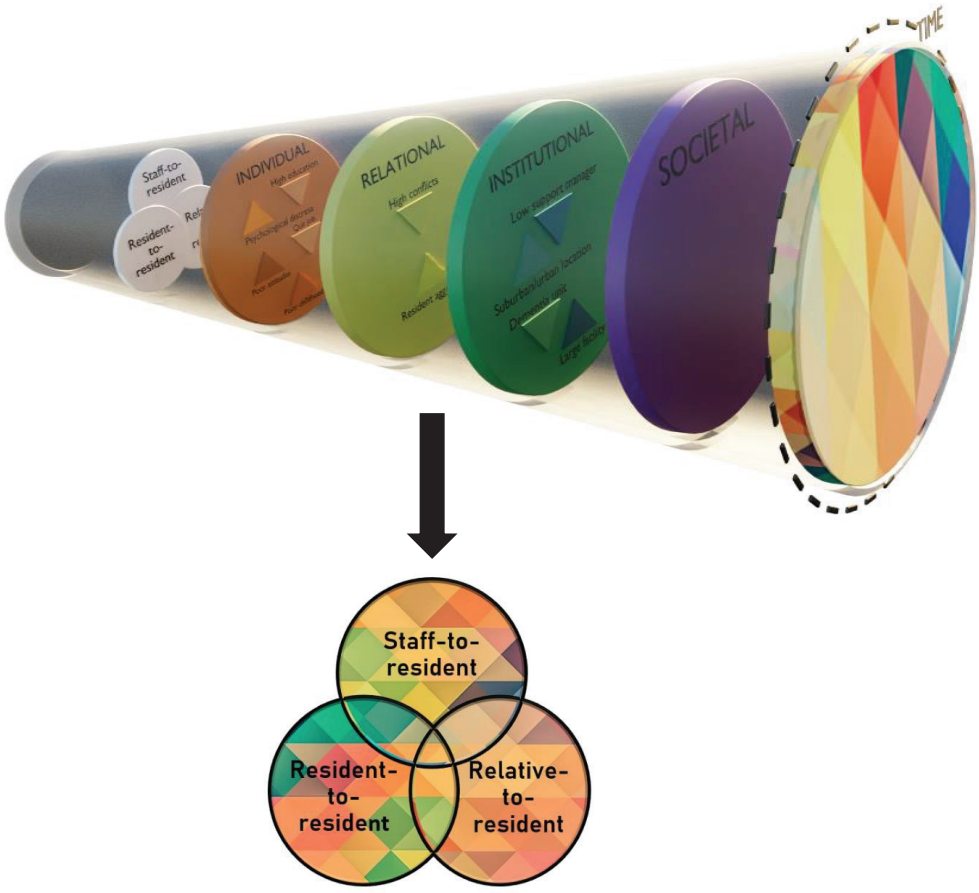

Figure 6. The Multifaceted Kaleidoscope of Elder Abuse in Nursing Homes

6.2 Interpretation of Primary Findings

In the next section, the magnitude of elder abuse in Norwegian nursing homes is interpreted and compared to existing evidence in the area, but considering the diversities in study methodologies, the meta-analysis by Yon et al. (2019) is primarily used as a comparison on the prevalence of SRA. The prevalence of RRA and relative-to-resident abuse are compared to the few existing studies. Concerning risk factors, the primary focus is on SRA, with some attention to RRA and relative-to-resident abuse.

6.2.1 The Magnitude of Elder Abuse in Nursing Homes

This study demonstrates that approximately two-thirds of staff had perpetrated SRA in nursing homes, consistent with the pooled estimates in the meta-analysis (Yon et al., 2019). Concerning the subtypes of abuse, a slightly higher proportion of staff in the current study admitted psychological abuse than the pooled estimate in the meta-analysis, but of physical and sexual abuse, the rates were nearly the same (Yon et al., 2019). The meta-analysis did not include enough studies to calculate a pooled estimate of financial/material abuse, but when compared to other studies, the estimate in the current study was slightly higher than the national study of elder abuse in Ireland (Drennan et al., 2012) but slightly lower than rates reported in the US (Harris & Benson, 1999) and considerably lower than in Croatian nursing homes (Neuberg et al., 2017). The primary difference between the current study and the meta-analysis was the prevalence of neglect, where almost half of the nursing staff admitted to perpetrating misconduct in the current study, compared to the pooled estimate of 12% in the meta-analysis (Yon et al., 2019). This inconsistency may result from differing conceptualizations and measurement instruments, but it may also reflect how truthfully nursing staff respond in surveys; compared to the other subtypes of SRA, acts of neglect are often considered systemic failures, rather than individual responsibilities (Reader & Gillespie, 2013). Whistleblowing is a process wherein people disclose practices that are believed to be immoral, illegal, or illegitimate to persons or systems that may be able to make a change (Jackson et al., 2014), but several studies have reported that healthcare staff fear disclosing misconduct due to the risk of retaliation and adverse repercussions (Hawes & Kimbell, 2010; Jackson et al., 2014). One may speculate whether nursing staff in the current study responded more honestly, as Norwegian citizens are known to have high institutional trust due to their perceptions of both a fair political system and a well-functioning judicial system (Kleven, 2016), and health professionals are seldom personally accused of acts of neglect. In addition,

the labor market in Norway is perceived to have high security compared to many other countries in the world (Randstad Workmonitor, 2013).

Almost nine out of ten nursing staff had observed incidents of RRA over a single year, and the prevalence was high in many subtypes of aggression. High prevalence was also found in the survey of nursing staff in US nursing homes, wherein Castle (2012b) concluded that RRA was so common that it most likely affected the quality of care, quality of life, and safety of residents. A recent study in German nursing homes also reported that only 8.3% of all nursing staff had *not* observed any incidents of RRA (Goergen, 2020). In the current study, almost half of the nursing staff had observed at least one incident of relative-to-resident abuse, and this is the first large study estimating the prevalence of this phenomenon in nursing homes. In community settings, relatives often provide care to family members, which is sometimes perceived as a high burden, overwhelming and stressful (Black & Almeida, 2004), contributing to an increased risk of elder abuse (Storey, 2020). In most countries, relatives have no legal obligation for the provision of care of family members in nursing homes; nevertheless, several studies have documented that relatives continue to provide emotional, instrumental, and personal care after admission, and this is most often related to challenges concerning understaffing and high workload in the nursing home (Puurveen et al., 2018). In Norway, a national study examined the occurrence of informal care and volunteering in long-term care and found that about 20% of the Norwegian population provided help to people with special care needs including friends, neighbors, and families, but only 2% of the population engaged in unpaid care work in public institutions including nursing homes (Skinner et al., 2020).

In long-term care settings, research is not always straightforward, due to various factors related to both staff and residents (Lam et al., 2018). Even though there are limitations to using self-reports, surveys of staff have been considered the most feasible for measuring the extent of elder abuse in nursing homes, due to staff's regular contact with residents (Pillemer & Moore, 1989). Many residents are considered too frail to participate, relatives are only present for a short period, the attendance of an observer would inhibit abusive behaviors (Pillemer & Moore, 1989), and only the most serious incidents of injuries and neglect are registered in deviation systems or other registries. It has, however, been discussed whether camera devices could capture the true prevalence of elder abuse in nursing homes, and some countries have passed laws that permit private individuals to use cameras in residents' private rooms (Berridge et al., 2019). However, nursing home surveillance has significant legal and

ethical implications, including issues of privacy concerns and consent of residents and fellow residents (Fisk & Florez-Revuelta, 2016). Moreover, surveillance may have a negative impact among nursing staff in terms of its potential to offend, stress, intimidate, demoralize, add excessive job demands, and contribute to a lack of confidence in the nursing staff (Berridge et al., 2019). Using residents in elder abuse research is also debated, due to the same issues of legal and ethical consent (Lam et al., 2018), and residents may also fear retaliation when disclosing acts of misconduct. This was reported by Buzgova and Ivanova (2011), where one-third of nursing home residents responded that there was not a single staff member whom they could fully trust. Interestingly, the meta-analysis by Yon et al. (2019) showed that studies using residents as respondents found an even higher prevalence of abuse than in the self-reports by nursing staff, which indicates that the use of residents to measure the extent of elder abuse in nursing homes should not be undervalued.

Individual Risk Factors

As the current study demonstrates, multiple risk factors exist at the individual, relational, and institutional levels, confirming the multifaceted and complex nature of elder abuse in nursing homes also reported in other studies (Kamavarapu et al., 2017; McDonald et al., 2012; Mogaka et al., 2020; Wang et al., 2015). Concerning staff demographics, studies have reported that more male than female staff perpetrate elder abuse (Blumenfeld Arens et al., 2017; Drennan et al., 2012; Kamavarapu et al., 2017), and in Paper I and Paper III, some gender differences were evident, but this finding is not easily explained and needs to be further explored. Health education was, however, significantly associated with a higher prevalence of SRA in both papers, and this was also reported in the Norwegian study by Malmedal et al. (2014). This finding may be related to health professionals' training, knowledge, and critical thinking ability, or that health educated staff hold more permanent and full-time positions than do nursing assistants and thus may be more prone to report misconduct that could lead to changes in the system. Education and geriatric training are considered important factors to prevent elder abuse in nursing homes, and many intervention studies are designed to improve staff knowledge (Touza & Prado, 2019); thus, this finding should gain more attention in future studies.

The multilevel regression analysis (Paper III) revealed that staff's psychological distress, intention to leave their job and poor attitudes toward persons with dementia increased the likelihood of perpetrating SRA, and these are all factors reported in other studies (Drennan et al., 2012; Kamavarapu et al. 2017). Concerning psychological distress, other studies have

focused more on staff's symptoms of burnout and emotional exhaustion and found these to be strong risk factors of elder abuse (Buzgova & Ivanova, 2011; Drennan et al., 2012; Goergen, 2004; Natan et al., 2010; Pillemer & Bachman-Prehn, 1991). The current study also measured the staff's feelings of exhaustion, but no associations with perpetrating abuse were evident, which is surprising considering the reported strength of this factor, and one may speculate whether this inconsistency is because exhaustion was measured with one item only, where other studies have used more comprehensive burnout instruments such as the Maslach Burnout Inventory (Drennan et al., 2012; Natan et al., 2010; Pillemer & Bachman-Prehn, 1991). This may also be the case for the single item used to measure job satisfaction, which in this study was not found to be a risk factor for elder abuse. Indeed, the intention to leave their job was found to be a risk factor, which may also be an indicator of dissatisfaction at work (Pillemer & Moore, 1989). In 2016, Gautun et al. surveyed almost 5,000 registered nurses in Norwegian nursing homes and home care, where about half of participants considered quitting their job; the reasons they mentioned included high workload (82%), insufficient time to provide adequate quality care (77%), too few registered nurses at work (67%), poor management (53%), limited career opportunities (47%), residents experiencing conditions worthy of criticism (44%), not receiving a full-time position (21%), and poor relationships with coworkers (19%).

Concerning staff's attitudes toward persons with dementia, other studies have only used a single item to measure attitudes and found significant associations (Drennan et al., 2012; Pillemer & Moore, 1989), where the current study used eight items. One may discuss whether poor attitudes towards older people should be included as an individual staff factor, an institutional (cultural) factor, or a broader societal factor affected by the community or country in which the institution is situated. Nursing staff bring their personal experiences and beliefs into nursing homes, but institutions, or even units within institutions, may comprise a deprived culture where older people are marginalized and devalued, and abusive acts are tolerated and condoned (Sethi et al., 2011).

One factor that has not been explored in the context of a nursing home is the nursing staff's reporting of poor quality of their childhood, which was found related to acts of neglect in the current study. It is well documented that adverse childhood experiences are associated with an array of mental and physical health issues in later life (Hailes et al., 2019), and experiencing a poor-quality childhood may be related to psychological distress, but after controlling for other factors, staff's poor childhood made a unique contribution as a risk

factor of neglect. Nevertheless, one may not fully understand the mechanism and causal effects of adverse childhood experiences related to SRA, and these predictors should receive more attention in future studies. Quality of childhood may be considered a static factor, while the other three are dynamic, and Storey (2020) argues that both static and dynamic factors may predict future abuse but that dynamic factors are more critical in risk management, as they are more effective targets for intervention.

Relational Risk Factors

As many other studies have reported, the current study found that resident aggression directed toward staff is a risk factor of the perpetration of SRA (Drennan et al., 2012; Kamavarapu et al., 2017; Malmedal et al., 2014). Nursing is a profession that deals with a high proportion of stress and burden due to time constraints, but verbal and physical assaults by residents have been perceived as the most difficult, psychologically distressing, and potentially dangerous aspects of work (Lachs et al., 2013). Nevertheless, resident aggression may not only exert deleterious effects on staff but may also cause reactive abuse of residents due to staff's frustration, potentially triggering a malicious circle of aggression and SRA (Lachs et al., 2013). Moreover, in the current study, the prevalence of RRA was high, and Schiamberg et al. (2015) reported that being exposed to RRA was a risk factor for being exposed to SRA. The findings in the current study also show that conflicts between residents and staff, such as residents' refusal to eat, bathe, or dress, increase the likelihood of staff perpetrating abuse, which is consistent with other studies (Drennan et al., 2012; Malmedal et al., 2014). Many incidents of aggression and conflicts between staff and residents occur during morning care (Enmarker et al., 2011), where activities, such as washing, dressing, continence care, and transfer assistance, often conducted by staff in a relatively short and hurried time, could stimulate pain and discomfort in residents, who may express this by becoming agitated and physical (Sloane et al., 2007). In these situations, some nursing staff react instinctively and retaliate verbally, physically, or by delaying care or giving minimum care (Lachs et al., 2013).

Institutional Risk Factors

Significantly more incidents of RRA were found in large, compared to small, urban/suburban, compared to rural, and dementia special care, compared to other units (Paper II), but these factors were not included in a multilevel regression analysis. In Paper III, two of the facility features (size and location) were included in the multilevel regression analysis of SRA but revealed no significant effects.

The only institutional factor found related to SRA was the lack of support from a manager, a finding supported by Buzgova and Ivanova (2011). However, numerous work environment factors exist, including staffing and resources, job autonomy, leadership style, workplace conditions, procedures and routines, teamwork, and safety climate (Elo et al., 2000); the current study included only three dimensions. One may argue that some of the individual risk factors for staff could be considered institutional factors, due to the impact a work environment may have on individual employees. However, in this study, they were included as individual factors, but this does not undermine the importance of a healthy and safe work environment, as several studies show that a good environment may improve quality of care and nurse retention in nursing homes (Backman et al., 2017; Blumenfeld Arens et al., 2017; White et al., 2020; Zuniga et al., 2015). A study by Pickering et al. (2017) investigated how staff from they started working in a nursing home recognized, responded, and adapted to a "toxic" work environment; some learned and adapted to the toxic workplace and reconciled their expectations to be able to work there, while others could not adapt and left the workplace after a shorter or longer period.

The most interesting negative finding found in the current study was that high job demands did not contribute to the increased likelihood of staff perpetrating abuse. Studies have commonly reported that staff's high workload and time pressure are associated with decreased quality of care in nursing homes (Andela et al., 2018; Song et al., 2020), and a higher staff density is often perceived as the "salvation" of many problems in the healthcare sector. However, one must ask whether higher staff density is the solution to the complex phenomenon of elder abuse. Studies have suggested that there should be an adequate staff-to-resident ratio in nursing homes, but this is not only a matter of quantity: a high percentage of qualified healthcare staff may be more likely to prevent elder abuse than a high proportion of staff without training (Goergen, 2004; Havig et al., 2011). A Norwegian study by Paulsen et al. (2004) reported that high care quality in nursing homes was not related to high staff density but to various work environment factors, a competence-developing culture, and collaboration with other healthcare providers such as hospitals. The authors suggested that the most important tools for strengthening the quality of care in Norwegian nursing homes were to provide a) managers with better conditions to perform their leadership; b) managers with support and direct guidance to develop and maintain satisfying internal work processes; c) staff with better conditions to utilize and develop the professional resources within the institutions, and d) tools to build a stronger culture of competence (Paulsen et al., 2004).

Optimal staffing in the long-term care sector is under continuous debate, where some argue that this should be a fixed number where others consider it to vary between nursing homes (Gautun & Bratt, 2014). A greater focus should rather be on the intended and actual coverage of nursing staff within nursing homes. In Norway, nursing homes are organized differently, where the actual coverage of staff vary depending on whether students are present, managers participate in the direct care of residents, and care staff are used to serve other functions such as duties in the kitchen, sluice room, cleaning, and laundry, as well as the use of volunteers (Ågotnes, 2017). In addition, the actual coverage depends on managers abilities to cover for sickness absence, and this deviation between intended and actual coverage of staffing is a significant problem in many nursing homes, with high sickness absence and staff turnover reported as the most persistent issues of concern; in turn resulting in many shifts covered by less competent staff (Gautun, 2020). Gautun and Bratt (2014) found that trade union representatives for registered nurses recognized Norwegian nursing homes to be optimally staffed if all staff members were present at work, and the authors concluded that to cover all shifts with competent staff, the expected sick leave should be encountered both at the municipal level and when the rotation plan of the nursing staff was created by the managers. In another study, Gautun and Bratt (2016) found that Norwegian nursing home managers reported tight financial frameworks, recruitment problems, poorly developed reporting systems, and poor organization of services as the primary reasons that high sickness absence led to many shifts covered by personnel with lower competence or without health education or not covered at all.

6.2.2 Who is to Blame?

Historically, elder abuse has been considered isolated events often perpetrated by individuals labeled as “bad apples”, “failed individuals”, or “wicked people” who intentionally or negligently fail in their provision of care (Burns et al., 2013). This explanation has, however, been challenged for drawing attention away from investigating organizational and system structures in which abusive events occur (Hyde et al., 2014). Some researchers have used the term *institutional abuse,* which challenges the concept that abuse is perpetrated by a few wicked individuals and suggests that staff and residents may be subjected to and limited by institutional practices that restrict the potential of care (Burns et al., 2013; McDonald et al., 2012; Penhale, 2014). Penhale (2014) proposed that institutional abuse is perceived at three

levels: 1) abuse between individuals within the institutional setting; 2) abuse ascending due to the institutional regime; and 3) abuse arising at a system level (broader social structure).

Institutional abuse has somewhat dramatically been described as "the violent cancer in the world of caring" (Bennett et al., 1997, p. 2), and it has been related to Goffman's work and concept of a *total institution,* referring to a "place of residence and work where a large number of like-situated individuals, cut off from the wider society for an appreciable period of time, together lead an enclosed, formally administered round of life" (Goffman, 1961, p. xiii). Total institutions are characterized as having the same everyday routines with a distance between those who live and work, individual assets often being replaced by institutional effects, and employees often wearing uniforms, which causes a visible separation from the individuals who live in the institutions (Goffman, 1961). The institution is only *total* for individuals who live in the institution, not for the employees who leave the institution at the end of their shift (Goffman, 1961). In a total institution, certain norms and rules exist to which individuals must adapt that greatly impact their lives and removes their opportunity for self-determination (Goffman, 1961). It is within this context of depersonalization that elder abuse may occur, in a setting where the predominant perspective is that vulnerable older adults are "not like us", and abuse becomes more understandable, if not defensible (Penhale, 2014; Wardhaugh & Wilding, 1993).

Some researchers have explored the nature of care, system, and institutional culture with a total institution approach. An ethnographic study by sociologist Jaber Gubrium (1997) documented nursing home residents "Living and Dying at Murray Manor." Gubrium described the institutional culture as a *bed-and-body work,* wherein staff solely focused on bodily needs or making residents' beds, and at a certain point, the tasks were accomplished, and any interruption or obstacles were considered frustrating and annoying (Gubrium, 1997). Another study by Paterniti (2000) described how staff recognized residents to have a deficiency in activities of daily living, and according to these deficiencies, staff structured their work routine and schedules. Residents who increased work burden or needed extra time were considered "time consumers", "feeders", or "troublesome" (Paterniti, 2000). More recently, Buzgova and Ivanova (2011) found that SRA in nursing homes was closely related to the violation of the basic ethical principles of respect of the residents. As one employee responded, "I was surprised by the fact that there were so many clients with severe dementia or Alzheimer's disease in our institution … These clients always wander about or run away; they do not react to instructions or exhortation and it takes us so much effort and time we

could otherwise devote to more meaningful and stimulating activities" (Buzgova & Ivanova, 2011, p. 70). Depersonalization tendencies were early described by Tom Kitwood, who introduced the concepts of *personhood*, *malignant social psychology,* and *positive person work* in dementia care, where *personhood* was described as the recognition of being seen as a person regardless of physical or cognitive disabilities; *malignant social psychology* referred to people's behaviors that undermined this personhood, and *positive person work* referred to the contrast of malignancy; enhancing personhood and wellbeing (Kitwood, 1997; Mitchell & Agnelli, 2015). Kitwood (1997) described many threats to personhood in institutional settings, but he also acknowledged that depersonalizing tendencies often occurred due to a lack of education among healthcare professionals (Mitchell & Agnelli, 2015), and "the term malignant does not, however, imply evil intent on the part of caregivers; most of their work is done with kindness and good intent. The malignancy is part of our cultural inheritance" (Kitwood, 1997, p. 230).

Although few institutions today fit into Goffman's original definition of a total institution, the basic tenets of institutionalization can be instructive when exploring elder abuse within institutional settings (Penhale, 2014), but there is also a need to explore wider societal norms and believes in the environment where the institutions are situated. Mysyuk et al. (2016) interviewed older persons in residential care facilities on how they became victims of abuse and found that some of the causes were related to their perceptions of being useless, unnecessary, too old, and neglected by the society, and they perceived that changes in societal norms and the negative attitudes of old age had created cultures where abuse was accepted and permitted. The concept of *ageism* may be divided into *individual ageism,* referring to the impact of culture-based negative age stereotypes and negative self-perceptions of aging on the health of older persons, and *structural ageism,* describing the policies, procedures, and practices of institutions that discriminate against older adults, including the age-based actions of staff who work in these institutions (Chang et al., 2020). Both individual and structural ageist attitudes may contribute to non-recognition and non-identification of elder abuse, as well as a passive acceptance of the mistreatment of older persons (Phelan, 2020).

6.2.3 Elder Abuse in Nursing Homes – A Wicked Problem?

In this study, polyvictimization was not specifically measured, but considering the high prevalence, the knowledge that exposure to one type of abuse may exacerbate the risk of

experiencing other types, and that the same risk factors are often associated with several types of abuse (Teaster, 2017), it is not imprudent to consider polyvictimization an issue of concern in Norwegian nursing homes. In 2017, Teaster illustrated this complexity of elder abuse as in looking into a kaleidoscope, where at first glance a situation of abuse, such as neglect and the associated risk factors, may be observed, but as the lens is turned, myriad various types of abuse and factors may also be revealed. Scholars and practitioners tend to isolate these situations and develop specific intervention strategies, but Teaster (2017) argues that this is only an artificial distinction and that the problem is more *wicked,* with issues running the gamut from the micro to macro level, requiring a "committed, interdisciplinary approach engaging the brightest minds possible" (Teaster, 2017, p. 289).

The concept of a *wicked problem* dates back to the system theory and policy planning literature in the 1960s, where the first definition of a wicked problem was issued as "a class of social system problems which are ill-formulated, where the information is confusing, where many clients and decision-makers hold conflicting values, and where the ramifications in the whole system are thoroughly confusing" (Churchman, 1967, p. B-141). The subsequent paper by Rittel and Webber (1973) described emerging policy problems as wicked and elaborated its notion as "no solutions in the sense of definitive and objective answers" (p. 155). Since then, the existence of wicked problems has been rooted in many fields, including public administration, education, mental healthcare, climate change, terrorism, aging populations (Termeer et al., 2019), child abuse (Devaney & Spratt, 2009), and more recently the COVID-19 pandemic (Auld et al., 2020). Characteristics of a wicked problem include a) difficulty in defining and a lack of definitive formulation; b) no clear stopping point; c) solutions being not true-or-false but good or bad; d) no immediate or ultimate test for solutions existing; e) all attempts to solutions having effects that may not be reversible; f) having no clear solution; g) every problem being essentially unique; h) every problem potentially being a symptom of another problem; i) multiple explanations for the problem existing, and j) the planner having no right or wrong answer (Peters, 2017). In contrast, a *tame* problem is characterized as a) being relatively well-defined and stable; b) having a definite stopping point where the problem is solved; c) containing solutions that may be evaluated as right or wrong; d) belonging to a class of similar problems that may be solved similarly; and e) having solutions that can be tried and abandoned (Rittel & Webber, 1973). Since Rittel and Webber's influential work on wicked problems, the underlying understanding has advanced, and several papers have disentangled the concept and

transcended the dichotomous framing of tame versus wicked (Termeer et al., 2019), for example, arguing that wickedness could be a matter of degree (Head & Alford, 2015).

Elder abuse in institutional settings has for many decades been considered multifaceted, complex, and difficult to define since different stakeholders perceive the problem differently, the problem has no definitive solution, a wide range of risk factors exist representing unique problems that may have several solutions, attempts to deal with one problem may result in the appearance of other unexpected problems, and the researchers or practitioners have no right or wrong answer to the phenomenon. At the same time, some problems related to the quality of care in nursing homes may be easily solved with no subsequent enhancement of other problems, and some nursing homes are very well organized and may not recognize themselves through a lens of wickedness.

Burns et al. (2013) used a wicked problem analysis to explore elder abuse in a residential care home for older persons referred to as Honeysuckle Place. Honeysuckle Place had taken part in a local-authority supported project to improve residents' mealtimes and enhance nutrition needs, and structural and cosmetic changes were made to the dining room to resemble a commercial restaurant. Consequently, all residents could see the menu, all meals were freshly prepared, serving time was extended, and staff helped with feeding as needed. Overall, the person-centered meal improved residents' nutrition but also created a better work environment for staff. However, these changes in arrangements led to other problems. The dining room was on a different floor, and it was time-consuming for staff to move all residents. The dining area had fewer toilet facilities, resulting in residents rushing mealtimes to get in the queue for the toilet, and delays often resulted in soiling, with residents needing to wait to be changed. This toilet problem was, however, perceived differently by staff, managers, and residents, and although the managers tried different structural arrangements to solve the problem, they reached no consensus, and instead, conflicting views escalated. The monitoring of residents' nutrition and the provision of menus and well-presented meals were, however, all practices given a positive value in the local-authorities' inspection process, and as a standalone issue, this restaurant-service provided a visible representation of good quality care, even though it had created a secondary problem regarding accessing toilets (Burns et al., 2013). This study shows that rather than being intentionally wicked, nursing home staff may work hard to improve care in one area but fail to provide adequate care in others (Burns et al., 2013).

Burns et al. (2013) argue that when faced with wicked problems in nursing homes, practitioners, researchers, and decision-makers tempt to solve problems as if they were tame because each facet appears reducible to a certain issue or solution but that reducing such complex issues into smaller fragmented elements may only diminish the larger scope of the problems (Rittel & Webber, 1973). Moreover, Burns et al. (2013) argue that framing abuse as a wicked problem could draw more attention to how organizational factors and recurrent problems interconnect in the provision of care; a wicked problem formulation demands a collaborative approach, where stakeholders, researchers, and decision-makers are more involved when the problem is identified and solutions developed, which requires continuous improvements that involve actively seeking related problems and considering the totality of care, even when dealing with isolated problems (Burns et al., 2013). However, one may argue that when defining elder abuse as a wicked and unresolvable problem, one may enhance the discouraging and frustrating conditions many health professionals already experience in nursing homes. One may instead argue that elder abuse in nursing homes has some wicked characteristics (Burns et al., 201). Noordegraf et al. (2019) note that this wickedness theory does not contribute to the ability to manage wicked problems in the field, because many discussions of wickedness only favor the holistic or systemic approach, and this view may contribute to a larger, not a smaller, problem. Also, a wicked problem itself, as a buzzword, remains quite abstract in terms of implications, since this may identify a problem but not how and by whom it should be solved (Noordegraf et al., 2019).

6.2.4 Directions of Theories

No single cause of elder abuse in nursing homes exists; myriad mechanisms and factors may increase the risk of abuse (Roberto & Teaster, 2017). The ecological framework is one of the most utilized to identify risk factors of elder abuse, but the framework does not provide any explanation of *why* elder abuse occurs. To explore causal dynamics, this framework may, however, be used in conjunction with other theories to support or supplement the identified risk factors at the various levels. For example, to understand individual risk factors, the intrapersonal theory may be applied, such as Bandura's social learning theory, which suggests that victims of child abuse learn and adopt patterns of delinquent behavior through processes of imitation and modeling (Currie & Tekin, 2012). In the current study, an association was found between staff members' poor quality of childhood and their perpetrating acts of elder abuse. Various interpersonal theories may be applied to understand

relational factors, such as the caregiver stress theory, which suggests that frustrated and overwhelmed caregivers perpetrate abuse. In this study, staff who reported feelings of psychological distress and intention to leave their job reported more acts of elder abuse. Sociocultural theories may be applied to understand the power dynamics between individuals in a broader institutional environment. McCormack and McCance (2010) address *power* as an important issue in nursing and the relationships between residents and nursing staff, and Penhale (2014) also considers power relations a central element in many abusive situations and argues that these dynamics should be considered within every setting.

Concerning RRA, previous research has also used an ecological perspective to guide the analysis of risk factors (Pillemer et al., 2012; Schiamberg et al., 2015). A recent study by Burnes, Syed, et al. (2020) used an ecological and need-driven dementia-compromised behavior perspective and proposed two process models to understand when and why incidents of RRA occurred in dementia care units. The models were organized around residents' *responsive behaviors* and *unmet needs* and highlighted the dynamic and interactive nature that involved actions and reactions affected by limitations in their cognitive processing (Burnes, Syed, et al., 2020). Regarding relative-to-resident abuse, a lack of understanding also exists of the causal dynamics, but in community settings, mistreatment has commonly been related to the context of caregiving, stress, and burden (Storey, 2020). Caregiving theories related to abuse in community settings may, however, not be directly transferable to the nursing home context, where relatives have no formal caregiving responsibilities; thus, one may look to other factors dominant in, for example, the field of intimate partner violence, including intimate terrorism or coercive control, and situational couple violence (Pickering & Phillips, 2014).

Although the ecological model has been the most widely used to guide the analysis of elder abuse in nursing homes, it contains some weaknesses. Firstly, the ecological model illustrates the complexity of factors at many levels of the environment but fails to provide any information of what and how many factors should be included or excluded in the analysis (National Research Council, 2014), and it may not be feasible to include all factors at each level (Sallis et al., 2008). Secondly, the model does not specify the factors expected to be most influential (e.g., if institutional than individual factors provide stronger influence). Thirdly, the model visualizes the interplay and nested levels, but it is presumably not possible to intervene at one level without intervening at the other levels. Finally, concerning SRA, the ecological model is very much based on actions and reactions related to caregiving (Pickering

& Phillips, 2014), which may not be relevant to acts of a financial or sexual nature. Concerning financial abuse, one may instead look to the field of criminology and examine the relevance of these theories related to elder financial abuse (Goergen & Beaulieu, 2010). Regarding sexual abuse, one may draw on the multifactor theories of sexual offending behaviors referring to developmental experiences, biological processes, cultural norms, and personality traits (Faupel, 2015).

Another disadvantage with studies using ecological models to identify risk factors of elder abuse is that researchers tend to use various models and terminology. Since the seminal work by Bronfenbrenner, studies have used various types of models, described as *ecological models* (Krug et al., 2002; Schiamberg, 2000, 2011), *social-ecological models* (CDC, n.d.), and *socio-ecological models* (Phelan, 2020) comprising various *systems* (Schiamberg, 2000, 2011), *levels* or *layers* (CDC, n.d.; Krug et al., 2002). This may be confusing for both researchers and practitioners trying to interpret the theoretical framework. In institutional settings, Schiamberg et al. (2011) proposed an applied ecological bifocal intergenerational model to identify risk factors of elder abuse, and this model is more like the initial model developed by Bronfenbrenner, with individual, relational, and institutional characteristics representing the microsystem. In the four-level model by WHO, these characteristics are separated into three distinct levels. In 2017, Roberto and Teaster proposed the contextual theory of elder abuse, which is built upon the four-level ecological model, wherein the levels are referred to as individual context, relational context, community context, and societal context. The contextual theory emphasizes that elder abuse is not just a family problem but rather an interplay of larger contextual issues, including *why* older persons are abused by trusted persons, as well as the target of abuse by others (Roberto & Teaster, 2017). This theory is still under development, and establishing its validity and reliability is crucial (Roberto & Teaster, 2017).

6.3 Methodological Considerations

6.3.1 Study Design

A cross-sectional study design, particularly a single-source, self-reported survey, despite being one of the most utilized research designs, is yet held in low esteem (Spector, 2019). Two concerns often arise when using a cross-sectional design: a) the presence of common method variance due to factors that act upon the construct and produce spurious relationships and factors that affect the measurement of a construct which creates a measurement bias and

b) the inability to draw causal inferences because all variables are assessed contemporaneously (Spector, 2019). Advantages of a cross-sectional survey design are that it is relatively cheap to conduct, is highly efficient in researcher and respondent time, may sufficiently address many questions and record exposures to many risk factors, and that one may investigate more than one outcome (Sedgwick, 2014; Spector, 2019). The results from a cross-sectional study may also inform the hypotheses for a more complex examination, such as a longitudinal cohort study (Sedgwick, 2014). In Norwegian nursing homes, over 80% of residents have cognitive impairments, some residents do not have relatives who could serve as proxies, deviation systems do not capture the magnitude of abusive acts, and surveillance cameras are forbidden; thus, a cross-sectional study design of nursing staff was chosen to capture the magnitude of elder abuse. Furthermore, a self-administered survey was preferred, as this is acknowledged to better elicit valid responses to sensitive questions than do interview-administered surveys (de Leeuw, 2005), which also tend to produce larger nonresponse rates than self-administered surveys (Groves & Peytcheva, 2008). In this sample of nursing home staff with varied access to electronic devices at work, a paper-based survey was considered more feasible and convenient than a web-based survey.

6.3.2 Precision (Lack of Random Error)

Random errors may affect the precision of an estimate; the opposite of a random error is *precision*, wherein an estimate with little random error is classified as precise and described with a narrow CI (Rothman, 2008). In epidemiological studies, random errors may have several mechanisms, but a major error is the selection of study population, often referred to as *sampling variation* or *sampling error* (Rothman, 2008). A common method to reduce random error or increase the precision of estimates in epidemiological studies is to enlarge the sample size, which may be calculated by conventional mathematical formulas (Rothman, 2008). The current study comprised one of the largest ever samples of nursing homes and nursing staff worldwide, measuring elder abuse in nursing homes, but this size was not calculated by a formula due to the few existing large-based studies and the diversity of measurement instruments used. Rothman (2008) argues that although statistical calculation of sample size may be aided by conventional formulas, the final choice of the study size should also incorporate unquantified practical constraints and implications.

Sampling design is an important component of the quality of epidemiological research, but this is not always adequately addressed when nursing homes are the unit of analysis (Fielding

et al., 2016). Two major categories of sampling methods exist: probability sampling and non-probability sampling (Tyrer & Heyman, 2016). When applying probability sampling, one may conduct a simple random sampling where the whole population is accessible, a stratified random sampling where the whole population is divided into strata (subgroups), or a multistage sampling where the population is divided into clusters and the individuals within these clusters are randomly sampled (Elfil & Negida, 2017). In the national survey of elder abuse in Ireland, all nursing homes were stratified into four geographical clusters, and the institutions were weighted by size before they were randomly drawn (Drennan et al., 2012). Other national studies have also used stratification sampling, often with nursing home size, location, and/or ownership as subgroups (Blumenfeld Arens et al., 2017; Fielding et al., 2016). As this study intended to include all nursing staff with and without health education, it was not possible to conduct a simple random sampling through, for example, trade union registers. Furthermore, the CRE did not contain information on nursing home sizes or geographical locations. Thus, after discussions with statisticians at Statistics Norway and NTNU, a multistage sampling was preferred. A disadvantage of multistage sampling is that units in the second stage may be more homogenous than units in the target population (Lewis-Beck et al., 2004). In Norway, all municipalities, nursing homes (private and public), and nursing staff are subject to the same strict national legislation and regulations; thus, there should be no large differences between Norwegian nursing homes. This may be supported by the low ICC measuring the variance of elder abuse prevalence *between* the different nursing homes in the current study. Other statistical techniques that may eliminate differences between sample and target populations are design weights and post-stratification weights, where design weights are used to correct for respondents who have an unequal probability to be selected (Kaminska, 2020). Post-stratification is a more sophisticated weighting that uses auxiliary information to reduce sampling error and possible nonresponse bias (Kaminska, 2020); thus, in the current study, no weights were computed.

6.3.3 Validity (Lack of Systematic Error)

Systematic errors are commonly referred to as biases, where the opposite of a bias is validity, and an estimate with little systematic error may be described as valid (Rothman, 2008). The validity of a study is often divided into internal and external validity, where *internal validity* refers to the validity of inferences within the study population where most violations may be classified into three categories: *selection bias, information bias*, and *confounding* (Rothman,

2008). *External validity*, or generalizability, refers to the inferences as they pertain to people in the target population (Rothman, 2008).

Selection Bias

Selection bias is a distortion that results from the procedure used to select study subjects and from factors that influence participation, where the relation between exposure and outcome may be different for study participants compared to those eligible for participation, including people who refuse to participate (Rothman, 2008). A common source of selection bias is participants' self-selection to a study (Rothman, 2008). In the current study, participation was voluntary, and some institutions declined to participate. These nursing homes did not differ from the rest of the sample concerning how they were run or located, but initially, more of the larger nursing homes rejected participation, and one could speculate whether more "problematic" institutions were less likely to accept the invitation. Another common type of selection bias in cross-sectional surveys is the nonresponse bias where the characteristics of non-responders vary from the responders (Wang & Cheng, 2020). In the current study, several factors may have caused nonresponse: a) the questionnaire contained items of sensitive and incriminating acts, and nursing staff chose not to participate due to social desirability not to report such behavior; b) nursing staff considered the questionnaire too extensive and time consuming; c) the staff were not informed or motivated to participate, and d) staff experienced no immediate benefits such as a direct monetary incentive. Assessing the characteristics of non-responders may identify selection bias. In this study, the demographic characteristics of participating nursing staff (gender, age, occupation) were fairly similar to the target population (National Directorate of Health, 2017; Skjøstad, et al., 2019). Another possible selection bias was the use of nursing home coordinators to administer the survey on site. However, the coordinators received detailed instruction on eligible units and nursing staff and how to conduct the data collection, and the doctoral candidate kept contact with all coordinators during the entire period.

Information Bias

Information bias in a study may occur when the variables are measured, collected, or interpreted inaccurately (Wang & Cheng, 2020). The prevalence and associated risk factors of elder abuse in the current study were based on observations and self-reports by staff, and the information was gathered with a retrospective approach, which may have introduced recall bias when nursing staff were asked to remember the exact number of incidents during the previous year (Spector, 2019). The annual prevalence of elder abuse has been the most

used reference period; a narrower period may not capture the incidents occurring in a long-term care setting. Higher prevalence rates were present when staff reported on colleagues' behaviors than what they admitted about themselves, which could be an indicator of underreporting of a result of staff observing and reporting the same incidents of abuse. Nursing staff may also have interpreted the survey instruction of "do not report acts justified in health care or treatment" differently; some may have failed to interpret their own or others' misconduct as abusive.

The effect of information bias depends on the type; if the information is gathered differently between participants (different misclassification), this may result in bias (Grimes & Schulz, 2002). By contrast, "noise in the system" or non-differential misclassification, due to an ambiguous measurement instrument, may cause an error in the data collection (Grimes & Schulz, 2002). In this study, under-or overreporting may have biased the results if most nursing staff misreported in the same direction, and previous literature does indicate that elder abuse is more likely prone to underreporting than overreporting (Pillemer et al., 2016). This may further affect associations of risk factors and the prevalence of elder abuse and lead to false-negative results (Rothman, 2008).

There exists no standardized abuse measurement instrument to measure the prevalence of elder abuse in nursing homes, and very few studies report psychometric properties of their study-specific instruments (Malmedal et al., 2020). Lang et al. (2014) argue that elder abuse is a latent concept that requests a formative compared to a reflective measurement approach, but in elder abuse research, most studies follow a reflective measurement concept, and very few studies have been conducted with a formative model (Lang et al., 2014). Indicators in a formative approach may not covary, in contrast to a reflective approach, which assumes that indicators (items) are exchangeable due to their intercorrelations (Lang et al., 2014); thus, internal consistency may only be computed on instruments that consist of effect indicators in a reflective model (Mokkink et al., 2010). The study by Lang et al. (2014) measured the prevalence of abuse among 2,880 home-dwelling older women in five European Union countries and improved the accuracy of a measurement instrument by using a formative approach. Elder abuse was operationalized by multiple indicators, whereby each indicator represented an abusive act, and the indicators were evaluated against its responsiveness (e.g., high missing values and low prevalence), face and concurrent validity, and reliability, with the performance of each indicator acting as a quality criterion for shortening the questionnaire (Lang et al., 2014).

The items measuring neglect and psychological staff abuse were correlated and showed acceptable Cronbach's alpha levels, but these were also the subtypes with the highest abuse prevalence rates. Concerning physical, sexual, and financial/material abuse, these had all low alpha coefficients, which may be caused by the low prevalence rates but also that these acts may represent a formative, rather than a reflective, measure; for example, if one of the acts of sexual abuse (e.g., inappropriate conversation) occurred, this does not assume that the more serious acts of sexual abuse (e.g., rape) occurred. However, both acts are indicators of a sexual offense. Moreover, concerning physical abuse, acts of medication abuse are different from acts of a physical nature; hence, both are considered physical abuse. Of RRA and relative-to-resident abuse, the same explanations may apply, where acts of verbal/psychological and physical nature (no medication abuse) were interrelated, where acts of sexual and material character were not.

Concerning the instruments measuring the independent variables, the ADQ had only been translated and not validated for the Norwegian context; thus, when used in the current study, the Cronbach's alpha levels were adequate. Furthermore, the modified version of the scale developed by Malmedal et al. (2014) had not been thoroughly validated, but when used in the current study, Cronbach's alpha levels were acceptable.

Confounding Factors

A confounding factor may be considered a confusion of effects, which may lead to an over-or underestimation, depending on the direction of the association (Rothman, 2008). Different methods exist to adjust for biases caused by confounders, such as stratification, restriction, and controlling in multivariable regression analysis (Rothman, 2008). However, the identification of potential confounding factors is reliant on previous knowledge in the field and the researcher's theoretical understanding of the phenomenon (Skog, 2004), and in this rather new research field on elder abuse, previously unidentified confounding factors may exist. In the current study, the ecological model was used as a theoretical framework to guide the identification of potential risk factors and confounders; this identification was based on previous empirical research in the field of elder abuse, but also in other fields such as domestic violence and occupational health. Multilevel regression modeling was used to adjust for potential confounders and to understand the unique associations between different factors at the individual, relational, and institutional levels and elder abuse in nursing homes.

External Validity

Epidemiological studies are designed to include subjects so that the sample is representative of the target population (Rothman, 2008). In this study, all Norwegian nursing homes registered in the CRE had the same statistical chance of being selected and > 70% of the initially invited nursing homes accepted to participate. Further, the response rate of 60.1% of nursing staff and demographic similarities between nursing staff in the study and the target population were deemed acceptable. Additionally, low ICC values on elder abuse prevalence when comparing nursing homes may suggest that the study population was representative of the target population. However, considering the methodological concerns with some of the measurement instruments used, and bearing in mind the inherently complexity of measuring the true prevalence of elder abuse in nursing homes, caution is needed when interpreting the exact prevalence rates and risk factors found associated with elder abuse in Norwegian nursing homes.

The definition of a nursing home varies between countries, but the general characteristics across jurisdictions are more similar than different (Ågotnes, 2017); thus, the findings of this thesis may resonate beyond the Norwegian context. However, Norway is a high-income country with a welfare system built on the principle of equal access to healthcare for all inhabitants; thus, findings may not resonate to other countries with different healthcare systems.

7.0 Conclusion

The overall goal of this thesis was to provide new knowledge on the extent, nature, and risk factors of elder abuse in nursing homes. This thesis presents results from the first national study to examine the prevalence and risk factors of elder abuse in Norwegian nursing homes, and it is one of the largest studies worldwide providing evidence on the magnitude of elder abuse in an institutional setting. Overall, the findings contribute to a greater knowledge of a prevalent and multifaceted problem of elder abuse in nursing homes requiring immediate attention from both healthcare professionals, institutional managers, municipal leaders, and society in general, considering in particular the rapidly aging population who all entitled to decent and safe long-term care services.

7.1 Theoretical Implications

The kaleidoscope of elder abuse constructed in this thesis may serve as a tentative illustration of how the different types of elder abuse and risk factors at the various nested levels could be presented to visualize the complex and multifaceted nature of elder abuse in nursing homes. One dimension captured in this kaleidoscope, that is less addressed in elder abuse research, is the fifth chrono-level, representing time. This time dimension may be especially important when considering elder abuse in nursing homes, as residents' health is rapidly deteriorating, and different institutional factors, such as high sickness absence and turnover of staff, create immediate changes in the environment. Furthermore, this kaleidoscope may better visualize elder abuse as a dynamic process with a degree of wickedness, where one may look into the kaleidoscope and see a pattern or a problem that may be solved, but when turning the kaleidoscope, a new pattern or problem may arise. Indeed, to prevent elder abuse in nursing homes, one must consider the multifaceted and complex nature that changes over time.

The theoretical contribution of this thesis to the literature on elder abuse is twofold. First, the use of the ecological approach to identify risk factors of elder abuse has produced a more comprehensive understanding of the multiple factors affecting elder abuse in nursing homes. Secondly, different risk factors may be placed at different ecological levels, but the goal was not to argue whether a given risk factor should be entirely conceptualized at any one level but to illustrate the multiple levels that influence how individuals behave when elder abuse

occurs. However, an ecological approach does not explain *why* elder abuse in nursing homes occurs, but it provides evidence that causes may be related to multiple factors at different environmental levels; thus, future studies should include theories from other fields, such as child abuse, intimate partner violence, psychology, criminology, and organizational theory to explain the causes of risk factors identified in this thesis. Furthermore, considering the dynamic nature of elder abuse in nursing homes, future studies should pay more attention to dynamic theoretical frameworks that are often used to "understand and predict self-organizing phenomena in complex systems that are constantly changing, reorganizing, and progressing over time" (Connell et al., 2017, p. 1). *Dynamic systems* refer to different phenomena in nonliving and living systems displaying nonlinear behavioral changes over time; the term first originated in mathematics and physics but was later applied to the field of psychology to better understand behavioral changes (Connell et al., 2017). The key tenets of a dynamic systems theory are that multiple and interacting processes may affect outcomes and that these processes may be caused by external sources in the environment affecting the individuals but may also stem from within the individuals themselves (Connell et al., 2017). Finally, while no definition specific to elder abuse in nursing homes exists, according to the findings in the current thesis, Teaster's definition (2017) of polyvictimization may be more appropriate to embrace all types of elder abuse in nursing homes.

7.2 Practical Implications

Step three in WHO's public health approach (2014); develop and test prevention strategies, is still lacking high-quality and robust studies. In 2020, Marshall et al. published a systematic review of studies exploring interventions to prevent or stop elder abuse, which resulted in 11 reviews containing 149 original studies, whereof eight reviews included interventions in nursing homes. Overall, these reviews consistently reported a lack of rigorous intervention studies to evaluate the effectiveness of prevention strategies for elder abuse, even after decades of research (Marshall et al., 2020). Rosen et al. (2019, p. 3) argue that "this is partly because of the complexity of designing and evaluating elder mistreatment programs and because the relatively young field includes collaborative teams with various levels of funding and research sophistication." They further argue that traditional systematic reviews, including only strategies that have undergone rigorous evaluation with high-quality designs, risk missing innovative and promising interventions that may have had an important influence (Rosen et al., 2019). A scoping review by Touza and Prado (2019) explored preventive

interventions targeting SRA and RRA in long-term care facilities and identified six strategies to prevent SRA: 1) training and education of staff; 2) creating and organizing the work environment and activities in the facilities; 3) enhancing the organizational climate such as interpersonal support and person-centered care; 4) stimulating teamwork; 5) improving work conditions and valuing work activities; and 6) increased effectiveness of supervision and control mechanisms, such as hiring managers with adequate experience and knowledge and analyzing the background of caregivers. Concerning RRA, strategies were to a large extent the same as for preventing SRA but also included the use of multidisciplinary teams (Touza & Prado, 2019).

However, with the high prevalence rates of elder abuse in nursing homes, its potentially devastating consequences, and the rapidly aging population, one must move the field forward concurrently as robust intervention studies are designed, evaluated, and implemented. Thus, some possible responses to prevent elder abuse in nursing homes are now presented according to an ecological approach. Prevention at the *individual level* may include identifying and understanding vulnerability factors of residents such as their level of cognitive impairments, NPS, high care needs, and key demographic factors (Dong, 2017), and this identification may also apply to aggressors to prevent RRA. Another preventive response may be to identify and understand the risk factors of nursing staff, including their personal history and health issues, their intention to leave their job, and general attitudes toward older persons. This is the responsibility of managers (Mileski et al., 2019); nevertheless, nursing staff are not obligated to inform their managers of their feelings. Although the majority of acts of elder abuse in nursing homes are inflicted by the Goffmanian model of total institutions, this is not to say that some *wicked people* with predatory behaviors seek to work in settings with vulnerable older adults who may be easy targets of sexual abuse (Lindbloom et al., 2007). Some of these wicked people may be weeded out during the hiring process due to the requirement for background checks such as criminal records. In Norway, this first became a necessity for new employees in January 2017, but it did not have a backdated effect for staff members already working in nursing homes, which should be a requirement implemented by Norwegian policymakers.

Prevention at the *relational level* may focus on the individuals during their interactions. Aggressive behaviors displayed by persons with dementia are often the expression of unmet needs, and crucial to cope with this aggressiveness is to understand the meaning behind the behavior (Cohen-Mansfield, 1990). In Norwegian nursing homes, most residents suffer from

dementia, and many display aggressive behaviors due to their brain diseases; hence, geriatric training is an important intervention to prevent resident aggression from occurring, as well as how staff should behave when incidents occur. A person-centered approach is mentioned as the most significant response to cope with resident aggression directed at both staff and other residents; thus, focusing on every individual's history, needs, preferences, and characteristics such as their ability to communicate, should be assessed at admission to the nursing homes and with any changes in functional, cognitive, or health status (Snellgrove et al., 2015). Furthermore, getting to know the residents and relatives by simply asking about potential triggers of resident aggression may assist when developing a response to reduce such incidents (Snellgrove et al., 2015). Although brain disease is the most common cause of resident aggression toward fellow residents, one must not exclude other possible causes, such as predatory behaviors and power/control issues between residents without cognitive impairments (Rosen et al., 2016), and if possible, there should be an assessment of residents' history of violence, both as victim and perpetrator (Snellgrove et al., 2015).

Prevention at the *institutional level* may focus on different organizational factors to establish an adequate infrastructure and workforce (Dong, 2016). Managers may promote a positive and safe work environment with active leadership and a high level of social support and recognize that these are beneficial factors contributing to a high quality of care that may reduce elder abuse (Backman et al., 2017; Havig et al., 2011; Kamavarapu et al., 2017; Mileski et al., 2019). An adequate staff-to-resident ratio is necessary, as well as a high percentage of qualified staff, and managers may develop a plan for sickness absence to avoid understaffing (Gautun & Bratt, 2014). Managers may also create a safe environment for nursing staff to discuss their failures and successes, as opposed to an inward-looking culture with a punishing regime (Kamavarapu et al., 2017). Nevertheless, managers should be aware of how to report and handle both minor and serious acts of elder abuse. Regarding RRA, managers and staff may emphasize procedures and structures within the nursing home (e.g., roommate reassignments, physical and personal space, and removing items that can be used as weapons; DeBois et al., 2019; Duxbury et al., 2013; Rosen et al., 2008), and facilities may also consider the use of welfare technology, such as sensors/locks on doors that only allow staff and residents to enter personal rooms (Dong, 2016). Also, the architecture of nursing homes may be considered, both in terms of creating single personal rooms with en suite bathrooms and ensuring enough space for residents in shared living areas and avoiding long and constricted corridors where incidents of RRA commonly occur. Long corridors are also

time-consuming for nursing staff who constantly need to move themselves and residents from one area to another, taking up a fair amount of their valued time (Ågotnes, 2017).

Prevention at the *societal level* may focus on policy-based interventions, including reporting mandates and legislations specific to elder abuse (Dong, 2017). Nearly all US states, and some countries in the European region, have mandatory reporting legislation that requires healthcare professionals to report suspicions of elder mistreatment (Sethi, 2011). In Norway, explicit laws against child maltreatment, intimate partner violence, and sexual violence exist, but no specific laws against elder abuse (WHO, 2014). Nevertheless, Norwegian nursing staff have a professional responsibility to detect and prevent violence and sexual abuse against all patients in municipal health and care services (Norwegian Health and Care Services Act, 2011). In England and Wales, social care staff are legally required to report employees committing misconduct of vulnerable adults to the Protection of Vulnerable Adults list, which may ban employees from similar employment (Hussein et al., 2009). A list or register like this may be studied and considered in all countries. APS is a social services model adopted by the US designed to investigate the mistreatment of vulnerable adults, but only 34% of countries in the world have applied such a model (WHO, 2014). Norway has child protective services but no APS, and according to the high prevalence rates in our study and the Norwegian study by Sandmoe et al. (2017), Norwegian policymakers may consider establishing services that also protect and serve vulnerable adults exposed to mistreatment. The APS model has not been rigorously studied but may serve as a model that can be adapted to fit the needs of other countries. In 2018, the Norwegian Directorate for Children, Youth and Family Affairs (Bufdir) launched the pilot *TryggEst* (*Safe-Being*), a model or system inspired by an existing model in the UK, the "Safeguarding of vulnerable adults." *TryggEst* aimed to better prevent, uncover, and handle possible causes of abuse toward vulnerable adult individuals (above 18 years) unable to protect themselves (Trøssebro et al., 2019). After one year of piloting, the trend is an increase in notifications of abuse cases, even from nursing homes; thus, the model is now available for all municipalities to implement. Finally, all healthcare professionals working with older persons both in community and institutional settings may receive geriatric training and knowledge of elder abuse through their education, both as undergraduates and in higher education. In many Norwegian educational institutions, this has not been adequately addressed in upper secondary school, nursing school, or continuing education for RNs.

7.3 Recommendations for Future Research

It may seem impossible to capture the true prevalence of elder abuse in nursing homes, but it is still crucial to develop adequate measurement instruments to advance the field of elder abuse. A critical first, however, is to define and operationalize abusive acts. Stakeholders in nursing homes conceptualize and identify elder abuse in nursing homes differently (Neuberg et al., 2017; Radermacher et al., 2018), and if researchers do not connect with the persons or phenomenon they are studying, it may be difficult to address the dynamic features of elder abuse. The field of elder abuse is known for its inability to reach a consensus on *how to define* and *what forms it takes* (Dong, 2017); researchers use different definitions, which firstly confuses healthcare professionals and society in general but also complicates the comparison of prevalence rates between jurisdictions and nations. The discussion of whether an all-encompassing definition is sufficient to describe this complex phenomenon or whether it is necessary to use a more specific definition that sets boundaries to the problem fitting with the cultural and social context of that particular practice, such as nursing homes (Mysuyk et al., 2013), should be further explored. Differences in conceptualizations may also be present on a higher societal level, where countries and cultures may hold different beliefs, attitudes, and expectations of caregiving activities (Kosberg & Garcia, 1995). Furthermore, in some countries, different acts of psychological and physical characteristics may not be condemned as abusive (Kosberg & Garcia, 1995). Thus, it must be questioned whether it is realistic to develop a standardized data collection method and measurement instrument that can be used worldwide, or whether each country should develop tactics to address the problem. This should be further elaborated on in future studies.

Since elder abuse constitutes a complex cluster of factors that involve healthcare, social services, legal and justice, financial, public safety, aging services, disability, protective services, education, research, policy, and human rights issues, it requires a coordinated multidisciplinary, multi-agency, and multi-system response (Connolly et al., 2014). Multidisciplinary teams may provide more efficient service delivery, compared to navigating through *silos* of disconnected services and disciplines (Burnes, MacNeil, et al., 2020), but this is a new acuity in elder abuse and more research is needed.

A research study is not complete until the results are disseminated in forums or presentations, or when appropriate endorsements on how the findings are being translated into clinical practice are made (Curtis et al., 2016). Knowledge translation (KT) is a concept wherein the overarching goal is to translate research into clinical practice (Graham et al., 2006). Du Mont

et al. (2015) undertook a scoping review of the gray and scholarly literature to bridge the gap between elder abuse research and the development of evidence-based interventions and identified 68 guidelines, protocols, and materials, with recommendations that could specifically inform the development of multidisciplinary hospital-based interventions for elder abuse (Du Mont et al., 2015). Such evidence-based practices and guidelines presented in a user-friendly manner would benefit all healthcare professionals in various settings who may identify older persons at risk (Dong, 2017). Since research on elder abuse is still in its infancy, one may learn a great deal from how KT has been addressed in dementia care and other fields of interpersonal violence.

Community-based participatory research (CBPR) has been a fast-growing strategy in the translation of research into practice, and CBPR may be an especially useful translational approach because stakeholders are engaged in the entire research process and thus attribute a natural pipeline for the dissemination of evidence into institutions (Dong, 2017). Furthermore, CBPR allows for collaboration between various academics, educational institutions, social service models, and institutional professionals to protect older residents (Dong, 2017). One should also overcome the underestimation of using nursing home residents as collaborators or advisors of research in long-term care settings; a systematic review by Backhouse et al. (2016) found several studies that had successfully involved residents in the research process. High-quality study designs, such as randomized controlled studies and CBPR, represent important methods that should be utilized to strengthen the field of elder abuse research (Dong, 2017). Furthermore, researchers should further focus on the lifespan of abuse and the cycle of violence, rather than solely focusing on elder abuse as an isolated entity (Dong, 2017). At the same time, it is important to account for the specific types of abuse that older persons are exposed to, for example, RRA. Finally, when examining the multifaceted kaleidoscope of elder abuse in each nursing home, few, many, or differing problems may be apparent at the level of single nursing homes; this should be paramount when designing studies to prevent elder abuse.

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Erratum

1. Please note that in Paper II, page 4, first paragraph, it says “financial/material”, where it should be “material”.

2. Please note that in Paper II, Table 1, the “more than” sign under “Facility size” is turned the wrong way. The correct signs are presented in Table 3. BMC Geriatrics is notified.

Papers I-III

Paper I

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RESEARCH ARTICLE Open Access

Elder abuse in Norwegian nursing homes: a cross-sectional exploratory study

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Abstract

Background: Elder abuse is a global public health and human rights problem that is predicted to increase as many countries experience a rapid growth in their population of older adults. Elder abuse undermines an older person's well-being and is associated with a range of serious health consequences. In institutional care settings, older residents are particularly vulnerable and hence at higher risk of being abused, but few countries have explored the extent and nature of this phenomenon in national studies. The aim of this study is to estimate the prevalence of observed and perpetrated staff-to-resident abuse in Norwegian nursing homes.

Methods: We conducted a cross-sectional exploratory study of nursing staff in 100 randomly drawn Norwegian nursing homes. Nursing staff completed a pen and paper survey measuring how often during the past year they had observed staff commit acts of neglect and psychological, physical, financial/material, and sexual abuse towards residents. They also reported how often they had perpetrated acts of abuse themselves, and these rates were disaggregated by nursing staff's gender, age and education.

Results: Of 3693 nursing staff (response rate 60.1%), 76% had observed one or more incidents of elder abuse during the past year, and 60.3% reported they had perpetrated one or more incidents of abuse in the same period. Psychological abuse and neglect were most commonly reported. Male staff reported more acts of physical abuse, while female staff reported more acts of neglect. Higher education of staff was associated with higher rates of self-reported psychological abuse, physical abuse and neglect.

Conclusions: This first national survey of staff in Norwegian nursing homes is one of the largest studies globally estimating the prevalence of elder abuse in institutional settings. Overall, we found staff-to-resident abuse to be relatively common, and our findings propose a need for preventive strategies to improve the quality of life and safety of residents in Norwegian nursing homes.

Keywords: Elder abuse, Elder mistreatment, Nursing homes, Primary care, Nursing staff, Perpetrated abuse, Observed abuse

Background

Elder abuse is a global public health and human rights problem, and the mistreatment of older people is associated with a range of negative health outcomes from minor injuries to lasting disabilities, long-term psychological problems, suicide attempts, and increased risk of hospitalization, institutionalization and premature death [1–6]. Moreover, elder abuse is related to societal consequences such as medical costs of emergency care, hospitalization, and expenses linked to the prosecution, punishment and rehabilitation of perpetrators [4, 7, 8]. The Centers for Disease Control and Prevention (CDC) defines elder abuse or mistreatment as *"an intentional act or failure to act by a caregiver or another person in a relationship involving an expectation of trust that causes or creates a risk of harm to an older adult* [9]. This includes psychological, physical, financial/material and sexual abuse, and intentional or unintentional neglect.

Compared with research on intimate partner and sexual violence, little has been done to shed light on the mistreatment of older adults [10]. Moreover, the majority of elder abuse studies have been conducted in the community and not in institutional settings [11, 12],

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where residents tend to be more frail and vulnerable to abuse [13]. In 2017, the first meta-analysis on the global prevalence of elder abuse in both community and institutional settings estimated a pooled prevalence of 10.0% (CI 95, 5.2–18.6%) when reported by older adults themselves, and 34.3% (CI 95, 22.9–47.8%) when reported by caregivers or third parties [12]. In 2019, another systematic review and meta-analysis estimated the prevalence of elder abuse in institutional settings and found that 64.2% (CI 95, 53.3–73.9%) of staff admitted perpetrating at least one incident of abuse during the past year [14]. Among the subtypes of abuse, the prevalence of staff-reported psychological abuse was 32.5%; neglect 12.0%; physical abuse 9.3%, and sexual abuse 0.7%, and these rates were even higher when reported by older residents themselves [14].

Existing literature does however provide a wide range of prevalence estimates, influenced by the perspective from which the abuse is measured and understood, definitions and data collection methods used, and variation in reference periods to measure the extent of abuse [12, 14–20]. A literature synthesis found approximately 40 definitions and several subtypes of abuse [20]. For example, where some defined verbal and medication abuse as unique categories [21–23], others included acts of verbal character under psychological abuse, and misuse of medications as neglect or physical abuse [9, 24]. Different data collection methods are also a significant cause of the variability in estimates, where most measurement instruments are self-designed and study-specific [12]. The use of different reference periods might also impact the prevalence, where some studies use a four week period [25], while others use three months [21–23] or even the entire work career [26]. Nevertheless, a past-year reference period is the most commonly used [24, 27–33].

Elder abuse is a complex interplay of individual, relationship, social and cultural factors, and "risk factors" rather than "causes" is more commonly used in the study of elder abuse [34, 35]. Bronfenbrenner's ecological model was introduced to the field of violence in the late 1970s, and in 2011, Schiamberg et al. [36] applied this model to illustrate the distinctive risk factors of elder abuse in nursing homes. This model comprises five levels, where the first level (micro) focuses on individual characteristics such as biological and demographic factors that increase the likelihood of being a victim or perpetrator of abuse. The second level (meso) explores how social relationships between residents and staff increase the risk of victimization and perpetration of abuse. The third level (exo) examines institutional factors in which these relationships are embedded, and the fourth level (macro) explores larger societal factors such as cultural norms, ageism/sexism, and public policy/economy. The fifth and final level seeks to identify changes in the environment over time [34–37].

Few studies have been conducted on risk factors of elder abuse in institutional care settings [37], and existing research is ambiguous when describing the individual-level risk factors of staff. For instance, in Irish nursing homes, male staff reported committing more acts of neglect than their female colleagues [24], and in Swiss nursing homes, men admitted more acts of emotional abuse [25]. In Taiwan, younger staff committed more psychological abuse [38], and in Norway, older staff reported more acts of physical abuse [26]. The Norwegian study also found that higher-educated staff admitted perpetrating more acts of physical and psychological abuse, in contrast to Israel, where nurse aides and practical nurses admitted to more acts of mental abuse compared to registered nurses [30].

While international research agrees on the persistent occurrence of elder abuse and its devastating consequences, the World Health Organization's (WHO) *Global status report on violence prevention 2014* [10] emphasized that elder abuse was less addressed in governmental action plans than the other forms of interpersonal violence. The Norwegian government has also, in many strategic white papers and national action plans, highlighted elder abuse as a societal problem. Still, the first national study on violence and abuse reported by community-dwelling older adults aged 65 and over was conducted in 2017, where the overall prevalence rates were estimated to be between 6.8 and 9.2% [39].

The Norwegian population above 80 years of age will more than double by the year 2060 [40], and at the same time, it is predicted that health care services will have a substantial staff shortage [41]. This combination of exponential growth in the number of older adults and an inadequate supply of trained nursing staff is dangerous, and could lead to a deterioration of health services for residents in Norwegian nursing homes [42]. The completion of this research establishes a baseline on the magnitude of the problem, so appropriate interventions to reduce or prevent elder mistreatment can be developed, implemented and evaluated. The primary objectives of our study were to 1) estimate the prevalence of observed and perpetrated staff-to-resident abuse in Norwegian nursing homes and 2) explore demographic differences between staff who reported perpetrating and not-perpetrating acts of abuse.

Methods

Study design

We conducted a cross-sectional exploratory pen and paper survey of nursing staff in Norwegian nursing homes during October 2018 and January 2019.

Setting

All public and private nursing homes or retirement homes, hereafter called nursing homes, registered in the Central Register of Establishments and Enterprises (CRE), were eligible for inclusion. In Norway, municipalities own and operate approximately 90% of nursing homes, and private for-profit agencies or non-profit organizations typically set up as foundations operate about 10% [43].

Randomization and recruitment of nursing homes

To obtain a representative sample of institutions ($n = 939$), we used a computerized random number generator to draw a sample of 100 nursing homes, which is approximately 10% of all nursing homes in Norway. All nursing homes had the same statistical chance of being drawn. We also randomly drew 50 nursing homes as reserve homes if institutions declined to participate. Few national studies have been conducted to measure elder abuse in nursing homes, and they all describe different measurement methods. Therefore, we were unable to statistically compute a sample size, but in comparison, the national study in Ireland distributed 3000 questionnaires in 64 nursing homes [24]. To recruit nursing homes, we emailed invitation letters to all nursing home directors, followed by a telephone call. Those who agreed to participate sent a confirmatory email with the potential number of participants at the nursing home and the name of one "coordinator" who could administer the survey. The coordinator task was either assigned to ward managers, the nursing home directors, or others appointed by the directors. Of the 100 invited nursing homes, 27 institutions declined to participate, of which many were above the median size of 34 beds in Norway [44]. To prevent further skewness, we initially invited the 30 largest nursing homes from our reserve list (Fig. 1).

Participants

Eligible participants were nursing staff; registered nurses, learning disability nurses/social educators, licensed

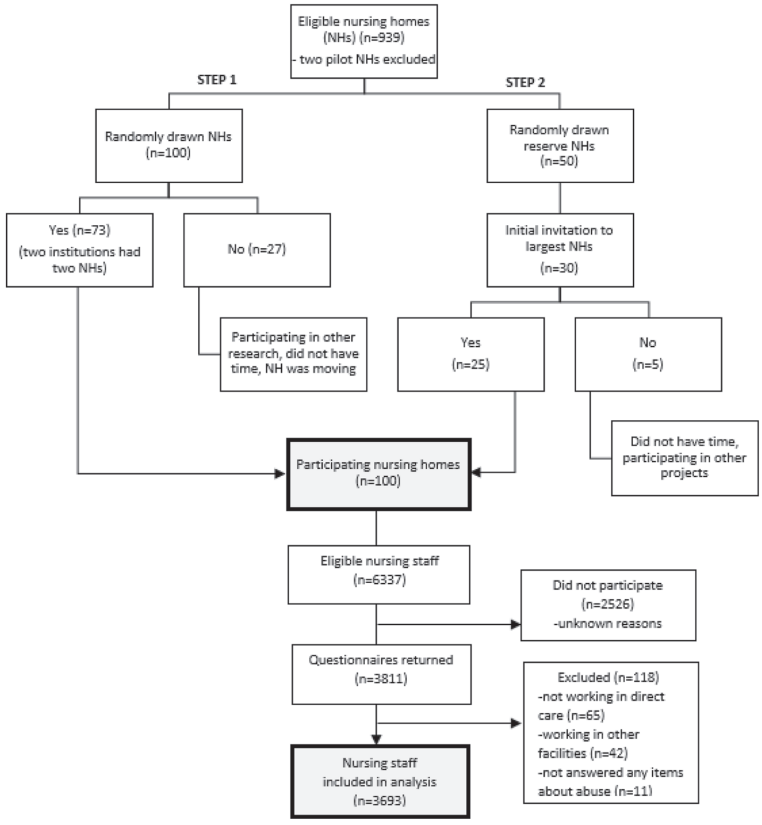

Fig. 1 Recruitment of institutions and participants

practical nurses, nursing and health care students, and nurse assistants with no formal health education, who worked directly in the care of residents during a three-week period.

Of the nursing staff, 6337 were eligible for inclusion, whereas 3811 returned questionnaires, giving a response rate of 60.1%. Of these, 118 were excluded before analyses because they reported not working in direct care, worked in nursing home day care centres or assisted living facilities, or had not answered any items about abuse. The remaining 3693 nursing staff were included in the statistical analysis, giving an analytic response rate of 58.3% (Fig. 1).

Variables

The primary outcome measure was to estimate the prevalence of all forms of observed and perpetrated staff-to-resident abuse the past year; psychological, physical, financial/material, sexual and neglect, disaggregated by nursing staff's gender, age and education.

Measurements

Abuse measurement instrument

To our knowledge, no standardized instrument exists that has been extensively used to measure all types of staff-to-resident abuse as reported by staff in nursing homes. A systematic review by Cooper et al. (2008) [15] reported that one study used a valid and reliable instrument to measure staff-to-resident abuse, but this instrument was limited to measure psychological abuse. Since then, researchers have developed measurement instruments, mainly by adapting items from the widely-used Conflict Tactics Scale (CTS) originally designed to measure intra-family conflict and violence [45]. Few studies have reported psychometric properties of the instruments they have constructed [12]. In our study, we used a questionnaire developed by Dr. Nicholas Castle of the United States, with his permission. The questionnaire has previously been used to measure staff-to-resident and resident-to-resident abuse in four large surveys of staff in US nursing homes and assisted living facilities [21–23, 46]. This questionnaire contained 28 items measuring how often staff observed/perpetrated verbal abuse (5 items), physical abuse (7 items), psychological abuse (3 items), caregiving abuse (2 items), medication abuse (3 items), material exploitation (4 items), and sexual abuse (4 items) towards residents during the past 3 months. The items were scored "Never", "Once", "2–3 times", "4–5 times", "5–6 times", and "Other number" and reported with percentages or mean for each questionnaire item. To calculate this mean, positive scoring values (excluding "Never" and "Other number") were assigned a number from 1 to 4, respectively. The questionnaire demonstrated acceptable internal consistency when measuring observed staff-to-resident abuse in assisted living facilities (Cronbach's alpha > 0.7) [22].

Translation

We used the guidelines for translation and adaptation of instruments previously used by WHO [47]. Initially, two translators forward-translated the instrument from English to Norwegian, and a bilingual expert panel reviewed this and made minor adjustments. We then performed ten cognitive interviews with nursing students working part-time in nursing homes concerning the language and content of the instrument before a professional translator with no knowledge in the field back-translated it to English. The translated version of the instrument was sent to the original author, who had no further comments. To test face validity, the instrument was pretested in a pilot study of 60 nursing staff from two Norwegian nursing homes in June 2018. We also conducted two reflection groups, each with three or four participants, to explore whether the items represented all facets of elder abuse in Norwegian nursing homes.

Modification and reliability of instrument

In our study, items of verbal abuse were classified as psychological abuse, and items of medication abuse were classified as physical abuse. We also self-developed and added one item about rape and included six items from the Norwegian study by Malmedal et al. [26] measuring acts of neglect. Overall, our abuse measurement instrument contained 35 items. After the pilot study was carried out, we made some linguistic changes to the questionnaire and added a line detailing that staff should *"not report acts justified in care or treatment i.e. not give food/water to residents before procedures"*. We also altered the scoring values to "Never", "Once", "2–5 times", "6–10 times", and "More than 10 times", to measure abuse the past year and not the past 3 months. In our study, the Cronbach's alpha coefficients were ≥ 0.7 for observed/perpetrated psychological abuse and neglect. We did not conduct a reliability estimation for physical, financial and sexual abuse, because these items/acts represent formative and not reflective measures [48].

Final survey questionnaire

The final survey questionnaire contained six sections: (A) participant's demographic variables (no name or birth date) and employment profile, (B) health status, (C) work-related variables, (D) experiences of conflicts with residents, (E) attitudes towards older people with dementia, and (F) experiences of observed and perpetrated staff-to-resident abuse, observed resident-to-resident abuse and observed relative-to-resident abuse. To gather information about organizational factors i.e. nursing home size and location, number of male/female

residents, the nursing home directors and ward managers completed two short questionnaires. In this article, only nursing staff's gender, age, and education and experiences of observed and perpetrated staff-to-resident abuse are presented.

Data collection

Packages with instruction letters, survey questionnaires with invitation letter on the first page, and sealed collection boxes were provided to the coordinators at each nursing home. The instruction letter described in detail how the coordinators should administer the survey, and the main author had contact with all coordinators by phone during the data collection period. Participation was voluntary, and no incentive was given directly to participants. We did, however, offer an economic incentive to the eight institutions that achieved the highest response rate, where a sum of approximately 900 GBP was dedicated to the welfare of staff.

Ethical considerations

All nursing home directors of the randomly drawn nursing homes received information about the study via email and by telephone. Participation was voluntary, and directors who agreed to participate on behalf of the nursing home sent a written consent by email to the main author. Information about the study was given on the first page of the survey questionnaire, and nursing staff participation was voluntary. Since participants did not write their name or birth date on the questionnaire, consent from staff was obtained when they completed and placed the questionnaire in the sealed collection boxes. Staff were informed that they could not withdraw their participation after the questionnaire was returned. All questionnaires were coded so we knew from which nursing home it came, but participants were assured that the code was kept safe by the main author only, and that no participant or nursing home would be identifiable in any publication or report. Due to the nature and sensitivity of the survey questions and the potential of disclosing criminal offences, we applied to the Regional Ethic Committee (REC) for Medical Research. The Committee (REC Central) approved the study in May 2018, reference number: 2018/314.

Statistical analysis

Data was analysed with Stata 15.2 software package [49]. As in studies with the same scoring values [24, 50], our dependent variable "Abuse" was skewed towards "Never". For this reason, we dichotomized this variable to "No abuse" (never) and "Abuse" (one or more incidents). Descriptive statistics of nursing staff were presented with frequencies and percentages. Subtypes of abuse were calculated by summarizing all items under the specific category and presented with percentages expressing the number of participants who answered positive ("abuse") on at least one included item. We did not use a substantive threshold criterion, ten or more incidents during the past year, to define neglect or psychological abuse. Researchers using these criteria report lower prevalence estimates of abuse, and the argument is that one-time scenarios of psychological abuse and neglect cannot be characterized as mistreatment [11]. In the context of nursing homes where the power imbalance is significant as are the vulnerabilities of the residents, we considered one act of abuse to qualify as "Abuse". Owing to the small rates of financial and sexual abuse, these were not analysed with chi-squared statistics. Nursing staff's perpetrated acts of psychological abuse, physical abuse and neglect, and nursing staff demographics (gender, age, education) were analysed with Pearson's Chi-square test. Missing values were removed from all variables. We did not add any design- or post-stratification weights, considering the large sample size.

Results

Of the 100 participating nursing homes, 48 institutions had ≤34 beds and 52 institutions had > 34 beds, and they ranged in size from eight to 161 beds. Forty-nine nursing homes were in a city, and 94% were publicly run by the municipalities. Of the participants, 63.7% worked in long term care units, 21.8% in dementia special care units, and 14.5% in short-term care units. Most participants were women (91.5%); 37.0% were between 31 and 49 years, and 56.5% had completed high school (Table 1).

Overall, 76% (2435/3204) of nursing staff reported having observed at least one incident of abuse committed by other members of staff, and 60.3% (1881/3124) admitted that they had perpetrated at least one incident of abuse against a resident during the past year.

Figure 2 illustrates the prevalence, central tendency and variation in each type of observed and perpetrated abuse in the 100 participating nursing homes, and Table 2

Table 1 Demographic characteristics of nursing staff ($N = 3693$)

Variables		*n*	%
Gender	Male	312	8.5
	Female	3362	91.5
Age	16–30 years	1000	28.9
	31–49 years	1277	37.0
	50–75 years	1180	34.1
Highest level of education	Primary School	201	5.5
	High School	2050	56.5
	University < 4 years	1126	31.0
	University ≥4 years	253	7.0

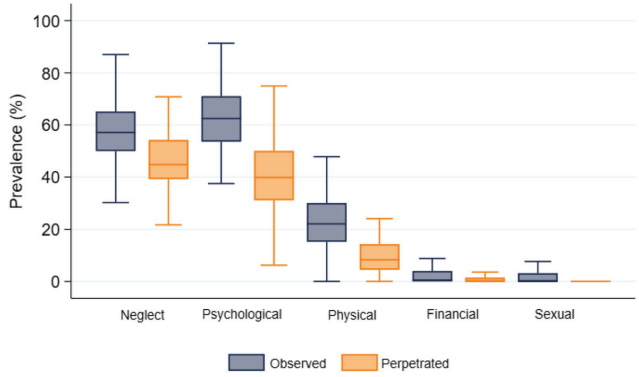

Fig. 2 Nursing home ($N = 100$) prevalence rates according to observed/perpetrated elder abuse type

outlines the proportion of each abusive act observed and perpetrated by staff during the past year. Overall, 57.8% (2029/3511) had observed at least one incident of neglect by other staff, with 40.1% (1409/3511) observing staff commit neglectful acts on two or more occasions. The most-frequent reported acts were neglecting oral care (35.4%), ignoring a resident (35.1%), delaying care (29.3%), and prohibiting a resident from using the alarm (20.2%) at least once in the past year.

Overall, 62.4% (2155/3452) had observed at least one incident of psychological abuse committed by other staff in the past year, with 43.4% (1499/3452) reporting they had observed such abusive acts on two or more occasions. Incidents of yelling were most prevalent with almost 50% of staff observing this at least once, followed by arguing with a resident (36.8%) and making critical remarks to a resident (21.8%) at least once during the past year. Regarding physical abuse, 23.2% (810/3489) had observed staff commit one or more acts, and 8.7% (305/3489) had observed this on two or more occasions. The most frequent acts were pushing, grabbing or pinching a resident (12.9%), behaving aggressively towards a resident (8.4%), and deliberately delaying giving medications (4.5%) at least once in the past year. Most nursing staff reported that they had never observed financial/material abuse (97.9%, 3514/3591) or sexual abuse of residents (98.4%, 3525/3583).

Overall, 46.9% (1623/3460) of staff admitted perpetrating at least one incident of neglect in the past year, and 27.6% (954/3460) had done this on two or more occasions. Like observed abuse, the most frequent act was neglecting oral care (30.5%), ignoring residents when they called (25.3%), deliberately delaying care (19.5%), and prohibiting residents from using the alarm (11.7%).Overall, 40.5% (1387/3427) admitted they had perpetrated at least one act of psychological abuse, with 21.5% (737/3427) admitting they had done this on two or more occasions. Like observed abuse, most staff admitted yelling at a resident (27.1%) and arguing with a resident (21.4%). Regarding physical abuse, 9.6% (335/3477) admitted perpetrating these acts at least once, and 2.2% (76/3477) had done this at least twice. Regarding physical acts, 5.8% of staff admitted pushing, grabbing or pinching a resident, and 4.5% had deliberately delayed giving a resident medication. The majority of staff reported they had never committed financial/material abuse (98.9%, 3559/3600), or sexual abuse against a resident (99.6%, 3565/3578).

Table 3 outlines nursing staff characteristics associated with self-reported perpetrated abuse. A significantly higher proportion of males reported committing physical abuse, and a higher proportion of females admitted acts of neglect. We found no significant differences between age groups and abuse. Higher-educated staff admitted more acts of psychological abuse, physical abuse, and neglect.

Discussion

Our findings demonstrate that approximately two-thirds of staff in Norwegian nursing homes reported having committed one or more acts of resident mistreatment during the past year, with neglect and psychological abuse being the most commonly reported. The overall prevalence rate of perpetrated staff-to-resident abuse in our study is slightly lower than the pooled estimate reported in the meta-analysis of Yon et al. (2019), but we found a slightly higher prevalence rate of psychological abuse and a considerably higher rate of neglect than the meta-analysis. Furthermore, when we compared our results to the national study of staff-to-resident abuse in Ireland, we found significantly higher rates of all types of abuse except *observed* neglect [24]. These differences could be explained by the fact that we used other operational definitions of abuse than the Irish study, and we

Table 2 Proportion of observed and perpetrated abuse past year, as reported by nursing staff ($N = 3693$)

Type of abuse:		Observed (%):						Perpetrated (%):					
		N	Never	Once	2–5 times	6–10 times	> 10 times	N	Never	Once	2–5 times	6–10 times	> 10 times
Psychological abuse	Yelling at a resident	3621	51.3	15.1	22.0	6.4	5.2	3634	72.9	12.7	11.3	1.8	1.3
	Making nasty remarks to a resident	3609	79.2	8.7	8.4	2.4	1.2	3607	94.1	3.7	1.9	0.2	0.1
	Swearing at a resident	3632	88.2	5.3	4.8	0.9	0.8	3638	95.1	2.9	1.6	0.1	0.3
	Making humiliating remarks to a resident	3590	81.5	7.9	7.8	1.7	1.2	3593	94.5	3.1	1.5	0.5	0.5
	Arguing with a resident	3611	63.2	14.2	16.1	3.7	2.8	3618	78.6	11.3	8.2	1.1	0.9
	Making threatening remarks to a resident	3615	93.3	3.6	2.2	0.5	0.4	3624	97.9	1.4	0.5	0.1	0.06
	Making critical remarks to a resident	3615	78.2	9.3	9.7	1.7	1.2	3622	90.2	6.0	3.3	0.2	0.3
	Threatening to stop taking care of a resident	3643	87.9	5.0	5.7	0.7	0.7	3624	94.3	3.2	1.9	0.4	0.3
Physical abuse	Pushing, grabbing, or pinching a resident	3599	87.1	6.4	4.7	0.9	0.9	3606	94.2	3.5	1.6	0.3	0.5
	Pulling hair or kicking a resident	3608	99.2	0.5	0.3	0.06	0.03	3620	99.7	0.1	0.1	0.03	0.03
	Hurting a resident on purpose	3611	99.4	0.4	0.2	–	0.03	3625	99.9	0.08	–	–	0.03
	Throwing things at a resident	3611	99.3	0.4	0.3	–	0.06	3616	99.9	0.06	0.03	–	0.03
	Hitting a resident	3611	99.2	0.4	0.3	0.03	0.06	3622	99.9	0.06	0.03	–	0.03
	Bullying a resident	3606	96.3	2.2	1.1	0.2	0.2	3616	99.6	0.3	0.03	–	0.03
	Behaving aggressively towards a resident	3610	91.6	4.3	3.1	0.6	0.4	3606	98.0	1.3	0.6	0.06	0.06
	Not giving needed medication on purpose to a resident	3640	98.6	0.7	0.4	0.1	0.1	3629	99.7	0.08	0.1	0.03	0.06
	Giving more medication than needed on purpose to a resident	3636	96.2	1.8	1.4	0.4	0.3	3630	99.2	0.4	0.3	0.1	0.06
	Deliberately delaying giving medication(s) to a resident	3626	95.5	1.4	2.2	0.5	0.4	3619	97.2	1.0	1.2	0.3	0.4
Financial/ material abuse	Stealing money from a resident	3615	99.6	0.3	0.1	0.03	–	3626	99.9	0.03	0.03	–	0.03
	Stealing things from a resident	3619	99.5	0.3	0.1	0.08	0.03	3625	99.9	0.06	0.03	–	0.03
	Signing documents without permission from a resident	3617	99.3	0.5	0.1	–	0.06	3630	99.7	0.3	0.03	–	–
	Destroying things that belong to a resident without permission	3616	99.2	0.5	0.3	–	0.06	3631	99.3	0.6	0.08	–	–
Sexual abuse	Unwelcome touching of a resident	3617	99.7	0.2	0.03	0.03	0.03	3627	99.9	0.08	0.06	–	–
	Unwelcome discussion of sexual activity with a resident	3615	98.9	0.8	0.3	0.03	0.03	3624	99.7	0.2	0.03	–	0.06
	Exposure of a residents private-body parts to embarrass them	3610	99.7	0.08	0.08	0.08	0.03	3624	100	–	–	–	–
	Digital penetration (e.g. finger) of a resident	3613	100	–	–	–	–	3622	100	–	–	–	–
	Rape of a resident	3614	100	–	–	–	–	3618	100	–	–	–	–
Neglect	Not giving food on purpose to a resident	3638	96.7	1.8	1.1	0.2	0.2	3634	99.2	0.4	0.2	0.08	0.06
	Not giving fluid on purpose to a resident	3646	97.4	1.2	1.1	0.1	0.2	3642	99.3	0.4	0.2	–	0.1
	Delaying care of a resident	3643	70.7	7.6	14.7	3.0	3.9	3622	80.5	6.9	8.8	1.5	2.4
	Ignoring a resident	3626	64.9	8.3	17.6	4.4	4.9	3613	74.7	8.3	11.9	2.3	3.0
	Not treating a resident's wounds carefully enough	3628	90.1	3.8	4.7	0.9	0.5	3611	95.9	2.7	1.2	0.1	0.03

Table 2 Proportion of observed and perpetrated abuse past year, as reported by nursing staff (*N* = 3693) *(Continued)*

Type of abuse:		Observed (%):						Perpetrated (%):					
		N	Never	Once	2–5 times	6–10 times	> 10 times	N	Never	Once	2–5 times	6–10 times	> 10 times
	Neglecting oral care of a resident	3608	64.6	6.0	17.2	5.8	6.5	3589	69.5	8.8	15.4	3.2	3.3
	Not changing diapers on a resident	3627	81.1	5.3	8.5	2.6	2.5	3626	89.8	5.0	3.9	0.6	0.7
	Prohibiting a resident from using the alarm	3638	79.8	6.2	10.1	1.8	2.2	3633	88.3	5.1	4.8	0.6	1.3

also used more items in each subcategory to measure the mistreatment of residents.

Prevalence rates of perpetrated abuse were lower than rates of observed abuse, which is consistent with findings in other studies [24, 27]. This might indicate that staff find it easier to report abuse they observe committed by colleagues rather than admitting their own abusive behaviour. Moreover, we found a smaller difference between observed and perpetrated neglect than the other subtypes of abuse, and a possible explanation might be that staff perceive neglect as systemic failures rather than their personal responsibilities and therefore easier to admit [27]. For example, neglecting oral care was the most frequently reported act of neglect in our study and in the Norwegian study from 2009 [26]. Neglecting oral care may be due to factors such as lack of time or adequate equipment, inadequate training/experience in delivering oral care, or residents' resistance to care [51, 52] rather than due to negative motivations. Still, intentional or unintentional, personal or systemic failure; adequate oral hygiene is crucial for a person's general health and well-being [53].

Psychological abuse is reported as the most prevalent type of abuse in many studies [21, 25, 27–29], and we also found a high prevalence rate of both observed and perpetrated psychological abuse. The most frequently reported act in our study was staff yelling at a resident, which is consistent with prevalence rates reported by nursing home staff in the Czech Republic [29] and by nurses in German nursing homes [27], but quite in contrast to the low rate found in Irish nursing homes [24]. One might argue that "yelling" or "arguing" with residents are not abusive acts but basic features in the daily life of a nursing home [33], which might be supported by a study that found that staff used verbal aggression to keep control and "order" within the institution, thereby normalizing and neutralizing such acts [27]. As our findings came from nurses' interpretations of "yelling" and "arguing" these terms should be clarified in qualitative interviews with staff in order to further interpret this finding. Nevertheless, in the context of a nursing home, healthcare professionals are in a position of power and control over vulnerable adults, and acts of verbal aggression are considered intimidating and disrespectful [50].

Older adults are more vulnerable and physically weaker than younger people, and even minor physical injuries can create serious or long-lasting damage [34]. We found that approximately 10% of nursing staff

Table 3 Nursing staff demographics and self-reported perpetrated psychological abuse, physical abuse and neglect

	Psychological, % (n)			Physical, % (n)			Neglect, % (n)		
Staff characteristics	No Abuse	Abuse	*p*-value*	No Abuse	Abuse	*p*-value*	No Neglect	Neglect	*p*-value*
Gender									
Male	57.4 (163)	42.6 (121)	0.437	84.9 (248)	15.1 (44)	**0.001**	59.4 (171)	40.6 (117)	**0.026**
Female	59.8 (1868)	40.2 (1258)		90.8 (2880)	9.2 (291)		52.5 (1657)	47.5 (1498)	
Age									
16–30 years	58.7 (550)	41.3 (387)	0.791	90.6 (858)	9.4 (89)	0.706	55.0 (518)	45.0 (424)	0.244
31–49 years	58.9 (695)	41.1 (486)		89.8 (1080)	10.2 (123)		51.5 (615)	48.5 (579)	
50–75 years	60.0 (671)	40.0 (447)		90.7 (1026)	9.3 (105)		52.1 (583)	47.9 (536)	
Education									
Primary school	72.6 (130)	27.4 (49)	**0.001**	96.1 (174)	3.9 (7)	**0.003**	68.4 (121)	31.6 (56)	**0.000**
High School	59.8 (1142)	40.2 (769)		91.0 (1762)	9.0 (174)		54.0 (1039)	46.0 (886)	
University < 4 years	57.3 (603)	42.7 (450)		88.1 (946)	11.9 (128)		48.9 (519)	51.1 (543)	
University ≥4 years	54.9 (129)	45.1 (106)		89.6 (215)	10.4 (25)		50.8 (123)	49.2 (119)	

*Pearson's Chi-square test

admitted perpetrating acts of physical character, which is in line with rates in the Czech Republic [29], but lower than rates in German nursing homes [27]. Again, our prevalence rate of physical abuse was higher than in Irish nursing homes [24]. According to the CDC's definition, acts of medication abuse are considered physical abuse [9], this in contrast to the definitions used in the Irish study where medication abuse was considered neglect [24]. Hence, we found that a very small proportion of staff admitted perpetrating medication abuse in our study.

The prevalence of both observed and perpetrated financial/material abuse was low in our study, still slightly higher than the Irish study [24], but lower than the rates reported in US and Croatian nursing homes [28, 31]. There are 30 or more ways older people can be financially exploited [16], and we only used four items which might explain of our low estimate. Nevertheless, Neuberg et al. (2017) [28] used a single item to measure financial abuse in Croatian nursing homes and reported a higher prevalence rate than all these mentioned studies. In 2018, about 100 Norwegian health care providers lost their licenses due to substance abuse or drug theft [54], and retrospectively, we should have added a question concerning staff stealing drugs from residents.

The prevalence rate of sexual abuse was low in our study, which is consistent with other studies [21, 24, 29]. Sexual assault is one of the most shocking types of abuse, and therefore considered the most hidden and least acknowledged [17]. Ageism and negative stereotypes towards older adults' sexuality might impede nursing staff in recognizing sexual abuse of residents, thus staff need better knowledge and training in the detection, examination and managing of sexual assaults in nursing homes [55].

To examine individual-level risk factors of abuse (ecological micro-level), we disaggregated the subtypes according to nursing staff demographics and found that certain individual appearances were associated with higher rates of abuse. One interesting finding was that more women than men admitted acts of neglect. To our knowledge, this is not reported elsewhere, and it is inconsistent with the Irish study where men reported higher rates of neglect [24]. Stress and caregiver burnout is found to be associated with elder abuse [37], and a plausible explanation might be that more women in our sample suffered from burnout. A meta-analysis of gender differences in burnout did find that women were slightly more emotionally exhausted than men, but they also found that men were more depersonalized [56]. Concerning physical abuse, we found that more men than women reported acts of physical character, which is consistent with the finding in Swedish nursing homes [32]. Men might be allocated to work with certain set of tasks e.g. people who are challenging or agitated, hence conduct and report more physical behaviours than women [57]. Nevertheless, these gender differences are not easily explained, and they should be further explored.

Educated staff in our study reported more incidents of all types of abuse, and this was also found in Norwegian nursing homes in 2009 [26]. Nursing staffs' technical expertise, experience, and ability to critical thinking influence quality of health care [58]. In Norway, nurse aides are certified health practitioners after finishing high school, and we speculate whether health educated staff reflect more critically upon their practice and therefore recognize and self-report more acts of abuse compared to the non-certified nurse assistants.

Detecting the extent of elder abuse is inherently difficult, and our study has certain limitations. Firstly, even though the nursing homes were randomly drawn, some institutions declined to participate, and more of the larger nursing homes rejected participation in the initial recruitment phase. These nursing homes did not differ from the rest of the sample with respect to how they were run or located, but one could speculate whether more "problematic" institutions were less likely to accept our invitation. Secondly, our study was based on self-reports by staff, which might have caused response bias, such as social desirability not to report sensitive/incriminating acts of abuse and recall bias when they were asked to remember the exact number observed/perpetrated incidents during the past year. We are also uncertain how staff interpreted the instruction of *"do not report acts justified in health care or treatment"*, where they could have failed to interpret their own misconduct as abusive. We found higher prevalence rates when staff reported on colleagues' behaviours than what they admitted themselves, which could be an indicator of underreporting, but also the result of several staff observing the same incidents of abuse. Thirdly, we did not test the formative measurements of sexual, financial/material and physical abuse, which should take place in future studies. Finally, the cross-sectional study design offers no information about causal relationships between risk factors and abuse.

A strength of our study was the large sample size of 100 nursing homes and 3693 staff, which makes it one of the largest studies exploring the prevalence of staff-to-resident abuse in institutional settings. We also achieved a relatively high response rate of 60.1% compared to other elder abuse studies with response rates ranging from 22 to 43% [24, 27, 31]. These strengths allow us to generalize our results to the rest of the Norwegian nursing home population.

The findings in our study may have practical and theoretical implications for policy, research, care and education. Firstly, nearly all US-states and some countries in

the European region have mandatory reporting legislation that requires healthcare staff to report suspicions of elder mistreatment [37, 59]. In Norway, explicit laws against child maltreatment, intimate partner violence and sexual violence exist, but no specific laws against elder abuse [10]. Nevertheless, according to the recent amendment (2017) in the Norwegian Health and Care Services Act, nursing staff have a professional responsibility to detect and prevent violence and sexual abuse against all patients in municipal health and care services [60]. The risks and benefits of mandatory reporting deserve more study so that the laws may be written in such a way as to minimize harm and maximize value.

In England and Wales, social care staff are legally required to report employees committing misconduct of vulnerable adults, to the Protection of Vulnerable Adults (POVA) list, which may ban employees from similar employment [57]. A list or register like this should be studied and considered in all countries. Adult Protective Services (APS) is a social services model adopted by the US designed to investigate mistreatment of vulnerable adults, but only 34% of countries in the world have applied such a model [10]. Norway has child protective services but no adult protective services, and according to the high prevalence rates in our study and in the Norwegian study of Sandmoe et al. (2017) [39], Norwegian policy-makers should consider establishing services that also protect and serve vulnerable adults exposed to mistreatment. The APS model has not been rigorously studied but may serve as a model that may be adapted to fit the needs of other countries.

To understand why prevalence rates of staff-to-resident abuse are so alarmingly high, we need more research on the underlying risk factors within all levels of the ecological framework. Moreover, nursing staff are in a unique position to detect elder mistreatment, and we need to develop, implement and evaluate interventions to make staff better equipped to observe, handle and report incidents of suspected/alleged abuse, but also interventions that prevent health professionals from committing acts of abuse. Public awareness campaigns and educational programmes for healthcare staff are vital interventions to reduce and prevent elder abuse, and this can be conducted in a variety of ways including training courses, workshops, educational seminars, scientific meetings and conferences [34]. Several interventions have been implemented to reduce the occurrence of elder abuse in both community and institutional settings, but there is still ambiguity whether these interventions improve knowledge and attitude of caregivers, and future studies are warranted [61].

Conclusions

This is the first national study to examine the prevalence of staff-to-resident abuse in Norwegian nursing homes, and it is one of the largest studies to estimate the prevalence of elder abuse in institutional settings worldwide. Our findings demonstrate that resident abuse is a relatively common problem in Norwegian nursing homes, and residents are exposed to many forms of mistreatment.

We believe our study provides significant knowledge about the extent and nature of staff-to-resident abuse in institutional care settings, and our findings are important for Norwegian policy makers when developing future strategic white papers and national action plans to address and prevent elder abuse. Furthermore, our large survey of staff provides essential information about resident abuse in institutional care that future national and international researchers might use to plan and implement measures that could improve the quality of life and safety of older people.

Abbreviations

APS: Adult Protective Services; CDC: Centers for Disease Control and Prevention; CTS: Conflict Tactics Scale; NH: Nursing home; NTNU: Norwegian University of Science and Technology; POVA: Protection of Vulnerable Adults; REC: Regional Ethics Committee; US: United States; WHO: World Health Organization

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Authors' contributions

AB, AHE and WM contributed to the concept and design of the study, analysis and interpretation of the data, and writing of the manuscript. LM contributed to the concept and design of the survey questionnaire and critical revision of the article. All authors have read and approved the final manuscript.

Authors' information

The main author is a Ph.D. Candidate in Public Health and Medicine, NTNU, and this study is a part of the Ph.D.-project. We used a professional Author Editor Service to proofread the manuscript (Edit My English).

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Availability of data and materials

The dataset generated and analyzed during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent to participate

The Regional Ethic Committee for Medical Research (REC Central) in Norway approved the study in May 2018, reference number: 2018/314. All nursing home directors at the requested nursing homes were informed about the study, and those who accepted participation, sent at written consent by email to the corresponding author. Information about the study was given on the first page of the survey questionnaire. Nursing staff did not write

their name or birth date on the questionnaire, so consent was obtained when they completed and placed the questionnaire in the sealed collection boxes. They were informed that they could not withdraw their participation after the questionnaire was returned.

Consent for publication
Not applicable.

Competing interests
The authors declare that they have no competing interests.

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RESEARCH ARTICLE Open Access

Resident-to-resident aggression in Norwegian nursing homes: a cross-sectional exploratory study

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Abstract

Background: Resident-to-resident aggression in nursing homes is a public health problem of growing concern, impacting the safety, health and well-being of all residents involved. Despite this, little research has been conducted on its occurrence particularly in large-scale national studies. The aim of this study was to explore the extent and nature of resident-to-resident aggression in Norwegian nursing homes, as reported by nursing staff.

Methods: We conducted a cross-sectional exploratory study, where nursing staff in 100 randomly selected Norwegian nursing homes completed a pen and paper survey measuring how often they had observed incidents of resident-to-resident aggression during the past year. These rates were separated according to nursing home size, location and units of workplace.

Results: Of the 3693 nursing staff who participated (response rate 60.1%), 88.8% had observed one or more incidents of resident-to-resident aggression during the past year, with acts of verbal and physical aggression being the most commonly reported. Nursing staff working in dementia special care units, larger nursing homes and nursing homes located in suburban/urban municipalities, reported more incidents of resident-to-resident aggression than staff in short-term and long-term units, small institutions, and nursing homes located in rural municipalities.

Conclusions: This is the first national study of resident-to-resident aggression in Norwegian nursing homes and is one of the largest surveys worldwide exploring the extent and nature of resident-to-resident aggression in long-term care settings. Overall, we found a high occurrence of all types of aggression, suggesting a need for strategies to improve residents' safety and quality of life in nursing homes.

Keywords: Resident-to-resident aggression, Nursing homes, Long-term care settings, Nursing care

Background

Aggression between residents in long-term care settings is a public health problem of growing concern, impacting the safety, health and well-being of all residents involved [1, 2]. Compared to research on elder abuse committed by health-care staff [3], and the violence directed toward caregivers by nursing home residents [4–7], few studies have examined the occurrence of aggression that occurs *between* residents in long-term care facilities [2, 8, 9]. Such aggression has been associated with a range of serious health consequences, from minor bruises to fatal injuries, psychological distress, poorer quality of life, and an increased risk of hospitalisations and premature death [2, 8, 10–12]. Resident-to-resident aggression may also create an unsafe and stressful working environment for healthcare staff [8, 13].

The Centers for Disease Control and Prevention (CDC) do not define aggression between nursing homes residents as a form of elder abuse [14], and *"the term*

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*"abuse" implies intent on the part of the initiator, which might not be the case in situations where the perpetrator lacks capacity (*e.g.*, as seen with dementia residents)"* [1]. The term "abuse" may also be more stigmatising than "aggression" and hence contribute to concerns of under-reporting [1]. Previous research has used different terms to describe residents displaying aggressive behaviours such as "exhibitors" [11, 15], "perpetrators" [1, 16], "initiators" [2, 17], and "aggressors" [10]. Furthermore, prior research has used a variety of terminologies including resident-to-resident abuse [2, 18–20], resident-to-resident (elder) mistreatment [9, 16, 21–26], resident-to-resident relational aggression [27], resident-to-resident violence [10, 17, 28], and resident-to-resident (physical) aggression [8, 12, 13, 15, 29–32]. In 2015, a consensus-building workshop with an expert panel of researchers and practitioners reached an agreement on the term resident-to-resident aggression (RRA) defined as: *"negative, aggressive and intrusive verbal, physical, sexual, and material interactions between long-term care residents that in a community setting would likely be unwelcome and potentially cause physical or psychological distress or harm to the recipient"* [1].

One of the first studies on RRA was conducted in 2004 by Shinoda-Tagawa and colleagues, who performed a case-control study of the Minimum Data Set assessments for nursing home residents and of the Massachusetts Department of Public Health's Complaint and Incident Reporting System, to assess risk factors of resident injury inflicted by co-residents [10]. Since then, researchers have used different study approaches to examine the extent, nature and associations including secondary analysis of existing records/registers [12, 15, 16, 31, 33] and publicly available data (media) [11], qualitative event reconstructions [30], observational designs [9], and interviews or surveys of staff [13, 17, 18, 27, 34, 35], family members [19, 20], and/or residents themselves [13, 27].

A study by Lachs et al. [9] estimated the prevalence of RRA based on resident and staff interviews, shift coupons, event logs, incident/accident reports and forensic chart interviews, and found that 20.2% of residents had been involved in at least one incident or RRA during a one-month period [9]. The same study reported that 46.9% had screamed at and 11.3% had hit co-residents [9]. Another study by Castle et al. [18] found that 97% of nursing staff had observed residents yelling and cursing, and 94% of staff had observed residents pushing, grabbing or pinching co-residents during a three-month period.

To prevent and manage resident-to-resident aggression, it is important to understand contributing risk factors and situational triggers; several researchers have used a social-ecological approach, emphasising that RRA is shaped by individual characteristics (victim and aggressor) as well as the physical and social environment in which they live [20, 30]. Pillemer et al. [30] highlighted that *"the needs, person-environment fit, and antecedents or consequences for both members of the RRA dyad must all be considered in order to better understand the influences that contribute to aggressive behaviour"*.

Previous research has found that victims of RRA are both males [10] and females [16, 19], cognitively impaired [10, 13, 16], and/or they often demonstrate neuropsychiatric symptoms (NPS) such as agitation, aggression and/or wandering (getting in harm's way) [10, 13]. Aggressors are more likely to be male [11, 12, 15, 31], younger than their victims [11, 12, 15], intolerant of residents with cognitive impairments [16], more physically dependent [10], and/or they suffer from cognitive impairment, dementia or mental illness themselves [10–12]. A higher incidence of RRA has been found in larger compared to smaller nursing homes [12], institutions located in metropolitan rather than in non-metropolitan areas [12], and in dementia special care units compared to other units [10]. Some studies have reported that RRA is most often exhibited in shared dining/living rooms or hallways [12, 13, 15, 16], while others have found incidents to be more prevalent in residents' rooms [10, 11, 13, 16]. Most episodes occur in the afternoon or evening [12, 13, 16], and often when staff members are not present [11, 15, 36].

The completion of this national study will provide new knowledge on the magnitude of resident-to-resident aggression, so appropriate strategies to prevent and manage RRA can be established and evaluated. The objectives of the present study were to 1) examine the extent and nature of resident-to-resident aggression in Norwegian nursing homes and 2) explore differences in facility characteristics between nursing homes with a high and low occurrence of RRA.

Methods

Study design

This study was a cross-sectional exploratory survey of nursing staff in Norwegian nursing homes, carried out between October 2018 and January 2019. The survey was part of a larger national study where the aim was to measure the occurrence of different types of abuse/aggression in nursing homes; staff-to-resident abuse, relative-to-resident abuse and resident-to-resident aggression. In this article we will present findings on resident-to-resident aggression. The prevalence of staff-to-resident abuse is reported elsewhere [37].

Setting

In Norway, municipalities own and operate the vast majority of nursing homes, defined as a health institution

that provides patients with 24-h stay, treatment and care that do not need to be conducted in hospitals, but which still require more care than is possible to provide in the patient's own home [38]. Norwegian nursing homes contain both short- and long-term units and are mostly managed by registered nurses (RNs) in collaboration with a physician [39]. Seventy-four percent of residents in long-term units are 80 years or older, 80% have cognitive impairments, and four out of five residents require extensive need for assistance [40, 41]. An increasing number of municipalities have established special care units specifically designed for people with dementia with severe neuropsychiatric symptoms [42]. These units are licensed in the same way as the other nursing home units, but often comprise fewer beds and a higher staff/resident-ratio [42].

Sample size and randomisation

We were unable to statistically compute a sample size, because there exist few large surveys of resident-to-resident aggression and staff-to-resident abuse. However, in Ireland, they conducted a national survey on staff-resident interactions and conflicts which included 64 (out of 613) nursing homes and distributed 3000 questionnaires [43]. We therefore targeted a sample of about 10% ($n = 100$) of all nursing homes in Norway ($n = 939$). We used a computerised random number generator to select the sample of institutions registered as private or public nursing homes/retirement homes (hereafter called nursing homes or NH) in the Central Register of Establishments and Enterprises. We also randomly selected 50 institutions who could serve as reserves.

Participants

Eligible participants were nursing staff who provided direct patient care during the three-week period of data collection. We included staff working full- or part-time on all shifts 24-h a day.

Of nursing staff in Norwegian nursing homes, 31% are registered nurses, 2.5% social educators/disability nurses, 42.5% licensed practical nurses, and 24% nursing assistants [41]. Registered nurses and social educators/disability nurses complete a three-year bachelor's degree. Licensed practical nurses undergo a two-year high school programme with mentored training and practice [39]. Education about dementia care are provided in these programmes. Nursing assistants has no formal health education and are only trained by their nursing home employers [44].

Recruitment

We recruited institutions by emailing invitations to each nursing home director, which was followed by a telephone call from the main author. Participation was voluntary and directors who agreed to participate sent a written consent by email with the potential number of participants and the name of one "coordinator" who could administer the study on site. This task was either assigned to ward managers, the nursing home directors or other staff appointed by directors. Of the 100 initially invited institutions, 27 declined to participate. In Norway, a median size nursing homes has 34 beds; in our initial recruitment phase, a disproportionate number of nursing homes with more than 34 beds rejected participation. To prevent further skewedness, we therefore invited the 30 largest nursing homes from the reserve list. A total of 6337 nursing staff were eligible for inclusion and 3811 returned questionnaires, giving a response rate of 60.1%. Of these, 118 staff members were excluded because they did not work in direct care, worked in day care centres or assisted living facilities, or had not answered any items concerning aggression/abuse. The remaining 3693 participants were included in the analysis, giving an analytic response rate of 58.3%. The flowchart of randomisation and recruitment is shown in Botngård et al. [37].

Study variables and measurements

The primary outcome measure was the extent and nature of all forms of resident-to-resident aggression during the past year; verbal (i.e. criticising, humiliating, threatening), physical (i.e. pushing, kicking, hitting), material (i.e. stealing money/possessions, destroying property) and sexual (i.e. unwelcome touching, discussion of sexual activity, penetration). Estimates of aggression were separated according to nursing home size, location and units. Nursing homes with 50 or fewer beds were considered small, and institutions with more than 50 beds were considered large; the same cut-off value has been used in other studies [43, 45]. The location of municipalities in which the participating nursing homes were situated was specified according to Statistics Norway's centrality measures of municipalities. This is an index reflecting the degree of centrality based on inhabitants' travel time to workplaces and service functions, where level one covers the most central municipalities (biggest cities) and level six the least central (rural villages) [46]. We categorized these levels into three groups: urban (level 1–2), suburban (level 3–4), and rural (level 5–6). Nursing home units in which the participants worked were short- and long-term and dementia special care units.

Measuring resident-to-resident aggression

We translated, modified and used a survey questionnaire developed in the United States (US) by Dr. Nicholas Castle, with his permission. This questionnaire has previously been used in four large surveys of staff to

measure staff-to-resident abuse and resident-to-resident aggression in nursing homes and assisted living facilities [18, 35, 47, 48]. However, this questionnaire has not been validated in the context of resident-to-resident aggression. To the best of our knowledge, no other instruments exist that have measured both staff-to-resident abuse and resident-to-resident aggression in the same study, which was the purpose of this national survey of Norwegian nursing home staff. The description of the original questionnaire [35], translation process and modification of survey instrument, and the pilot study is described in our article of staff-to-resident abuse [37]. The final survey questionnaire contained 23 items measuring how often staff had observed residents committing acts of verbal aggression (7 items), physical aggression (7 items), material aggression (4 items), and sexual aggression (5 items) towards co-residents during the past year, with the following ordinal scale: "Never", "Once", "2–5 times", "6–10 times", and "More than 10 times". Similar scoring values have been used to measure the annual prevalence of staff-to-resident abuse [43, 49, 50] and family violence [51]. The Cronbach's alpha coefficients were 0.9 for verbal aggression and 0.9 for physical aggression. For financial/material and sexual aggression, the alpha coefficients were 0.5, which may be caused by our skewed results (towards "Never"). Nursing home directors completed one short questionnaire concerning facility characteristics.

Data collection

Each nursing home was provided with instruction letters, survey questionnaires with an invitation letter on the first page, and sealed collection boxes. The instruction letter described in detail how the coordinators should administer the survey on site, and the first author contacted all coordinators by phone during the data collection period. No incentive was given directly to participants, but we offered an economic incentive to the eight institutions that achieved the highest response rate, where approximately 900 GBP was dedicated to staff welfare.

Ethical considerations

Participation in the survey was voluntary and nursing home directors who agreed to participate sent a written consent by email to the first author. Participating nursing staff did not write their name or birth date on the questionnaire, and consent from staff was implied upon completion of the survey; when they placed the questionnaire in the sealed collection boxes. They were informed that they could not withdraw their participation after the questionnaire was returned. Each nursing home was assigned a unique code for data analyses. Participants were guaranteed that this code was kept safe by the first author only, and that no one could be identified in any publications. We applied the Regional Ethic Committee for Medical Research, and they approved the study in May 2018, reference number: 2018/314.

Statistical analysis

Data were analysed with Stata 16.1 software package. Descriptive statistics of nursing staff and nursing homes are presented with percentages, means and standard deviations (SD). The Shapiro-Francia test was used to examine the normality of the dependent variable "Aggression", where none of the items were found to be normally distributed ($p < 0.05$). Many items were skewed towards "Never", so we dichotomised the dependent variable to "No aggression" (never) and "Aggression" (one or more incidents). All items under each subtype of aggression are summarised and presented in the text as percentages expressing the number of staff answering positive ("Aggression") on at least one item. Pearson's Chi-square test was conducted to examine the association between facility characteristics and the occurrence of all types of aggression.

Verbal and physical aggression provided some level of distribution, so we created a "chronicity" scale; number of times the set of acts in the scale occurred, among those who had observed one or more acts [51, 52]. This operationalisation of chronicity is often used to deal with skewed distributions when measuring violence [51, 53]. To create this scale, we added midpoints for the response categories as follows: "Once" = 1; "2–5 times" = 3.5; "6–10 times" = 8; "More than 10 times" = 12.5, before all items under each subtype were summed and presented with median and range (Table 2) [51]. A Kruskal-Wallis test was conducted to examine this difference in chronicity score (median) of verbal and physical aggression according to facility characteristics. Missing variables were removed. Considering the large sample size, we did not add any design- or post-stratification weights.

Results

Participant characteristics

Of the participating nursing staff, 91.5% were women, with a mean age of 41.3 years (SD 14.0), 42.6% were licensed practical nurses (high school education), 53.9% worked part-time, and 63.7% worked in long-term care units (Table 1). The nursing homes ranged in size from eight to 161 beds, where 63% were considered small with 50 beds or less. Forty-two percent of nursing homes were in suburban municipalities, and 94% were publicly owned and run by the municipalities.

The extent and nature of resident-to-resident aggression

The total proportion of nursing staff who had observed at least one incident of resident-to-resident aggression during the past year was 88.8% (3010/3389). Among the

Table 1 Characteristics of nursing staff and nursing homes

Characteristics	n (%)	Mean (SD)
NURSING STAFF (*N = 3693*)		
Gender		
Female	3362 (91.5)	
Male	312 (8.5)	
Age (years)		41.3 (14.0)
Professional occupation		
Assistant (no formal health education)	1023 (28.1)	
Licensed practical nurse	1553 (42.6)	
Registered nurse/social educator	1070 (29.3)	
Working time		
Full-time (≥35 h per week)	1503 (46.1)	
Part-time (< 35 h per week)	1757 (53.9)	
Unit of workplace		
Long-term care units	2243 (63.7)	
Dementia special care units	766 (21.8)	
Short-term care units	511 (14.5)	
NURSING HOMES (*N = 100*)		
Facility size (number of beds)		
Small (≤50 beds)	63 (63.0)	
Large (< 50 beds)	37 (37.0)	
Location of municipalities		
Urban (level 1–2)	31 (31.0)	
Suburban (level 3–4)	42 (42.0)	
Rural (level 5–6)	27 (27.0)	
Ownership		
Public	94 (94.0)	
Private	6 (6.0)	

different subtypes, 88.0% (3082/3501) of staff had observed verbal aggression, 69.4% (2473/3565) had observed physical aggression, 24.8% (896/3612) had observed material aggression, and 18.6% (672/3605) had observed sexual aggression at least once during the past year.

Table 2 illustrates nursing staff observations of resident-to-resident aggression during the past year. The most frequently reported acts of verbal aggression were residents arguing (79.1%), yelling (74.7%), and making nasty remarks (69.0%). Regarding physical aggression, the most commonly reported acts were residents behaving aggressively towards other residents (57.4%), bullying (46.8%) and pushing, grabbing or pinching (46.1%). The most prevalent acts of material aggression were residents stealing things (21.3%) and destroying other residents' things (10.1%), while the most prevalent acts of sexual aggression were unwelcome touching (13.5%) and unwelcome remarks of sexual activity (11.5%). Furthermore, 0.61% of staff had observed incidents of digital penetration (e.g. finger) and 0.25% of staff had observed rape.

Characteristics of nursing homes and subtypes of resident-to-resident aggression

Table 3 outlines nursing home characteristics associated with the occurrence of all types of RRA. A higher proportion of staff working in larger nursing homes reported observing one or more acts of physical, material and sexual aggression compared to staff working in smaller nursing homes. A slightly higher proportion of staff working in nursing homes located in urban and suburban reported one or more acts of material aggression than staff in rural areas. A higher proportion of nursing staff working in dementia special care units reported one or more acts of all types of aggression compared to staff in long- and short-term care units.

Table 4 outlines the differences in number of acts of verbal and physical aggression according to facility characteristics. The Kruskal-Wallis test revealed that nursing staff in larger nursing homes reported a higher number of both verbal and physical aggression than nursing staff in smaller nursing homes. Nursing staff working in urban and suburban areas reported a higher number of verbal and physical aggression than nursing staff working in rural areas. Nursing staff working in dementia special care units reported a higher number of verbal and physical aggression than nursing staff working in short- and long-term care units.

Discussion

Our findings indicate that resident-to-resident aggression is a common problem in Norwegian nursing homes, with almost 90% of nursing staff observing at least one incident of RRA during the past year. Verbal and physical aggression were the most commonly reported types but acts of material and sexual aggression were also reported.

It is difficult to compare our rates to previously reported prevalence rates due to the different study methods used. To the best of our knowledge, only the study by Castle [18] used a cross-sectional survey design of staff to explore the extent and nature of RRA in nursing homes, but this study used a reference period of three months and not the past year. Interestingly, the rates in this US study were higher than those in this study, but the rank order of RRA types was the same.

Verbal aggression is often reported as the most prevalent type regardless of study method used [9, 13, 18, 31, 35]. We found that the most prevalent acts reported were residents arguing, yelling, and making nasty remarks, which is similar to that which nursing staff reported in US nursing homes [18] and assisted living facilities [35]. In a nursing home where residents have limited freedom and live in shared and crowded environments, many minor remarks, arguments and incursions in daily life may lead to adverse consequences such as anxiety, depression, dissatisfaction with life, and social

Table 2 Frequency and chronicity score of resident-to-resident aggression ($N = 3693$)

Type of aggression:		How often observed the past year (%):					
		N	Never	Once	2–5 times	6–10 times	> 10 times
Verbal	Yelling	3650	25.3	8.6	23.8	13.4	28.9
	Nasty remarks	3636	31.0	9.5	24.9	11.9	22.7
	Swearing	3650	46.9	8.5	19.3	9.5	15.8
	Humiliating remarks	3606	42.2	10.9	22.8	9.0	15.1
	Arguing	3648	20.9	9.5	27.2	12.6	29.8
	Threatening remarks	3630	59.2	9.1	14.2	6.3	11.2
	Critical remarks	3637	36.5	11.2	24.1	9.4	18.8
Physical	Pushing, grabbing, or pinching	3633	53.9	12.3	18.0	7.9	7.9
	Pulling hair or kicking	3629	77.4	7.0	9.0	3.2	3.4
	Purposely hurting	3635	82.9	6.1	7.0	2.0	2.0
	Throwing things at a resident	3633	75.0	10.2	9.5	2.5	2.8
	Hitting	3630	66.2	11.1	13.9	4.3	4.5
	Bullying	3636	53.2	9.9	18.7	7.4	10.8
	Behaving aggressively towards a resident	3636	42.6	11.9	23.6	9.0	12.9
Material	Stealing money	3636	98.0	1.1	0.6	0.2	0.1
	Stealing things	3637	78.7	5.0	9.0	3.2	4.1
	Signing documents without permission	3631	99.9	0.07	0.03	–	–
	Destroying a resident's things	3640	89.9	3.3	4.4	1.2	1.2
Sexual	Unwelcome touching	3637	86.5	4.5	6.0	1.5	1.5
	Unwelcome discussion of sexual activity	3636	88.5	3.7	5.2	1.4	1.2
	Exposure of a resident's private-body parts	3627	98.7	0.6	0.3	0.2	0.2
	Digital penetration (e.g. finger)	3632	99.39	0.36	0.17	0.08	–
	Rape	3631	99.75	0.22	0.03	–	–
Chronicity score*		**N**	**Median**	**Min**	**Max**		
Verbal aggression		3082	26.5	1	87.5		
Physical aggression		2473	11	1	87.5		

*Median number of times the acts in the scale occurred among those who had observed at least one act of aggression

Table 3 Nursing home characteristics and the occurrence of all types of resident-to-resident aggression, n (%)

Characteristics	Verbal	*p**	Physical	*p**	Material	*p**	Sexual	*p**
Size								
Small (≤50 beds)	1560 (87.4)	0.236	1223 (67.1)	**0.003**	420 (22.8)	**0.004**	306 (16.6)	**0.001**
Large (> 50 beds)	1522 (88.7)		1250 (71.8)		476 (26.9)		366 (20.8)	
Location								
Urban	1037 (88.3)	0.925	838 (69.8)	0.160	326 (26.8)	**0.049**	211 (17.4)	0.356
Suburban	1383 (87.9)		1125 (70.4)		400 (24.7)		315 (19.5)	
Rural	662 (87.8)		510 (66.6)		170 (22.0)		146 (18.8)	
Unit								
Short-term care	394 (80.7)	**0.001**	278 (55.9)	**0.001**	81 (16.2)	**0.001**	71 (14.2)	**0.001**
Long-term care	1885 (88.3)		1465 (67.4)		470 (21.4)		356 (16.2)	
Dementia special care	676 (93.8)		637 (87.0)		316 (42.3)		221 (29.6)	

*Pearson's Chi-square test

Table 4 Number of acts of verbal and physical aggression by nursing home characteristics (median)

Characteristics	Verbal			Physical		
	N	Median	*p*-value*	N	Median	*p*-value*
Size						
Small (≤50 beds)	1560	25	**0.041**	1223	10	**0.001**
Large (> 50 beds)	1522	26.5		1250	11.5	
Location						
Urban	1037	26	**0.011**	838	11.5	**0.006**
Suburban	1383	27.5		1125	11.5	
Rural	662	24		510	9	
Unit						
Short-term care	394	16.5	**0.001**	278	5.25	**0.001**
Long-term care	1885	24		1465	8.5	
Dementia special care	676	44.5		637	21	

*Kruskal Wallis test

loneliness [18, 27]. Such comments and gestures may seem less severe from an outside perspective, but are still perceived as hurtful and distressful for residents [30].

Furthermore, verbal aggression may escalate to physical aggression and residents may be aggressors and victims in the same situations [16, 23]. We found a high occurrence of residents' pushing, grabbing, or pinching, which is in line with findings from other qualitative and quantitative studies [13, 18]. Physical aggression may lead to minor injuries such as bruises, hematomas, or lacerations, but also to more severe injuries including fractures and dislocations [10]. Moreover, deaths in institutions are often attributed to natural, undetermined, or accidental reasons, when they may in fact may be the direct or indirect consequences of aggressive injuries [54]. Murphy et al. [12] found that "push and fall" incidents were the most common cause of deaths from RRA in Australian nursing homes. This was also found in a study by Caspi et al. [11], where 44% of incidents resulting in death in US long-term care homes had a description of a "push-fall" episode, and in a study by DeBois et al. [15], where "push-type" incidents were commonly described as a cause of fatal injury in the US National Violent Death Reporting System.

We found a higher rate of material aggression than what Harris et al. [55] reported in their survey of family members in US nursing homes, but our rates were significantly lower than those reported by US nursing aides in the study by Castle [18]. Harris et al. [55] used the term "inadvertently taking things" when describing material aggression, where others have used terms such as "taking possessions" [18] or "stealing things" [35]. One could argue that, in the context of nursing homes, residents taking items like snacks, clothes or magazines may not be classified as "theft". Nevertheless, the invasion of a person's privacy may create an unpleasant environment, and in the study by Pillemer et al. [30], residents felt harassed and threatened when co-residents wandered into their rooms and touched or took their personal belongings. Furthermore, one may postulate that having regular visits by a relative would prevent material aggression, although Schiamberg et al. [56] found that emotional closeness to family members increased the likelihood of RRA in nursing homes, and the authors deliberated whether the provision of gifts and other amenities substantiated envy and theft by co-residents.

In line with the US study by Castle [18], we found low rates of sexual aggression, but we also found small rates on the most severe acts of sexual aggression: digital penetration and rape. Compared to other vulnerable target populations, such as children and individuals with mental and/or physical impairments, sexual abuse of older people has been the subject of varying attention [57]. In long-term care, the risk of sexual aggression increases as a function of residents' dependency of care, protection and safety [57, 58], and sexual aggression is found to be associated with a variety of adverse mental, physical, and social outcomes for both victims and aggressors [58, 59]. Sexuality is a basic human need related to quality of life and emotional well-being, but sexuality in later life is often challenged by ageism and stereotypes [60, 61]. Many people with dementia show an interest in physical closeness and sex but may not have the capacity to consent to sexual contact [62]. This makes it challenging for staff to delicately navigate between resident's rights to sexually express themselves, but also to protect them from mental and physical harm [58]. A systematic review found that staff members' higher levels of knowledge of older people's sexuality correlated with positive attitudes towards sexuality in nursing homes [61].

When separating our rates according to facility characteristics, we found more observations of aggression in

larger than in smaller institutions, which is in line with the findings by Murphy et al. [12] in Australian nursing homes. Previous studies have found that environmental factors such as a lack of space and crowded areas are triggers of RRA [36], and some larger institutions may have less space per resident compared to smaller nursing homes. We found more observations of aggression in nursing homes located in urban/suburban than in rural located municipalities, which is consistent with the Australian study by Murphy et al. [12] who found more incidents of RRA in metropolitan than in non-metropolitan areas. A possible explanation may be that larger nursing homes are located in urban/suburban municipalities. Nevertheless, these differences in both size and location are not easily explained and should be further explored. Finally, we found more observations of RRA in dementia special care units than in short- and long-term care units, which is consistent with the study by Shinoda-Tagawa et al. [10], who reported that residents in Alzheimer's disease units were almost three times more likely to be injured by RRA compared to residents in other units. This is not a surprising finding considering that many special care units are specially designed for people diagnosed with Alzheimer's disease or related dementias that experience severe neuropsychiatric symptoms [42, 63].

Our study has certain strengths and limitations. Firstly, more of the larger nursing homes rejected participation in the recruitment phase, and one could speculate whether these homes were more "problematic" than those who participated. However, they did not differ in how they were run or located. Secondly, several limitations of the study design may have led to an over- or underestimation of the occurrence of RRA. Our findings were based on observations and reports by nursing staff, which may have led to recall bias when remembering incidents in the past year, and a response bias such as a social desirability not to report sensitive acts of aggression. Moreover, staff are not present in all situations in a nursing home, leaving incidents of RRA unwitnessed and unreported [11, 15]. Further contributing to underreporting, one may assume that nursing staff working full-time witness more events of RRA than staff working part-time, and in our study, over half of the participants worked part-time (Table 1). Another bias is that nursing staff working in the same units may have observed and reported the same incidents of RRA. Thirdly, there is no gold standard of survey instruments to measure the prevalence of RRA, and our instrument had only been used in two previous surveys of staff where the psychometric properties had not been evaluated. Consequently, staff may have defined "pushing, grabbing or pinching" as "behaving aggressively toward a resident" and/or "bullying a resident", increasing the rates of occurrence. Future studies should use factor analysis to evaluate the validity of the survey instrument. Finally, our cross-sectional survey design offers no explanation of causal factors of resident-to-resident aggression in nursing homes.

The strengths of our study are the large sample size of 100 nursing homes and 3693 nursing staff and the high response rate of 60.1%, which allow us to generalise our findings to the rest of the nursing home population in Norway. Moreover, this study is one of the largest staff surveys worldwide to measure the extent and nature of RRA in long-term care facilities.

Detecting the true prevalence of resident-to-resident aggression nursing homes in inherently difficult, and even though our study faces some methodological challenges, we believe the findings provide new knowledge that may have some practical and theoretical implications for care, education, and future research. The CDC states that "*… resident-to-resident aggression … may result when institutions fail to take action to prevent or manage aggression or take actions that are not sufficient to assure resident health and safety*" [14]. Dementia is often highlighted as the ultimate cause of RRA, which undermines the fact that incidents in long-term care settings are often influenced by broader structural conditions and systems [32], which fail to protect and preserve residents in a variety of ways [8, 14, 18]. Several studies have indicated that aggressive behaviours may be the expression of residents' response related to unmet needs such as hunger, pain, personal care, or sexuality, etc. [17, 26, 36, 62], which could be recognised and managed by use of a more "person-centred" approach that identifies the intrinsic value and uniqueness of each individual [26, 32]. Thus, many healthcare staff recognise behaviours of RRA as normal, acceptable and unchangeable [13], which emphasises the need for knowledge and educational programs that make staff better trained to recognise, manage and report RRA [23, 25, 64]. A promising staff training program (SEARCH approach) by Teresi et al. [24] found a significant increase in knowledge, recognition and longitudinal reporting of RRA by staff in the intervention group compared to staff in the control group. To manage behavioural and psychological symptoms of dementia that often result in episodes of RRA, a study by Lichtwarck et al. [65] found that a multicomponent biopsychosocial approach (TIME) significantly reduced the agitation of residents in nursing homes. Moreover, staff who used TIME experienced increased coping in their approach to residents with complex neuropsychiatric symptoms [66]. In addition to educational programs for staff, nursing homes should emphasise on procedures and structures within the organisation e.g. roommate reassignments, physical space, and removing items that can be used as weapons [13, 15, 36]. Furthermore, some

researchers hypothesise that single rooms for nursing home residents may reduce the incidence of RRA [11, 15]. Nevertheless, we need more research on the underlying risk factors within all levels of the social-ecological model, to appropriately design preventive actions.

Conclusions

We believe our study provides new knowledge concerning the extent and nature of resident-to-resident aggression in nursing homes. Our findings may be important for future international comparability and research, and when designing interventions and strategies to improve the quality of life and safety of nursing home residents.

Abbreviations

CDC: Centers for Disease Control and Prevention; RRA: Resident-to-resident aggression; NPS: Neuropsychiatric symptoms; RN: Registered nurse; NH: Nursing home; US: United States; REC: Regional Ethics Committee; SD: Standard deviation; SEARCH: Support, Evaluate, Act, Report Care plan, and Help to avoid; TIME: Targeted Interdisciplinary Model for Evaluation and treatment of neuropsychiatric symptoms; NTNU: Norwegian University of Science and Technology

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Authors' contributions

AB, AHE and WM contributed to the design and concept of the study, analysis and interpretation of the data, and writing the manuscript. LM contributed to the design of the survey questionnaire and critical revision of the article. All authors have read and approved the final manuscript.

Authors' information

The first author is a Ph.D. Candidate in Public Health and Medicine, NTNU, and this study is a part of the Ph.D.-project. A professional Author Editor Service (Proof-Reading-Service.com) proofread the manuscript.

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Availability of data and materials

The dataset used and analysed during the current study are available from the corresponding author on reasonable request.

Ethics approval and consent to participate

All nursing home directors were informed about the study, and those who accepted participation, sent a consent by email to the main author. Information about the survey was given on the first page of the questionnaire. Participating nursing staff did not write their name or birth date on the questionnaire, and consent from staff was implied upon completion of the survey; when they placed the questionnaire in the sealed collection boxes. They were informed that they could not withdraw their participation after the questionnaire was placed in the boxes. We applied the Regional Ethic Committee for Medical Research (REC Central) in Norway, that approved the study in May 2018, reference number: 2018/314.

Consent for publication

Not applicable.

Competing interests

The authors declare that they have no competing interests.

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Publisher's Note

Paper III

Factors associated with staff-to-resident abuse in Norwegian nursing homes: a cross-sectional exploratory study

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Abstract

Background
Elder abuse is a public health problem that is gaining attention due to its serious impacts on people's health and well-being, and it is predicted to increase along with the world's rapidly aging population. Staff-to-resident abuse in nursing homes is a complex and multifaceted phenomenon associated with multiple factors on different levels of the ecological model. This study aimed to explore individual, relational, and institutional characteristics associated with perpetrated staff-to-resident abuse in nursing homes, using a multilevel hierarchical approach.

Methods
This was a cross-sectional exploratory survey of 3,693 nursing staff (response rate 60.1%) in 100 randomly selected nursing homes in Norway. We explored the characteristics of nursing staff, their relationship with residents, and institutional features associated with three types of abuse: psychological abuse, physical abuse, and neglect. These were modeled using multilevel mixed-effects logistic regression analyses.

Results
Individual staff factors found to be associated with all three types of abuse were 1) being a registered nurse/social educator (OR 1.77-2.49) or licensed practical nurse (OR 1.64-1.92), 2) reporting symptoms of psychological distress (OR 1.44-1.46), 3) intention to leave the job (OR 1.35-1.40) and 4) reporting poor attitudes towards people with dementia (OR 1.02-1.15). Also, staff who reported poorer quality of childhood were more likely to perpetrate neglect (OR 1.14). Relational factors such as care-related conflicts (OR 1.97-2.33) and resident aggression (OR 1.36-2.09) were associated with all three types of abuse. Of institutional factors, lack of support from a manager was associated with perpetrating psychological abuse (OR 1.56).

Conclusions
We found several predictors of staff-to-resident abuse on different levels of the ecological model, which underlines the importance of using a multifaceted approach to identify risk factors of elder abuse in nursing homes. However, future studies should explore the underlying mechanism and causes with a prospective or qualitative design and target the multifaceted nature of risk factors when designing preventive interventions.

Keywords
Risk factors, predictors, elder abuse, staff-to-resident abuse, nursing homes, long-term care settings, institutional care settings.

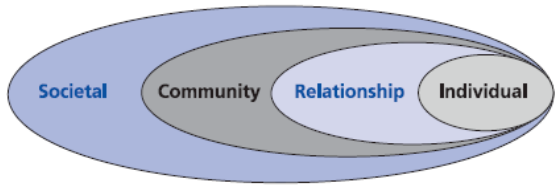
BACKGROUND

Elder abuse is a public health problem affecting one out of six community-dwelling older adults worldwide (1, 2). In nursing homes, residents are particularly vulnerable due to physical and cognitive impairments, and recent studies have found that two out of three nursing home staff admit to perpetrating abusive acts towards residents (3, 4). Elder abuse may adversely affect a person's physical and mental health and cause short- or long-lasting disabilities, bodily pain, somatic problems, anxiety, depression, stress, sleeping difficulties, and/or suicidal ideation, and it may increase the risk of hospitalizations, institutionalizations, and premature death (5). Moreover, elder abuse is linked to societal consequences such as economic expenses and burdens related to the increased use of healthcare services, as well as those incurred by the law enforcement and criminal justice systems (5, 6).

Most research on elder abuse has been conducted in the community rather than in institutional care settings (7), even though older adults who live in institutional care settings have much greater vulnerabilities to abuse compared to those who live in the community. In addition, the vast majority of elder abuse studies have been conducted in the United States (US) (8). Previous literature has used a wide range of conceptual and operational definitions, theoretical approaches, study designs, data collection methods, and measurement instruments to capture the extent and nature of elder abuse (9-11). Centers for Disease Control and Prevention (CDC) defines elder abuse or mistreatment as 'an intentional act or failure to act by a caregiver or another person in a relationship involving an expectation of trust that causes or creates a risk of harm to an older adult'; this includes psychological, physical, sexual, financial/material abuse, and intentional or unintentional neglect (12).

Elder abuse is a complex and multifaceted phenomenon (13) and identifying potential risk factors for staff-to-resident abuse in nursing homes is an essential first step to prevent or reduce the mistreatment of vulnerable residents (14). Several theories have been applied from the fields of child maltreatment, intimate partner violence, psychology, and sociology, to explain and predict causes of elder abuse (15). However, no single theory may fully explain its nature. To accommodate its complexity, an ecological model has been recognized as valid and suitable to identify potential risk factors of elder abuse (14, 16-19). Ecological theories of elder mistreatment have relied upon Bronfenbrenner's *ecological model* that suggests that individuals are embedded in different environmental systems that interact with each other and the individual, and researchers have used different variations of this model as the foundation of elder abuse research (19). World Health Organization (WHO) outlines a four-level ecological model (Figure 1) that illustrates the dynamic interaction and complex interplay between individual, relational, community, and societal factors, where the overlapping circles illustrate how factors at one level influence factors at the other levels (17). The first level in this ecological model seeks to explore individual risk factors related to both the victim (resident) and the perpetrator (staff), and the second level examines their dynamic relationship, as well as their relations with other people in the immediate environment (e.g. relatives) (14). The third level explores community contexts or institutional care factors that may influence the risk of elder abuse, and the fourth level examines the larger societal issues such as ageism, cultural norms and beliefs, and economic and social factors (14).

Figure 1. World Health Organization's ecological model for understanding violence (17).



Previous literature has consistently reported some important risk factors for staff-to-resident abuse. Nursing home residents with physical disabilities, dementia and/or cognitive decline, high care needs, and challenging behaviours are at higher risk of being abused (20). Staff predictors include poor overall health, burnout or emotional exhaustion, job dissatisfaction, intention to leave the job, and holding negative attitudes towards older

people (20-24). Within families, childhood abuse has been reported as a risk factor for perpetrating elder abuse in later life (25), but to our knowledge, this has not been explored in the context of a formal caregiver/resident relationship. There are inconsistent reports regarding demographics of an abusive staff member: studies report both young (26, 27) and older perpetrators (22), males (4, 28) and females (4), with lower (29, 30) and higher levels of education (4, 22). People suffering from dementia often develop neuropsychiatric symptoms (NPS) such as agitation and aggressive behaviours, and the presence of such symptoms has been related to caregiver distress (31). Numerous studies have posited an association between high levels of assaults/aggression towards staff and staff/resident conflicts with a higher occurrence of staff-to-resident abuse (21-23, 32, 33).

Elder abuse that occurs in institutional care settings is sometimes referred to as 'institutional maltreatment', and several individual staff characteristics may be linked to or caused by the institutional context (14). Institutional factors such as high workload/stress, no social interactions or support from managers and/or co-workers, and insufficient teamwork and safety climates have been shown to influence the risk of staff-to-resident abuse (20, 23, 24, 28, 29, 34). Moreover, facility characteristics such as both smaller and larger nursing homes located in urban and rural areas have been related to a higher prevalence of staff-to-resident abuse (4, 21, 22, 30, 35).

WHO (2014) emphasizes that a successful response to prevent and manage all types of violence involves a four-step public health approach that determines the scope and consequences (step one), causes and predictors (step two), design, implementation, and evaluation of interventions (step three), and then utilizes evidence-based actions to monitor impact and cost-effectiveness (step four) (36). In past decades, progress has been made in defining the extent and nature of staff-to-resident abuse in nursing homes, but research on many aspects, including the evidence of causes and predictors (step two), is still limited (2, 20). The primary objective of this study was to explore various individual, relational, and institutional factors associated with staff-to-resident psychological abuse, physical abuse, and neglect in Norwegian nursing homes.

METHODS

Study design

This study was a cross-sectional exploratory survey of nursing staff in 100 Norwegian nursing homes randomly selected from the Central Register of Establishments and Enterprises (CRE). The study was carried out from October 2018 to January 2019 as part of a larger national study aimed to measure the extent and nature, and explore the risk factors, of different types of abuse/aggression that occur in nursing homes: relative-to-resident abuse, resident-to-resident aggression (37), and observed/perpetrated staff-to-resident abuse (4).

Setting

All public and private nursing homes were eligible for inclusion. In Norway, municipalities own and operate the vast majority of nursing homes (> 90%), which contain both short- and long-term care units and are designed for residents who need a high degree of medical care and assistance in daily activities (38). About 80% of residents in Norwegian nursing homes suffer from dementia-related illnesses (39).

Sample size and randomisation

There exist few national studies, and all studies measuring the prevalence of staff-to-resident abuse use different measurement instruments (40). We did not statistically compute a sample size but decided to include 100 nursing homes, which is approximately 10% of all nursing homes in Norway (n = 939). In comparison, the national survey on staff-to-resident interactions and conflicts in Ireland included 64 out of 613 nursing homes and 3,000 staff questionnaires (21). To obtain a representative sample, we used a computerized random number generator to select the 100 nursing homes. We also randomly selected 50 institutions as reserve homes if institutions declined to participate.

Participants

Eligible participants were nursing staff who provided direct patient care during the three weeks of data collection. We included part- and full-time nursing staff working on all shifts, social educators, registered nurses, licensed practical nurses, and nursing assistants with no formal health education. In Norwegian nursing homes, an average of 31% of nursing staff are registered nurses, 2.5% social educators, 42.5% licensed practical

nurses, and 24% are nursing assistants (41). Norwegian registered nurses and social educators must complete a three-year bachelor's degree, and licensed practical nurses to obtain a certificate upon completion of vocational training in high school (38).

Recruitment of nursing homes

To recruit nursing homes, study information was emailed to each nursing home director, followed by a telephone call from the first author. Participation was voluntary, and directors who agreed to participate responded by email with the potential number of participants and one 'coordinator' who could administer the study on-site. This task was either assigned to the unit managers, the nursing home directors, or others appointed by the directors. Of the initial 100 invited nursing homes, 27 declined participation, of which many were above the median size of 34 beds (42). Hence, to prevent further skewness, we started recruiting the largest nursing homes and included 27 institutions from the reserve list.

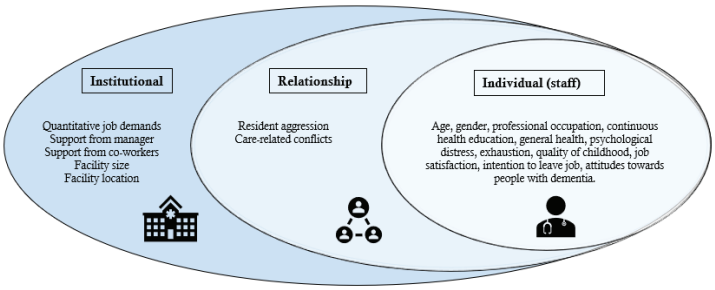
Recruitment of nursing staff

Each nursing home coordinator was provided with instruction letters, survey questionnaires with invitation letters, and sealed collection boxes. The instruction letter described in detail how the coordinators should administer the survey on-site, and the first author had contact with all coordinators by phone during the data collection period. The staff's participation was voluntary. We offered an economic incentive of approximately 900 GBP, dedicated to the welfare of staff, to the eight institutions that achieved the highest response rate. A total of 6,337 nursing staff were eligible for inclusion, and 3,811 returned questionnaires (response rate of 60.1%). Of these, 118 participants were excluded mainly because they did not work in direct care. Overall, 3,693 nursing staff participated, giving an analytical response rate of 58.3 percent. A flowchart of the recruitment is shown in Botngård et al. (2020) (4).

Study variables

Table 1 comprises a detailed description of the independent variables as well as the measurement instruments with Cronbach's alpha coefficients reported in the (original) validation studies and the current study. The dependent variable was the prevalence of perpetrated psychological abuse, physical abuse, and neglect during the past year. The prevalence rates and full description of how these were measured are thoroughly described in our article on staff-to-resident abuse in Norwegian nursing homes (4). We did not analyse sexual and financial/material abuse due to the low prevalence rates. We used WHO's four-level ecological model and previous literature on staff-to-resident abuse to guide our choice of factors (independent variables) to include, and we explored individual factors of staff, staff/resident relational factors, and institutional factors (Figure 2).

Figure 2. Study factors (independent variables) on three out of four levels of the ecological model



Measurements

Individual staff factors

Nursing staff's overall health was measured with a single item generally accepted as useful to assess a person's health status (43). Psychological distress was measured with the Hopkins Symptom Checklist (SCL); an instrument widely used to measure self-reported general symptoms of anxiety and depression in population surveys, and the instrument exists in several versions with items ranging from 5 to 90 (44). Strand et al. (2003)

(44) translated the instrument into Norwegian and in the validation process, they found that the short version with only five items (SCL-5) was equally good to measure psychological distress as the version comprising 25 items. SCL-5 measures different symptoms during the last 14 days on a 4-point Likert-scale ranging from not bothered to very bothered, and according to Strand et al. (2003) (44), a mean cut-off value of ≥ 2.0 qualifies as psychological distress. In the study by Strand et al. (2003) (44), Cronbach's alpha was reported to be 0.88. When used in the current study, Cronbach's alpha was 0.86. Feelings of exhaustion and overall quality of own childhood were measured with single items previously used in a large population-based cohort in Norway, the Nord-Trøndelag Health Study (HUNT3) (45). Job satisfaction was measured with a single item previously found acceptable to measure the overall job satisfaction (46). Staff's intention to leave their jobs was measured with a single item used in other studies of elder abuse in nursing homes (21, 27).

To measure nursing staff's attitudes towards residents with dementia, we used one subscale ('Hope') of the instrument, Approaches to Dementia Questionnaire (ADQ), that has been used on healthcare staff in different settings including nursing homes (47-50). ADQ was developed by Lintern (2001) (51) as a self-report instrument to measure healthcare professionals' attitudes towards persons with dementia, and the instrument consists of two subscales: 'Hope' (8 items) and 'Recognition of Personhood' (11 items). 'Hope' reflects respondents' feelings of optimism or pessimism of the current and future condition of persons with dementia and comprises solely negatively loaded items on a 5-point Likert scale ranging from 'strongly agree' to strongly 'disagree' (51). A composite score is obtained by summing the score of each item in the subscale (ranging from 8-40), where a higher score reflects more positive attitudes towards persons with dementia. This instrument was translated into Norwegian by Kada et al. (2009) (52) and used to explore the attitudes to dementia perceived by 291 nursing staff in 14 nursing homes and one hospital-based geriatric ward in Norway (52). However, the authors did not report any psychometric properties of the translated version. When developed by Lintern (2001) (51), the hope dimension showed a Cronbach's alpha level of 0.76, wherein this study, the Cronbach's alpha was 0.74.

Relational factors

Resident aggression may be considered an individual factor of residents, but in this study, we measured aggressive acts directed towards staff, and thus, we included this variable as a relational factor. We measured resident aggression with a modified version of a scale (five items) developed and used by Malmedal et al. (2014) (22) in Norwegian nursing homes. We also used a modified version of a scale (four items) from Malmedal et al. (2014) (22) to measure care-related conflicts between nursing staff and residents. In both scales, the values were scored on a 4-point Likert scale ranging from 'never' to 'more than once a week'. These two dimensions had not been excessively validated by factor analysis, but the authors reported acceptable Cronbach's alpha levels of 0.79 on resident aggression and 0.77 on care-related conflicts. The study by Malmedal et al. (2014) (22) did however measure if nursing staff had *ever* experienced any acts of aggression/conflicts, while in the current study we wanted to measure the annual prevalence of such acts. Also, considering that resident aggression towards staff is highly prevalent, sometimes occurring daily (53), the scoring values were altered to a Likert scale ranging from 1 to 5; 'daily, weekly, monthly, rarely, never', where average scores were calculated for each scale; higher scores indicating less aggression/conflicts. In the current study, Cronbach's alpha levels were 0.81 on resident aggression and 0.87 on care-related conflicts.

Institutional factors

In this study, we included three work environment factors and two facility features on the institutional level. Quantitative job demands were assessed by the General Nordic Questionnaire for Psychological and Social Factors at Work (QPS_{Nordic}) (54), and we also measured staff's experience of social interactions at work (support from nearest manager and support from co-workers) with subscales from the QPS_{Nordic} (54). The QPS_{Nordic} is a widely used instrument specifically designed for the assessment of psychological, social, and organizational work conditions of employees from various sectors including the healthcare sector, in Nordic countries (54). The scale quantitative job demands contain four items, support from nearest manager contain three items, and support from co-workers contain two items, where all items are scored on a 5-point Likert scale ranging from 'very seldom/never' to 'very often/always', and average scores are calculated for each subscale (54). In the quantitative job demand scale; higher scores indicate more demands, while on the other scales; higher scores

indicate more support from managers and coworkers. In the validation study by Elo et al. (2000) (54), Cronbach's alpha levels were 0.73 on job demands, 0.83 on support from manager, and 0.80 on support from co-workers, while in the current study, Cronbach's alpha levels were 0.72, 0.85, and 0.73, respectively. We used a multilevel approach to explore the potential hierarchical interplay between individual and institutional factors with nursing staff nested within nursing homes. Thus, the median score of these three work environment scales was aggregated from the individual to the nursing home level.

Facility size was measured by the number of beds. The location of municipalities in which the participating nursing homes were situated was specified according to Statistics Norway's centrality measures. This index reflects the degree of centrality based on inhabitants' travel time to workplaces and service functions, where level one covers the most central municipalities (biggest cities) and level six the least central (rural villages) (55). We categorized these levels into three areas: urban (Levels 1-2), suburban (Levels 3-4), and rural (Levels 5-6).

Table 1. A detailed description of the survey questionnaire and Cronbach's alpha coefficients

	Variables	Measurements	Scoring values, used in analyses	α (original study)	α (current study)
Individual (staff)	Gender		0 = Female 1 = Male	-	-
	Age	Years	The continuous variable used in analyses	-	-
	Occupation	Professional occupation	0 = Nursing assistant (no health education) 1 = Licensed practical nurse 2 = Registered nurse/social educator	-	-
	Continuous health education	'Do you have continuous education in healthcare?'	0 = Yes 1 = No	-	-
	Overall health	'How is your health in general?'	Likert scale 1-5: very good → very bad	-	-
	Exhaustion	HUNT3 'Do you feel exhausted/tired?'	0 = No 1 = Yes	-	-
	Psychological distress	SCL (5 items) E.g., feeling hopeless about the future, worrying too much, (past 14 days)	Likert scale 1-4: not bothered → very bothered Mean score cut-off ≥2.0 0 = No psychological distress 1 = Psychological distress (≥2.0)	0.88	0.86
	Quality of childhood	HUNT3 'When you think about your childhood, would you describe it as …'	Likert scale 1-5: very good → very difficult	-	-
	Job satisfaction	'How satisfied are you with your job in general?'	Likert scale 1-5: very satisfied → very unsatisfied	-	-
	Intention to leave	'During the past 12 months, have you considered leaving your job?'	0 = No 1 = Yes	-	-
	Attitudes	ADQ – 'Hope' dimension (8 items) E.g., strict routines, no hope	Likert scale 1-5: strongly agree → strongly disagree Composite score 8-40 → higher score = more positive [a]	0.76	0.74
Relation	Resident aggression	Malmedal – five items E.g., thrown objects, pinched, beat	Likert scale 1-5: daily → never Average score → higher score = less aggression [a]	0.79	0.81
	Care-related conflicts	Malmedal – four items E.g., refuse to eat, bathe, dress	Likert scale 1-5: daily → never Average score → higher score = less conflicts [a]	0.77	0.87
Institutional	Quantitative job demands	QPS_{Nordic} – four items E.g., time pressure, amount of work	Likert scale 1-5: very seldom/never → very often/always Average score → higher score = more demands	0.73	0.72
	Support from manager	QPS_{Nordic} – three items E.g., support, help	Likert scale 1-5: very seldom/never → very often/always Average score → higher score = more support [a]	0.83	0.85
	Support from co-workers	QPS_{Nordic} – two items E.g., support, listening	Likert scale 1-5: very seldom/never → very often/always Average score → higher score = more support [a]	0.80	0.73
	Facility size	Number of beds	The continuous variable used in analyses	-	-
	Location of municipalities	Centrality index from 1-6	0 = Urban (Levels 1-2) 1 = Suburban (Levels 3-4) 2 = Rural (Levels 5-6)	-	-

a) Scale/score reversed in regression analysis.

Ethical considerations

The study was approved by the Regional Committee for Medical and Health Research Ethics (May 2018, reference number: 2018/314). Participants did not write their names or birthdates on the questionnaires, and consent from the staff was obtained upon completion when they placed the questionnaires in the sealed collection boxes. They were informed that they could not withdraw their participation after the questionnaire was returned. Each nursing home was assigned a unique code for data analyses. Participants were guaranteed that this code was kept safe and that no one could be identified in reports or publications.

Statistical analysis

Data were analysed with Stata 16.1 software package (56). We assessed normality with the Shapiro-Francia test, and no variables were normally distributed. The dependent variable was highly skewed towards 'Never'; thus, we dichotomized the variable to 'No abuse' (never) and 'Abuse' (one or more incidents). Characteristics of individual, relational, and institutional factors are presented with percentages (frequencies) and median (range). Prevalence rates of psychological abuse, physical abuse, and neglect are described with percentages (frequencies). We used bivariate logistic regression to examine associations between the dependent variable and all independent variables identified in Table 1. Our choice of covariates to be included in the multivariate logistic regression model was guided by previous empirical investigations, knowledge of potential spurious factors, and/or a p-value < 0.2 (57, 58).

In logistic regression analyses, some basic assumptions must be met (58). Firstly, the independent variables should be linearly related to the log odds of the dependent variable, which we tested with the 'linktest', and non-linear variables were improved with polynomial terms or dichotomised by the median score into equal groups. Secondly, the multivariate models should have little or no multicollinearity, which we tested with Spearman's correlation coefficients < 0.8, Tolerance (T) measures < 0.1, and Variance Inflation Factor (VIF) > 10 as indicators of multicollinearity (59). Thirdly, there must be an adequate number (10-20) of observations per covariate to avoid an overfit model, which was not a problem in our large survey. Finally, logistic regression analyses require that observations be independent, but in this study, the nursing staff was nested within nursing homes (clusters), and contextual effects (institutional factors) may have affected their responses. Consequently, we used multilevel mixed-effects logistic regression to test the variance between nursing homes, where the nursing staff was set at level 1 and nursing homes at level 2. Multilevel models 'incorporate cluster-specific random parameters that account for the dependency of the data by partitioning the total individual variance into variation due to the clusters or higher-level units and the individual-level variation that remains' (page 3258) (60). We assessed the importance of these clusters with the intraclass correlation coefficient (ICC) and standard error (SE).

Effect sizes are presented as odds ratio (OR) with 95% confidence interval (CI) and exact *p*-values, and we will report results from the full models. The regression models' overall fits to the data were assessed with the Hosmer-Lemeshow goodness-of-fit test (10 groups). Missing data were removed. Our dependent variables had missing data ranging from 5.8-7.2%, but we chose not to replace missing values with the mean or median due to the highly skewed nature of the data (61). Since we included many covariates, each with some missing data, we lost about 25% of observations in the full regression models. This may have caused our estimates to be less precise or biased if the complete cases differed systematically from the incomplete cases (62). Considering that our remaining sample size was still large ($n \geq 2{,}773$), we chose not to compute multiple imputations of missing data. We did not add any design or post-stratification weights.

RESULTS

Characteristics of nursing staff and nursing homes

Detailed descriptions of nursing homes and nursing staff are presented in Table 2. Nursing staff who responded were typically women (91.0%), with a median age of 41 years (range 16-75), where 42.1% were licensed practical nurses, and 65.9% had no continuous health education. The nursing homes ranged in size from eight to 161 beds (median 38.5), where 42% were located in suburban areas, 31% in urban, and 27% in rural areas.

Table 2. Characteristics of nursing staff (N=3,693) and nursing homes (N=100)

Variables	Response values	n (%) [a]	Median (range)	*Missing, n (%)*
Individual (staff)				
Gender	Female	3362 (91.0)		*19 (0.5)*
	Male	312 (8.5)		
Age	Years		41 (16-75)	*236 (6.4)*
Professional occupation	Nursing assistant	1023 (27.7)		
	Licensed practical nurse	1553 (42.1)		*47 (1.3)*
	Registered nurse/social educator	1070 (28.9)		
Continuous health education	No	2433 (65.9)		
	Yes	1076 (29.1)		*184 (5.0)*
Overall health	Very good	1293 (35.0)		
	Good	1923 (52.1)		
	Neither good nor bad	405 (11.0)		*21 (0.6)*
	Bad	48 (1.3)		
	Very bad	3 (0.08)		
Exhaustion	No	2692 (72.9)		*40 (1.1)*
	Yes	961 (26.0)		
Psychological distress	No psychological distress	2939 (79.6)		*191 (5.2)*
	Psychological distress	563 (15.2)		
Quality of childhood	Very good	1814 (49.1)		
	Good	1264 (34.2)		*34 (0.9)*
	Average	386 (10.5)		
	Difficult	155 (4.2)		
	Very difficult	40 (1.1)		
Job satisfaction	Very satisfied	1659 (44.9)		
	Satisfied	1583 (42.9)		
	Neither/nor	360 (9.7)		*18 (0.5)*
	Unsatisfied	62 (1.7)		
	Very unsatisfied	11 (0.3)		
Intention to leave the job	No	2409 (65.2)		*64 (1.7)*
	Yes	1220 (33.0)		
Attitudes	Higher score = more positive attitudes [b]		28 (8-40)	*264 (7.2)*
Relational				
Resident aggression	Higher score = less aggression		4.2 (1-5)	
	Dichotomised: [b, c]			*107 (2.9)*
	- High aggression (median 1.0-4.2)	1866 (50.5)		
	- Less aggression (median 4.3-5.0)	1720 (46.6)		
Care-related conflicts	Higher score = less conflicts		4.0 (1-5)	
	Dichotomized: [b, c]			*129 (3.5)*
	- High conflicts (median 1.0-3.9)	1633 (44.2)		
	- Few conflicts (median 4.0-5.0)	1931 (52.3)		
Institutional				
Quantitative job demands	Higher score = more demands [c]		2.7 (1-5)	*0*
Support from manager	Higher score = more support [c, d]		4.0 (1-5)	*0*
Support from co-workers	Higher score = more support [c, d]		4.0 (1-5)	*0*
Facility size	Number of beds		38.5 (8-161)	*0*
Location of municipalities	Urban (levels 1-2)	31 (31.0)		
	Suburban (levels 3-4)	42 (42.0)		*0*
	Rural (levels 5-6)	27 (27.0)		

a) Due to rounding errors, not all numbers add up to 100 percent.
b) Variable dichotomized due to non-linearity.
c) Scale/score reversed in regression analysis.
d) Median score aggregated from individual to nursing home level.

Risk factors of psychological abuse

The intraclass correlation coefficient of the psychological abuse model (intercept only) was 0.067, indicating that 6.7% of the variance of data was *between* nursing homes (Table 3). The ICC decreased to 4.7% and 3.7%, respectively, when individual and institutional factors were included in the models.

Adjusted psychological abuse model

As shown in Table 3, four individual staff factors, both relational factors, and one institutional factor made a statistically significant contribution to the psychological abuse model. Of the individual staff factors, predictors were 1) being a registered nurse/social educator (OR 1.77) or licensed practical nurses (OR 1.64), 2) reporting symptoms of psychological distress (OR 1.46), and 3) intention to leave the job (OR 1.35). Also, for every unit increase on the attitude scale (poor attitudes) (OR 1.02), nursing staff were more likely to perpetrate psychological abuse. Regarding relational factors, staff who reported high levels of resident aggression (OR 1.76) and conflicts with residents (OR 2.33) were more likely to perpetrate psychological abuse than staff who reported less aggression and fewer conflicts. Concerning institutional factors, the only predictor of psychological abuse was staff experiencing a lack of support from a manager (OR 1.56).

Table 3. Bivariate and multilevel mixed-effects logistic regression of risk factors of psychological abuse

Characteristics	Bivariate logistic regression			Mixed effect logistic regression model 1*			Mixed effect logistic regression model 2*		
	OR	95% CI	*p*	OR	95% CI	*p*	OR	95% CI	*p*
Fixed effects									
Nursing staff									
Gender (0=female, 1=male)	1.10	0.86-1.41	0.437	1.23	0.90-1.67	0.190	1.22	0.90-1.65	0.204
Age (in years)	1.00	0.99-1.00	0.598	1.00	0.99-1.00	0.468	1.00	0.99-1.00	0.366
Professional occupation (ref: nursing assistant)									
Licensed practical nurse	1.59	1.34-1.88	**<0.001**	1.62	1.29-2.03	**<0.001**	1.64	1.30-2.06	**<0.001**
Registered nurse/social educator	1.68	1.39-2.01	**<0.001**	1.74	1.37-2.21	**<0.001**	1.77	1.40-2.25	**<0.001**
Continuous health education (0=yes, 1=no)	0.95	0.81-1.10	0.494	-	-	-	-	-	-
Overall health (1=very good, 5=very bad)	1.31	1.18-1.44	**<0.001**	1.10	0.96-1.25	0.176	1.09	0.96-1.25	0.195
Feeling exhausted (0=no, 1=yes)	1.73	1.48-2.02	**<0.001**	0.95	0.77-1.18	0.640	0.94	0.76-1.16	0.554
Psychological distress (0=no, 1=yes)	1.96	1.62-2.37	**<0.001**	1.45	1.14-1.85	**0.003**	1.46	1.14-1.86	**0.003**
Childhood (1=very good, 5=very difficult)	1.15	1.07-1.24	**<0.001**	1.04	0.95-1.15	0.379	1.04	0.95-1.15	0.373
Job satisfaction (1=very satisfied, 5=very unsatisfied)	1.57	1.43-1.73	**<0.001**	1.12	0.98-1.28	0.094	1.11	0.97-1.26	0.128
Intention to leave (0=no, 1=yes)	1.95	1.68-2.25	**<0.001**	1.35	1.11-1.65	**0.003**	1.35	1.10-1.65	**0.003**
Attitudes (8-40 → higher score=poor attitudes)	1.02	1.01-1.04	**<0.001**	1.02	1.01-1.04	**0.012**	1.02	1.01-1.04	**0.012**
Relational									
Resident aggression (0= less aggression, 1=high aggression)	2.68	2.32-3.10	**<0.001**	1.81	1.51-2.16	**<0.001**	1.76	1.47-2.11	**<0.001**
Care-related conflicts (0= few conflicts, 1=high conflicts)	2.76	2.39-3.18	**<0.001**	2.31	1.95-1.75	**<0.001**	2.33	1.96-2.77	**<0.001**
Institutional									
Job demands (1-5 → higher score=more demands)	1.62	1.19-2.21	**0.002**				0.89	0.50-1.58	0.700
Support from manager (1-5 → higher score=less support)	1.64	1.34-2.00	**<0.001**				1.56	1.08-2.25	**0.018**
Support from co-workers (1-5 → higher score=less support)	1.75	1.38-2.21	**<0.001**				1.23	0.80-1.90	0.352
Size (number of beds)	1.00	1.00-1.00	0.953				1.00	0.99-1.00	0.534
Location (ref: urban)									
Suburban	1.12	0.96-1.32	0.143				1.19	0.90-1.58	0.221
Rural	1.23	1.02-1.48	**0.032**				1.13	0.80-1.59	0.479
Random effects									
N					2777			2777	
Intraclass Correlation Coefficient (ICC)					0.047			0.037	
Standard Error (SE)					0.016			0.014	

Intercept only model: N (obs.) = 3427, N (groups) = 100, ICC = 0.067, SE = 0.016

*Model 1 = level 1-variables, model 2 = level 1- and 2-variables.

Risk factors of physical abuse

The intraclass correlation coefficient of the physical abuse model (intercept only) was 0.027, indicating that 2.7% of the variance of data was *between* nursing homes (Table 4). The ICC decreased to zero when individual and institutional factors were included in the models.

Adjusted physical abuse model

As shown in Table 4, four individual staff factors and both relational factors made a significant contribution to the physical abuse model. Staff predictors were 1) being a registered nurse/social educator (OR 2.49) or licensed practical nurse (OR 1.92), 2) reporting symptoms of psychological distress (OR 1.62), and 3) intention to leave the job (OR 1.40). The odds of physical abuse significantly increased with an OR of 1.03 for each unit increase on the attitude scale, indicating that poor attitudes were associated with perpetrating physical abuse. Regarding relational factors, staff who reported high levels of resident aggression (OR 2.09) and conflicts with residents (OR 2.18) were more likely to perpetrate physical abuse than staff who reported less aggression and fewer conflicts.

Table 4. Bivariate and multilevel mixed-effects logistic regression of risk factors of physical abuse

Characteristics	Bivariate logistic regression			Mixed effect logistic regression model 1*			Mixed effect logistic regression model 2*		
	OR	95% CI	*p*	OR	95% CI	*p*	OR	95% CI	*p*
Fixed effects									
Nursing staff									
Gender (0=female, 1=male)	1.76	1.25-2.47	**0.001**	1.46	0.95-2.24	0.087	1.51	0.98-2.32	0.062
Age (in years)	1.00	0.99-1.01	0.910	1.00	0.99-1.01	0.705	1.00	0.99-1.01	0.690
Professional occupation (ref: nursing assistant)									
Licensed practical nurse	1.48	1.09-2.02	**0.012**	1.90	1.29-2.82	**0.001**	1.92	1.30-2.85	**0.001**
Registered nurse/social educator	1.98	1.45-2.71	**<0.001**	2.48	1.67-3.68	**<0.001**	2.49	1.68-3.70	**<0.001**
Continuous health education (0=yes, 1=no)	1.03	0.80-1.33	0.795	-	-	-	-	-	-
Overall health (1=very good, 5=very bad)	1.27	1.08-1.49	**0.003**	1.02	0.83-1.25	0.858	1.02	0.83-1.25	0.878
Feeling exhausted (0=no, 1=yes)	1.59	1.25-2.02	**<0.001**	1.00	0.73-1.37	0.995	1.00	0.73-1.38	0.987
Psychological distress (0=no, 1=yes)	2.01	1.54-2.62	**<0.001**	1.61	1.15-2.24	**0.005**	1.62	1.16-2.27	**0.005**
Childhood (1=very good, 5=very difficult)	1.16	1.03-1.31	**0.013**	1.09	0.95-1.25	0.218	1.10	0.96-1.26	0.185
Job satisfaction (1=very satisfied, 5=very unsatisfied)	1.43	1.25-1.65	**<0.001**	1.01	0.84-1.22	0.901	1.02	0.84-1.23	0.860
Intention to leave (0=no, 1=yes)	1.81	1.44-2.27	**<0.001**	1.40	1.04-1.89	**0.026**	1.40	1.04-1.89	**0.028**
Attitudes (8-40 → higher score=poor attitudes)	1.02	1.00-1.05	0.052	1.03	1.01-1.06	**0.014**	1.03	1.01-1.06	**0.013**
Relational									
Resident aggression (0= less aggression, 1=high aggression)	2.85	2.21-3.67	**<0.001**	2.10	1.56-2.84	**<0.001**	2.09	1.54-2.83	**<0.001**
Care-related conflicts (0= few conflicts, 1=high conflicts)	2.81	2.20-3.59	**<0.001**	2.18	1.64-2.89	**<0.001**	2.18	1.64-2.89	**<0.001**
Institutional									
Job demands (1-5 → higher score=more demands)	1.48	0.89-2.46	0.133				1.35	0.66-2.75	0.409
Support from manager (1-5 → higher score=less support)	0.97	0.70-1.35	0.877				0.65	0.41-1.04	0.072
Support from co-workers (1-5 → higher score=less support)	1.35	0.91-1.98	0.134				1.20	0.70-2.05	0.518
Size (number of beds)	1.00	1.00-1.00	0.864				1.00	1.00-1.01	0.811
Location (ref: urban)									
Suburban	1.18	0.90-1.54	0.230				1.18	0.85-1.63	0.326
Rural	1.36	1.00-1.84	0.052				1.43	0.95-2.16	0.089
Random effects									
N					2797			2797	
Intraclass Correlation Coefficient (ICC)					9.90e-35			3.90e-35	
Standard Error (SE)					9.13e-19			4.75e-19	

Intercept only model: N (obs.) = 3477, N (groups) = 100, ICC = 0.027, SE = 0.020

*Model 1 = level 1-variables; Model 2 = level 1- and 2-variables.

Risk factors of neglect

The intraclass correlation coefficient of the neglect model was 0.020, indicating that 2.0% of the variance of data was *between* nursing homes (Table 5). The ICC decreased to 1.2% and 0.8%, respectively, when individual and institutional factors were included in the models.

Adjusted neglect model

As shown in Table 5, five individual staff factors and both relational factors made a significant contribution to the neglect model. Predictors of neglect were 1) being a registered nurse/social educator (OR 1.81) or licensed practical nurse (OR 1.77), 2) reporting symptoms of psychological distress (OR 1.44), 3) intention to leave the job (OR 1.39) and 4) poor quality of childhood (OR 1.14). Here, we found an interaction term between staff's gender, age, and neglect, and by entering this interaction, the gender variable became significant. A margins plot illustrates that for each year, males reported fewer acts of neglect, whilst females reported more acts (Figure 3).

Further, our analyses showed that the variable 'Attitudes' had a curvilinear relationship with neglect, so by entering a quadratic polynomial term, a margins plot illustrates that staff with poor attitudes were more likely to perpetrate neglect to a certain point on the composite scale before they reported fewer acts of neglect (Figure 4). Concerning relational factors, staff who reported high levels of resident aggression (OR 1.36) and conflicts with residents (OR 1.97) were more likely to perpetrate neglect than staff who reported less aggression and fewer conflicts.

Figure 3. Margins plot of the interaction between gender, age, and neglect

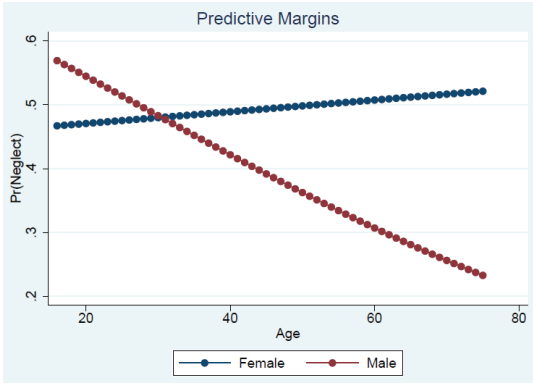


Figure 4. Margins plot of the quadratic polynomial term for attitudes and neglect

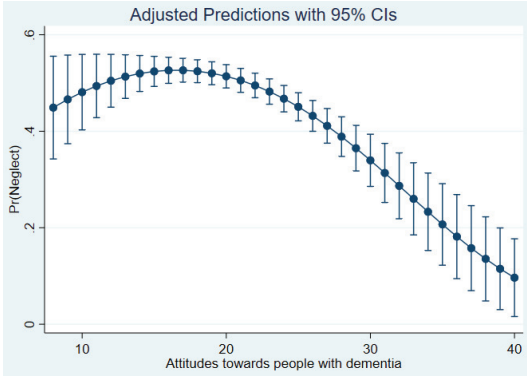


Table 5. Bivariate and multilevel mixed-effects logistic regression of risk factors of neglect.

Characteristics	Bivariate logistic regression			Mixed effect logistic regression model 1*			Mixed effect logistic regression model 2*		
	OR	95% CI	*p*	OR	95% CI	*p*	OR	95% CI	*p*
Fixed effects									
Nursing staff									
Gender (0=female, 1=male)	0.76	0.59-0.97	**0.026**	2.52	0.99-6.39	0.052	2.67	1.05-6.79	**0.039**
Age (in years)	1.00	1.00-1.01	0.408	1.00	1.00-1.01	0.235	1.00	0.99-1.01	0.227
Interaction age*gender	-	-	-	0.97	0.95-0.99	0.012	0.97	0.95-0.99	**0.009**
Professional occupation (ref: nursing assistant)									
Licensed practical nurse	1.73	1.46-2.04	**<0.001**	1.75	1.41-2.19	**<0.001**	1.77	1.42-2.21	**<0.001**
Registered nurse/social educator	2.06	1.71-2.46	**<0.001**	1.81	1.44-2.27	**<0.001**	1.81	1.44-2.27	**<0.001**
Continuous health education (0=yes, 1=no)	1.02	0.88-1.18	0.779	-	-	-	-	-	-
Overall health (1=very good, 5=very bad)	1.16	1.05-1.28	**0.003**	0.93	0.82-1.06	0.265	0.93	0.81-1.06	0.257
Feeling exhausted (0=no, 1=yes)	1.42	1.22-1.66	**<0.001**	1.14	0.93-1.41	0.216	1.13	0.92-1.39	0.256
Psychological distress (0=no, 1=yes)	1.84	1.52-2.23	**<0.001**	1.44	1.13-1.83	**0.003**	1.44	1.14-1.84	**0.003**
Childhood (1=very good, 5=very difficult)	1.16	1.08-1.25	**<0.001**	1.13	1.03-1.25	**0.008**	1.14	1.03-1.25	**0.008**
Job satisfaction (1=very satisfied, 5=very unsatisfied)	1.44	1.31-1.58	**<0.001**	1.13	0.99-1.28	0.064	1.13	0.99-1.28	0.069
Intention to leave (0=no, 1=yes)	1.83	1.59-2.12	**<0.001**	1.40	1.16-1.71	**0.001**	1.39	1.15-1.69	**0.001**
Attitudes (8-40 → higher score=poor attitudes)	0.96	0.95-0.97	**<0.001**	1.15	1.03-1.28	**0.010**	1.15	1.03-1.28	**0.011**
Attitudes (quadratic polynomial term)	-	-	**-**	0.99	0.99-0.99	**0.001**	0.99	0.99-0.99	**0.001**
Relational									
Resident aggression (0= less aggression, 1=high aggression)	1.86	1.62-2.13	**<0.001**	1.39	1.17-1.64	**<0.001**	1.36	1.14-1.61	**0.001**
Care-related conflicts (0= few conflicts, 1=high conflicts)	2.02	1.76-2.32	**<0.001**	1.96	1.66-2.33	**<0.001**	1.97	1.66-2.33	**<0.001**
Institutional									
Job demands (1-5 → higher score=more demands)	1.65	1.21-2.23	**0.001**				1.56	0.99-2.48	0.057
Support from manager (1-5 → higher score=less support)	1.24	1.02-1.50	**0.033**				0.93	0.69-1.26	0.655
Support from co-workers (1-5 → higher score=less support)	1.27	1.01-1.59	**0.042**				0.99	0.70-1.41	0.966
Size (number of beds)	1.00	1.00-1.00	0.889				1.00	1.00-1.00	0.595
Location (ref: urban)									
Suburban	1.13	0.97-1.31	0.128				1.20	0.97-1.50	0.096
Rural	1.20	1.00-1.45	**0.049**				1.23	0.94-1.62	0.135
Random effects									
N					2773			2773	
Intraclass Correlation Coefficient (ICC)					0.012			0.008	
Standard Error (SE)					0.009			0.008	

Intercept only model: N (obs.) = 3460, N (groups) = 100, ICC = 0.020, SE = 0.009

*Model 1 = level 1-variables; Model 2 = level 1- and 2-variables.

Tests for statistical assumptions

All statistical assumptions were tested before entering multilevel modeling.

Linearity in the Logit. For the full models, the 'linktest' (hatsq) was not significant with $p = 0.617$ for the psychological model, $p = 0.664$ for the physical model, and $p = 0.076$ for the neglect model, indicating that all models were properly specified, and assumptions of linearity were met. *Multicollinearity.* All models had Spearman's correlation coefficients below 0.8, Tolerance value below 0.1, or VIF > 10, except for the quadratic polynomial term and interaction term in the neglect model. *Hosmer-Lemeshow test.* The results from the Hosmer-Lemeshow test demonstrated a goodness-of-fit $\chi^2 = 6.59$ ($p = 0.5814$) for the psychological model, $\chi^2 = 1.95$ ($p = 0.9824$) for the physical model, and $\chi^2 = 13.33$ ($p = 0.1010$) for the neglect model, indicating that all models fit the data well.

DISCUSSION

This study of risk factors associated with staff-to-resident abuse in Norwegian nursing homes showed that various factors in the ecological model increase the likelihood of staff perpetrating psychological abuse, physical abuse, and neglect. The predictors most strongly found to be associated with all three types of abuse were 1) being a registered nurse/social educator or licensed practical nurse, 2) reporting symptoms of psychological distress, 3) considering leaving the job, 4) reporting poor attitudes towards persons with dementia, 5) and experiencing care-related conflicts and resident aggression. Other predictors were poor quality of childhood (neglect) and lack of support from a manager (psychological abuse).

Individual staff factors

Concerning individual staff factors, the strongest predictor found associated with all three types of abuse was being a registered nurse/social educator or licensed practical nurse, compared to nursing assistants with no formal health education. This was also reported in a Norwegian nursing home study in 2014 (22), but it was inconsistent with other studies, suggesting that staff with lower education are more likely to perpetrate elder abuse (29, 30). These opposite findings are not easily explained as many studies suggest that higher education and more knowledge are protective factors against elder abuse. Thus, a Cochrane review from 2016 (63) indicated ambiguity as to whether existing educational interventions lead to changes in staff behaviour and a reduction in elder abuse. One plausible explanation of our findings may be that health-educated staff with more training and knowledge of ethics and moral practice (64) reflect more critically upon their practices and how their behaviours affect residents and, hence, they more easily recognize and report acts of a negative character. Also, registered nurses/social educators and licensed practical nurses hold more permanent positions than temporary nursing assistants, who often work on an hourly basis, and this difference may explain our finding. For example, staff may consider acts of neglect, such as not giving appropriate oral care or ignoring a resident, as a systemic failure due to time restraints rather than their responsibility, and perhaps permanently employed staff are more prone to report such acts to make changes in the system. Furthermore, compared to staff working full or part-time, nursing assistants may not experience the same level of burnout, which is found to have a mediating role between different work environment factors and elder abuse (65). Nevertheless, this inconsistency in education and knowledge related to elder abuse should be further explored in well-constructed and high-quality studies (63).

Another predictor found associated with all three types of abuse was nursing staff's symptoms of psychological distress, which is consistent with a national study in Ireland that found poor mental health to be a predictor of staff-to-resident abuse (21). Other studies have focused more on staff's symptoms of burnout and emotional exhaustion and found these to be strong predictors of elder abuse (21, 23, 30, 32, 66). We also measured the staff's feelings of exhaustion, but no associations with perpetrating abuse were evident, which is surprising considering the reported strength of this factor. We speculate whether this inconsistency is because we measured exhaustion with one item only, where other studies have used more comprehensive burnout instruments such as the Maslach Burnout Inventory (21, 30, 66). Vasconcelos et al. (2016) (67) conducted a review of nursing staff's mental health and factors associated with the workplace and work process, and they found that high job demands, work pressure, violence and aggression, and poor relationships with the nursing team and managers exerted a negative impact on staff's mental health.

Psychological problems stemming from work-related factors depend on staff's personalities and experiences (67), and it is well documented that adverse childhood experiences are associated with an array of mental and physical health issues in later life (68). Experiencing a poor-quality childhood may be related to psychological distress, but after controlling for other factors, we found that the staff's poor childhood made a unique contribution as a predictor of neglect. To the best of our knowledge, this is not explored in other studies of staff-to-resident abuse. A recent study found an association between being a victim of child abuse and perpetrating elder abuse in adult life (25), but this intergenerational transmission of violence may not be directly attributable to formal caregivers perpetrating elder abuse in nursing homes. Shaw (1999) (69) found that staff in nursing homes who had been victims of domestic violence became sensitized to an invasion of personal space and reacted viscerally by committing physical abuse. We did, however, find that poor quality of childhood was associated with acts of neglect and not physical abuse, but one may assume that staff members' early life stressors may manifest in a variety of ways that also may affect how they provide care to residents.

Nevertheless, we do not fully understand the mechanism and causal effects of psychological distress, feelings of exhaustion, and adverse childhood experiences related to staff-to-resident abuse, and these predictors should receive more attention in future studies.

Job satisfaction has been recognized as one of the most persuasive factors influencing nursing staff's intention to remain or quit the job (70). Interestingly, we found that staff considering leaving their jobs was a predictor of perpetrating all types of abuse, but job satisfaction was not an associated factor. This is inconsistent with other studies that have found staff dissatisfaction as a predictor of staff-to-resident abuse (22, 23, 32). Job satisfaction is defined as an emotional feeling influenced by several factors such as working conditions and social relations (71), and we speculate, also here, whether this inconsistency in findings is caused by the use of a single item, where others have used more wide-ranging instruments covering several dimension of job satisfaction (22). Pillemer and Moore (1989) (27) used intention to quit one's job as an indicator of nursing home staff's dissatisfaction, but an intention to leave may also be the result of other factors. Tummers et al. (2013) (72) found that the most important reasons that nurses in long-term care intended to leave their organizations were related to negative working atmospheres, but also due to insufficient development and career opportunities.

Ageism is a profound problem potentially affecting all levels of the ecological model, individual, relational, institutional, and social. Three deleterious components can influence older people's health: age discrimination (i.e., detrimental treatment of older adults), negative self-perceptions of aging (i.e., beliefs held about one's aging), and negative age stereotypes (i.e., beliefs about older adults in general) (73). When measuring nursing staff's attitudes towards people with dementia, we found that staff showing poor attitudes were more likely to perpetrate all types of staff-to-resident abuse. However, when measuring neglect, we found a curvilinear relationship, where staff with both poor and good attitudes towards persons with dementia perpetrated neglect. To our knowledge, this finding is not reported elsewhere and should be further explored. In US nursing homes, Pillemer and Moore (1989) (27) found that staff who viewed residents as children were more likely to commit abuse. In interviews with German nursing home staff, Goergen et al. (2004) (23) found that staff expressed infantilizing attitudes and believed that residents should be treated with indulgence and their behaviour restricted and controlled. One may presume that geriatric training could reduce ageism and negative attitudes, and a study by Almogue et al. (2010) (74) suggested that employees in geriatric hospitals had better attitudes towards older persons than physicians and nurses in general hospitals. This was also reported by Kada et al. (2009) (52), where nurses with specialized training in geriatrics, psychiatry, or dementia care had significantly more positive attitudes compared to nurses without this experience. In our study, almost 30% of staff had continuing education in healthcare, but no significant association with perpetrated abuse was evident. One may discuss whether poor attitudes towards older people should be included as an individual staff factor, an institutional (cultural) factor, or a broader societal factor affected by the community or country in which the institution is situated. The nursing staff brings their personal experiences and beliefs into nursing homes, but institutions, or even units within institutions, may comprise a deprived culture where older people are marginalized and devalued, and abusive acts are tolerated and condoned (14). Finally, we found a significant interaction term between staff's age and gender and neglect, where younger males perpetrated more acts of neglect, but this considerably decreased with higher age. In contrast, younger female staff perpetrated fewer acts of neglect, but here, acts gradually increased with higher age. To our knowledge, this interaction between age and gender associated with neglect has not been previously reported. The literature does, however, suggest that both females and males of all ages are perpetrators of abuse (4, 22, 26-28). One plausible explanation may be that compared to males, females obtain a higher responsibility and burden of care tasks at home when establishing their own families (75). Nevertheless, this difference between men, women, and age-related to elder abuse is not easily explained and should be further explored.

Relational factors

Concerning relational factors, we found care-related conflicts strongly associated with staff perpetrating all three types of abuse, and this is consistent with other studies of elder abuse in institutional care (21, 22, 66, 76). Residents suffering from dementia may for many reasons refuse personal care, food, or medications, and they may become angry or agitated in a way that challenges nursing staff (77). How staff cope in these situations may be affected by personal factors such as psychological distress or attitudes towards older people, but also by the level of geriatric training and institutional factors such as lack of time and resources (20, 78). Again, we did

not find that health education or continuous healthcare education was a protective factor against staff-to-resident abuse. Nursing home staff are at high risk of being exposed to aggression from residents with dementia or cognitive impairments, and consistent with previous literature (21, 23, 28, 32), we did find that resident aggression such as pinching, beating, or sexually harassing nursing staff was associated with perpetrating abuse, and one may assume that many of these incidents occurred in care situations and created conflicts. Since many residents display neuropsychiatric symptoms such as agitation and aggressive behaviours, long-term caregivers should be trained to cope in these situations, and a recent promising study by Lichtwarck et al. (2019) (79, 80) found that a targeted intervention in nursing homes helped staff to cope with residents exhibiting neuropsychiatric symptoms.

Also, neuropsychiatric symptoms may contribute to incidents of resident-to-resident aggression in nursing homes, and Schiamberg et al. (2012) (81) found that resident-to-resident aggression was a risk factor for staff-to-resident abuse. Moreover, relatives may also commit abusive acts towards nursing home residents, but to our knowledge, this has only been explored in two studies (82, 83), where one found relative-to-resident abuse to be more prevalent than staff-to-resident abuse (82). Polyvictimization is a recently added term in the field of elder abuse, even though a significant number of studies have for many years documented the co-occurrence of multiple types of elder abuse by one or more perpetrators (84). Polyvictimization may exacerbate negative outcomes more than any singular form of abuse (85), and more research is needed to improve its recognition and response (86).

Institutional factors

There exist few studies of institutional risk factors related to elder abuse, and most evidence is gathered from policy and practice inquiries (14). Individual staff and resident characteristics may be related to institutional maltreatment. For example, stressful or poor work environments may increase the risk of staff burnout, which may manifest as exhaustion, fatigue, stress, and/or dissatisfaction, which in turn may trigger staff-to-resident abuse (24, 28, 32). In contrast, nursing homes providing a stable and positive work environment generate satisfied staff who provide good quality of care (87). In our study, we found one institutional factor associated with psychological abuse: lack of support from a manager. In the Czech Republic, Buzgova and Ivanova (2011) (32) reported that nursing home staff who perpetrated abuse were more often dissatisfied with their work conditions, did not feel motivated by their managers, and considered their work as stressful. In our study, we only measured three dimensions of the work environment, while there exist numerous factors including staffing and resources, job autonomy, leadership style, workplace conditions, procedures and routines, teamwork, and safety climate (54). Despite the increase in elder abuse research, many healthcare professionals and institutional leaders display poor knowledge of what constitutes elder abuse, do not perceive elder abuse as a common or serious problem, and lack awareness of how to identify and report incidents of elder abuse (20, 88, 89). A recent prospective, single-blinded, cluster-randomized, controlled trial evaluated the effectiveness of an intensive training program and found this to improve primary care nurses' knowledge, attitudes, and confidence in intervening with elder abuse (90).

In 2009, Malmedal et al. (91) found that nine out of ten staff members admitted perpetrating inadequate care in Norwegian nursing homes. Still, in 2020 Myhre et al. (89) reported that Norwegian nursing home leaders considered staff-to-resident abuse 'an unthinkable event' and perceived nursing staff's rough handling of residents as 'mainly unintentional and something that could happen when caring for residents with aggression or those who resist care'. Nursing home leaders' perception of elder abuse is essential to prevent or reduce staff-to-resident abuse as their understanding and attitudes may affect how nursing staff provides resident care (89), and we suggest that future studies explore a wider dimension of the work environment related to staff-to-resident abuse.

Strengths and limitations

When recruiting nursing homes, more of the larger institutions rejected participation, which may have introduced selection bias. The nursing homes did not differ in how they were run or located, but one could speculate whether these homes had more problems than nursing homes that accepted our invitation. Our study was based on self-reports by staff, which may have introduced response bias due to social pressure to not report sensitive information concerning themselves, and another limitation is that our survey instrument measuring the

prevalence of abuse had not been thoroughly tested and validated. In addition, the instrument by Kada et al. (2009) (52) measuring attitudes towards dementia had only been translated and not validated, in addition, our modified version of the instrument by Malmedal et al. (2014) (22) had not undergone a thorough validation. Nevertheless, we achieved adequate Cronbach's alpha levels on all scales. Due to the cross-sectional study design, we only provide associations and no causal inferences of staff-to-resident abuse. Finally, we used WHO's ecological model to guide our choice of risk factors, and we only included factors on three out of the four levels and no resident factors or relative-relations factors; thus, considering the complexity of elder abuse leads us to believe that other non-included factors may be related to staff-to-resident abuse in nursing homes. A strength of our study is the large sample size of 100 nursing homes and 3,693 nursing staff, which makes it one of the largest staff surveys worldwide exploring the prevalence and risk factors of staff-to-resident abuse. We also achieved a response rate of 60.1%, which is higher than some of the other studies in the field of elder abuse (21, 23, 92, 93). Finally, few studies have explored the hierarchical structure of nursing staff nested within nursing homes and staff-to-resident abuse with a multilevel approach.

Implications

Understanding the complexity of elder abuse and identifying predictors of staff-to-resident abuse may contribute to the reduction and prevention of abuse, and we believe this study provides evidence that may have some implications for care, education, and the future direction of research.

The responsibility of taking care of older people in nursing homes must not be taken lightly, and managers should know the staff regarding their physical and mental health, but also their attitudes towards older persons in general (78). Managers should promote a positive and safe work environment with active leadership and a high level of social support and recognize that these are beneficial factors contributing to a high quality of care that may reduce staff-to-resident abuse (20, 87, 94, 95). Optimal staff density in nursing homes is widely debated, but studies have found that the staff-to-resident ratio is not only a matter of quantity: a high percentage of qualified staff may be more likely to prevent elder abuse than a high proportion of staff without geriatric training (23, 94). Moreover, managers should create a safe environment for nursing staff to discuss their failures and successes, as opposed to an inward-looking culture with a punishing regime (20). Nevertheless, they should be aware of how to report and handle both minor and serious acts of staff-to-resident abuse as they do occur (4).

Elder abuse awareness, knowledge, and training should be encouraged in both nursing homes and educational healthcare institutions. Our findings indicate that special attention should be paid to relational factors such as how to cope with residents exhibiting agitated or aggressive behaviours, but also to a general understanding of and attitude towards dementia care. A more person-centered approach that embraces older people's values, preferences, and autonomy may prevent staff-to-resident abuse in nursing homes (96).

Finally, our findings support the evidence of the previous literature that has explored risk factors on different levels of the ecological model; elder abuse is a complex and multifaceted phenomenon. However, most studies have assessed these risk factors with cross-sectional designs that do not contribute to the understanding of the underlying mechanism or causes of abuse. Hence, future studies should explore potential risk factors with prospective or qualitative designs, and at the same time, provide more research on step three in WHO's public health approach: design, implement, and evaluate preventive interventions with a multifaceted strategy.

CONCLUSIONS

The findings of this study underline the importance of using a multifaceted strategy to identify risk factors for elder abuse in nursing homes as we found several predictors of staff-to-resident abuse on different levels of the ecological model. However, future studies should explore risk factors and the underlying mechanism in qualitative and prospective studies and design preventive interventions with a multifaceted strategy.

List of abbreviations
CDC – Centers for Disease Control and Prevention
WHO – World Health Organization
US – United States
NPS – Neuropsychiatric Symptoms
CRE - Central Register of Establishments and Enterprises
SCL - Hopkins Symptom Checklist
HUNT3 - Nord-Trøndelag Health Study (third wave)
QPS_{Nordic} - General Nordic Questionnaire for Psychological and Social Factors at Work
SE – Standard Error
OR - Odds Ratio
CI - Confidence Interval
T – Tolerance
VIF – Variance Inflation Factor
ICC – Intraclass Correlation Coefficient
OECD – Organization for Economic Cooperation and Development
NTNU – Norwegian University of Science and Technology

DECLARATIONS
Ethics approval and consent to participate
The Regional Committee for Medical and Health Research Ethics in Norway approved the study in May 2018, reference number: 2018/314. All nursing home directors were informed about the study, and a signed consent was sent by email to the first author from those who accepted participation. Information about the study was given on the first page of the survey questionnaire. Nursing staff did not write their name or birth date on the questionnaire and consent was obtained when they completed and placed the questionnaire in the sealed collection boxes. They were informed that they could not withdraw their participation after the questionnaire was returned.

Consent for publication
Not applicable.

Availability of data and material
The dataset generated and analysed during the current study are available from the corresponding author on reasonable request.

Competing interests
The authors declare that they have no competing interests.

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Authors' contributions
AB, AHE and WM contributed to the conceptualisation and design of the study and the interpretation of the data and writing of the manuscript. LM contributed to the conceptualisation and design of the survey questionnaire and critical revision of the article. LB contributed to the statistical analysis of the data and critical revision of the article. All authors have read and approved the final manuscript.

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Authors' information
We used a professional Author Editor Service to proofread the final manuscript (Edit My English). The main author is a Ph.D. Candidate in Public Health and Medicine, NTNU, and this study is a part of the Ph.D.-project.

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Appendices I-IV

Appendix I	Survey questionnaire of nursing staff
Appendix II	Survey questionnaire of nursing home managers
Appendix III	Survey questionnaire of nursing home directors
Appendix IV	Evaluation form used to test face validity of the survey questionnaire

VOLD, OVERGREP OG FORSØMMELSER I SYKEHJEM – SKJER DET?

Stort sett ytes det gode og trygge pleie- og omsorgstjenester i norske sykehjem. Samtidig hører man av og til om hendelser som vold, overgrep og forsømmelser mot beboere.

FORESPØRSEL OM Å DELTA I FORSKNINGSPROSJEKT

Dette er en forespørsel til deg om du ønsker å delta i en spørreundersøkelse for å kartlegge omfanget av vold, overgrep og forsømmelser mot beboere i norske sykehjem, og undersøke forhold som kan ha betydning for at slike hendelser oppstår. Hensikten med undersøkelsen er å få en bedre forståelse av beboeres og ansattes hverdag, slik at tiltak for å forebygge uønskede hendelser kan utvikles, innføres og evalueres. Undersøkelsen er nasjonal, og 100 sykehjem er trukket ut tilfeldig. Din leder har samtykket i at ditt sykehjem kan delta, og i at ansatte forespørres om å delta. *Det er også avklart med din leder at du kan bruke arbeidstiden til å fylle ut spørreskjemaet.* Undersøkelsen gjennomføres som et doktorgradsprosjekt ved Institutt for samfunnsmedisin og sykepleie, Norges teknisk-naturvitenskapelige universitet NTNU.

Hva er vold, overgrep og forsømmelser? Vold og overgrep defineres som både fysiske, psykiske, finansielle og seksuelle handlinger, i tillegg til forsømmelser uansett hva årsaken måtte være. Eksempler på slike handlinger kan være trusler, krangling, maktbruk, ignorering, isolering, økonomisk svindel, seksuelle krenkelser, forsømmelse av grunnleggende behov og feil bruk av medisiner.

Hva innebærer det å delta? Det innebærer at du fyller ut dette skjemaet, som tar ca. 15 - 20 minutter. Skjemaet inneholder spørsmål om deg og din arbeidshverdag, beboeres adferd overfor deg, og spørsmål om vold, seksuelle overgrep og forsømmelser mot beboere.

Fordeler/ulemper: Hvis spørsmål i skjemaet skulle vekke ubehag og du i ettertid ønsker å snakke med noen, kan du anonymt ringe nasjonal kontakttelefon hos «Vern for Eldre», tlf. 800 30 196.

Hva skjer med informasjonen du gir oss? Du skal ikke skrive navnet ditt på skjemaet. Alle opplysninger du gir oss vil bli behandlet konfidensielt. Svarene vil kun bli brukt som beskrevet her, og resultatene vil bli publisert i nasjonale og internasjonale rapporter/artikler. En kode vil koble skjemaet og sykehjemmet, slik at vi kan kartlegge organisatoriske forhold som kan ha betydning for at uønskede hendelser oppstår. Kun prosjektleder vil ha tilgang til denne koden. Koden eller datamaterialet for øvrig vil ikke bli gjort tilgjengelig for det enkelte sykehjem. Datamaterialet vil bli slettet innen utgangen av år 2025.

Det er frivillig å delta, og du samtykker ved å svare på dette spørreskjemaet og levere det i den lukkede svarboksen merket «NTNU». Etter at du har levert inn skjemaet, kan du ikke trekke deg fra undersøkelsen, ettersom det ikke vil være mulig å finne tilbake til ditt spørreskjema. Prosjektet er godkjent av Regional komite for medisinsk og helsefaglig forskningsetikk, saksnr. 2018/314.

De 8 sykehjemmene med høyest svarprosent får kr. 10 000 hver til velferdstiltak for ansatte!

Takk for at du er villig til å delta – dine svar er svært viktige for undersøkelsen!

Anja Botngård
doktorgradsstipendiat, prosjektleder (tlf. 976 84 327)

Wenche Malmedal
førsteamanuensis, veileder (tlf. 976 42 156)

NTNU
Kunnskap for en bedre verden

LES DETTE FØR DU STARTER!	Skjemaet skal leses maskinelt. Vennligst følg disse retningslinjene: • *Bruk svart/blå kulepenn. Skriv tydelig, og ikke utenfor feltene.* ***Kryss av slik:*** ☒. • *Feilkryssinger kan strykes ved å fylle hele feltet. Kryss så av i rett felt.* • *Sett bare ett kryss på hvert spørsmål om ikke annet er oppgitt.* • *Ikke brett skjemaet.* • *Lever skjemaet i boksen merket NTNU.*

A. OM DEG SELV

1. Ditt kjønn: ⇨ Kvinne..... ☐1 Mann....... ☐2

2. Din alder: ⇨ ☐☐

3. Sivil status: ⇨
   - Enslig................. ☐1
   - Samboer/gift .... ☐2
   - Separert/skilt....... ☐3
   - Enke/-mann .... ☐4

4. Din høyeste fullførte utdanning: ⇨
   - Grunnskole .... ☐1
   - Videregående skole / fagbrev............ ☐2
   - Høgskole/universitet, opptil 4 år .... ☐3
   - Høgskole/universitet, mer enn 4 år.... ☐4

5. Hvilken stilling har du ved dette sykehjemmet? ⇨
   - Pleieassistent (ufaglært) .... ☐1
   - Helsefaglærling.......................... ☐2
   - Hjelpepleier/omsorgsarbeider.... ☐3
   - Sykepleier .... ☐4
   - Vernepleier .... ☐5
   - Annen stilling (*hvilken?*⇩) .... ☐6

   Annen stilling:⇩ *Bruk* STORE, TYDELIGE BLOKKBOKSTAVER, *ett tegn pr. felt.*

   ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

6. Har du videreutdanning innen helse- og omsorgsfag? ⇨ Ja....... ☐1 Nei ..... ☐2

7. Hvor mange år har du arbeidet *ved dette sykehjemmet*? *Avrund til nærmeste antall hele år.* ⇨ ☐☐

8. Hvor mange år har du arbeidet *i pleie- og omsorgssektoren til sammen*? *Avrund til nærmeste antall hele år.* ⇨ ☐☐

9. Hvordan er ditt ansettelsesforhold ved dette sykehjemmet? ⇨
   - Fast ...... ☐1
   - Vikar ..... ☐2
   - Både fast og vikar ... ☐3

10. Hvor mange timer arbeider du vanligvis i løpet av en uke? ⇨ ☐☐

11. Ved hva slags avdeling/enhet har du for tiden *størst* stillingsprosent?
    - Korttidsavdeling..... ☐1
    - Langtidsavdeling ... ☐2
    - Skjermet/forsterket langtidsavdeling .... ☐3
    - Annen type avdeling (*hva slags?*⇩)..... ☐4

    Annen type avdeling:⇩ STORE BOKSTAVER

    ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

12. Hvilken arbeidstidsordning har du for tiden? ⇨
    - Bare dagarbeid ... ☐1
    - To-skift arbeid..... ☐2
    - Tre-skift arbeid.... ☐3
    - Bare kveldsarbeid .... ☐4
    - Bare nattarbeid......... ☐5
    - Bare helgearbeid...... ☐6
    - Annen ordning (*hva slags?*⇩) .... ☐7

    Annen ordning:⇩ STORE BOKSTAVER

    ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

Undersøkelsen gjennomføres med bistand fra SU-fak., NTNU

Før du fortsetter: Kontroller at du ikke har glemt noe på denne sida.

Husk: Bare ett kryss på hvert spørsmål.

B. HELSEN DIN

1. Stort sett, vil du si at helsen din er … ? ⇨

Meget god 1	*God* 2	*Verken god eller dårlig* 3	*Dårlig* 4	*Meget dårlig* 5
☐	☐	☐	☐	☐

2. Når du tenker på barndommen/oppveksten din, vil du beskrive den som … ? ⇨

Svært god 1	*God* 2	*Middels* 3	*Vanskelig* 4	*Svært vanskelig* 5
☐	☐	☐	☐	☐

3. Har du vært plaget av noe av dette de *siste 14 dagene*? ⇨

Ett kryss på hver linje.

	Ikke plaget 1	*Litt plaget* 2	*Ganske plaget* 3	*Veldig plaget* 4
1. Vært stadig redd eller engstelig	☐	☐	☐	☐
2. Følt deg anspent eller urolig	☐	☐	☐	☐
3. Følt håpløshet når du tenker på framtida	☐	☐	☐	☐
4. Følt deg nedfor eller trist	☐	☐	☐	☐
5. Bekymret deg for mye om forskjellige ting	☐	☐	☐	☐

4. Kjenner du deg *vedvarende* utmattet/sliten? ⇨ Nei ..... ☐ 1 Ja..... ☐ 2

4a. *Hvis ja*: Ca. hvor lenge har du kjent deg utmattet/sliten? ⇨

Under 3 mnd. 1	*3 – 6 mnd.* 2	*Over 6 mnd.* 3
☐	☐	☐

4b. *Hvis ja*: Ca. hvor mye av tiden kjenner du deg utmattet/sliten? ⇨

Under 25% av tiden 1	*25 - 50% av tiden* 2	*50 – 75% av tiden* 3	*Over 75% av tiden* 4
☐	☐	☐	☐

C. ARBEID OG TRIVSEL

1. Jobbkrav og sosialt samspill:

	Meget sjelden el. aldri 1	*Nokså sjelden* 2	*Av og til* 3	*Nokså ofte* 4	*Meget ofte el. alltid* 5
1. Er arbeidsbelastningen din ujevn, slik at arbeidet hoper seg opp?	☐	☐	☐	☐	☐
2. Må du arbeide overtid?	☐	☐	☐	☐	☐
3. Er det nødvendig å arbeide i et høyt tempo?	☐	☐	☐	☐	☐
4. Har du for mye å gjøre?	☐	☐	☐	☐	☐
5. Om du trenger det, kan du få støtte og hjelp i ditt arbeid fra dine arbeidskolleger?	☐	☐	☐	☐	☐
6. Om du trenger det, kan du få støtte og hjelp i ditt arbeid fra din nærmeste leder?	☐	☐	☐	☐	☐
7. Om du trenger det, er dine arbeidskolleger villige til å lytte til deg når du har problemer i arbeidet?	☐	☐	☐	☐	☐
8. Om du trenger det, er din nærmeste leder villig til å lytte til deg når du har problemer i arbeidet?	☐	☐	☐	☐	☐
9. Blir dine arbeidsresultater verdsatt av din nærmeste leder?	☐	☐	☐	☐	☐

2. Hvordan trives du, alt i alt, med jobben din? ⇨

Veldig godt 1	*Ganske godt* 2	*Verken godt eller dårlig* 3	*Ganske dårlig* 4	*Veldig dårlig* 5
☐	☐	☐	☐	☐

3. Har du, i løpet av *de siste 12 månedene,* vurdert å skifte *arbeidsplass*? ⇨

Ja 1	*Nei* 2
☐	☐

Før du fortsetter: Kontroller at du ikke har glemt noe på denne sida.

D. BEBOERES ADFERD MOT PERSONALET

1. Hvor ofte, i løpet av de *siste 12 månedene*, har det hendt at beboere har …

	Daglig 1	Ukentlig 2	Månedlig 3	Sjeldnere 4	Aldri 5
1. … uttrykt takknemlighet overfor deg?	☐	☐	☐	☐	☐
2. … kastet noe etter deg?	☐	☐	☐	☐	☐
3. … gitt deg ros?	☐	☐	☐	☐	☐
4. … spyttet på deg?	☐	☐	☐	☐	☐
5. … kløpet, slått eller lugget deg?	☐	☐	☐	☐	☐
6. … snakket pent om deg til dine kolleger/ledelsen?	☐	☐	☐	☐	☐
7. … truet deg eller skjelt deg ut?	☐	☐	☐	☐	☐
8. … gitt deg en klem?	☐	☐	☐	☐	☐
9. … trakassert deg seksuelt?	☐	☐	☐	☐	☐

2. Hvor ofte, i løpet av de *siste 12 månedene*, har det oppstått sammenstøt mellom beboere og personalet …

	Daglig 1	Ukentlig 2	Månedlig 3	Sjeldnere 4	Aldri 5
1. … fordi beboer ikke vil spise?	☐	☐	☐	☐	☐
2. … fordi beboer ikke vil vaske seg eller kle på/av seg?	☐	☐	☐	☐	☐
3. … fordi beboer ikke vil gå på toalettet?	☐	☐	☐	☐	☐
4. … fordi beboer påstår at de er blitt bestjålet?	☐	☐	☐	☐	☐
5. … fordi beboer vil ha mye oppmerksomhet?	☐	☐	☐	☐	☐
6. … fordi beboer plager andre beboere?	☐	☐	☐	☐	☐
7. … fordi beboer ikke vil ta medisiner?	☐	☐	☐	☐	☐
8. … fordi beboer vil stikke av?	☐	☐	☐	☐	☐
9. … fordi beboer er aggressiv/utagerende?	☐	☐	☐	☐	☐

E. OM DEMENS

Hvor enig eller uenig er du i følgende utsagn om demens?

	Svært enig 1	Enig 2	Verken /eller 3	Uenig 4	Svært uenig 5
1. Det er viktig å ha strenge rutiner i arbeidet med demenslidende	☐	☐	☐	☐	☐
2. Personer med demens er i stor grad som barn	☐	☐	☐	☐	☐
3. Det er ikke håp for personer med demens	☐	☐	☐	☐	☐
4. Personer med demens er ute av stand til å ta egne avgjørelser	☐	☐	☐	☐	☐
5. Personer som lider av demens er syke og trenger å bli passet på	☐	☐	☐	☐	☐
6. Det kan ikke gjøres noe mer for personer med demens, unntatt å holde dem rene og sørge for at de har det bra	☐	☐	☐	☐	☐
7. Når en person blir dement, er det uunngåelig at det utelukkende går nedoverbakke	☐	☐	☐	☐	☐
8. Det er viktig å ikke bli for knyttet til beboere med demens	☐	☐	☐	☐	☐

Før du fortsetter: Kontroller at du ikke har glemt noe på denne sida.

F. UØNSKEDE HENDELSER MOT BEBOERE

Dette avsnittet handler om uønskede hendelser, som vold og seksuelle overgrep, mot beboere. Noen spørsmål/hendelser kan virke like, men det er viktig at du svarer på alle.

1. Hvor ofte har du, i løpet av *de siste 12 månedene*, observert medbeboere, pårørende eller kolleger gjøre følgende, og hvor ofte har du gjort det selv?

		Aldri 1	*Én gang* 2	*2 - 5 ganger* 3	*6 - 10 ganger* 4	*Over 10 ganger* 5
1. Kjeftet på en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
2. Kommet med ekle bemerkninger til en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
3. Bannet til en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
4. Kommet med ydmykende bemerkninger til en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
5. Krangling ⇨	1. Mellom beboere.....	☐	☐	☐	☐	☐
	2. Pårørende – beboer	☐	☐	☐	☐	☐
	3. Kollega – beboer	☐	☐	☐	☐	☐
	4. Du selv – beboer	☐	☐	☐	☐	☐
6. Kommet med truende bemerkninger til en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
7. Kommet med kritiserende bemerkninger til en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐

Husk: Bare ett kryss på hvert spørsmål.

		Aldri 1	*Én gang* 2	*2 - 5 ganger* 3	*6 - 10 ganger* 4	*Over 10 ganger* 5
8. Dyttet, grepet hardt tak i, eller kløpet en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
9. Lugget eller sparket en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
10. Skadet en beboer med vilje ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
11. Kastet gjenstander mot en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
12. Slått en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
13. Mobbet/plaget en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
14. Opptrådt aggressivt mot en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
15. Stjålet penger fra en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐

Før du fortsetter: Kontroller at du ikke har glemt noe på denne sida.

Husk: Bare ett kryss på hvert spørsmål.

		Aldri 1	*Én gang* 2	*2 - 5 ganger* 3	*6 - 10 ganger* 4	*Over 10 ganger* 5
16. Stjålet ting fra en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
17. Signert viktige dokumenter uten beboerens tillatelse ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
18. Ødelagt en beboers eiendeler uten tillatelse ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
19. Befølt en beboer (i seksuell hensikt) ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
20. Hatt upassende samtale av seksuell karakter med en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
21. Blottlagt/kledd av en beboer for å ydmyke ham/henne ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
22. Penetrert en beboers vagina/anus, f.eks. med finger (i seksuell hensikt) ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐
23. Voldtatt en beboer ⇨	1. Observert medbeboer.....	☐	☐	☐	☐	☐
	2. Observert pårørende	☐	☐	☐	☐	☐
	3. Observert kollega	☐	☐	☐	☐	☐
	4. Jeg har gjort det selv	☐	☐	☐	☐	☐

Før du fortsetter: Kontroller at du ikke har glemt noe på denne sida.

De neste spørsmålene handler om *forsømmelser* av beboere, *uansett om årsaken til hendelsene er personalets mangel på tid eller ressurser*. NB: Kryss *ikke* av for hendelser som er helsefaglig begrunnet, f.eks. faste før prosedyrer.

2. Hvor ofte har du, i løpet av *de siste 12 månedene*, observert kolleger gjøre følgende, og hvor ofte har du gjort følgende selv?

		Aldri 1	*Én gang* 2	*2 - 5 ganger* 3	*6 - 10 ganger* 4	*Over 10 ganger* 5
1. Truet med å slutte å gi pleie til en beboer ⇨	1. Observert kollega	☐	☐	☐	☐	☐
	2. Jeg har gjort det selv	☐	☐	☐	☐	☐
2. Med vilje unnlatt å gi en beboer mat ⇨	1. Observert kollega	☐	☐	☐	☐	☐
	2. Jeg har gjort det selv	☐	☐	☐	☐	☐
3. Med vilje unnlatt å gi en beboer vann eller annen drikke ⇨	1. Observert kollega	☐	☐	☐	☐	☐
	2. Jeg har gjort det selv	☐	☐	☐	☐	☐
4. Med vilje unnlatt å gi en beboer nød-vendige medisiner ⇨	1. Observert kollega	☐	☐	☐	☐	☐
	2. Jeg har gjort det selv	☐	☐	☐	☐	☐
5. Med vilje gitt en beboer mer medisin enn nødvendig ⇨	1. Observert kollega	☐	☐	☐	☐	☐
	2. Jeg har gjort det selv	☐	☐	☐	☐	☐
6. Med vilje utsatt å gi en beboer hennes/ hans medisiner ⇨	1. Observert kollega	☐	☐	☐	☐	☐
	2. Jeg har gjort det selv	☐	☐	☐	☐	☐
7. Latt en beboer vente på hjelp lenger enn nødvendig ⇨	1. Observert kollega	☐	☐	☐	☐	☐
	2. Jeg har gjort det selv	☐	☐	☐	☐	☐
8. Oversett/ignorert en beboer ⇨	1. Observert kollega	☐	☐	☐	☐	☐
	2. Jeg har gjort det selv	☐	☐	☐	☐	☐
9. Ikke behandlet en beboers sår/skader nøye nok ⇨	1. Observert kollega	☐	☐	☐	☐	☐
	2. Jeg har gjort det selv	☐	☐	☐	☐	☐
10. Forsømt munnpleien til en beboer ⇨	1. Observert kollega	☐	☐	☐	☐	☐
	2. Jeg har gjort det selv	☐	☐	☐	☐	☐
11. Ikke skiftet bleier på en inkontinent beboer ⇨	1. Observert kollega	☐	☐	☐	☐	☐
	2. Jeg har gjort det selv	☐	☐	☐	☐	☐
12. Hindret en beboer i å bruke ringeklokka ⇨	1. Observert kollega	☐	☐	☐	☐	☐
	2. Jeg har gjort det selv	☐	☐	☐	☐	☐

Takk for at du ville svare på spørsmålene!

VOLD, OVERGREP OG FORSØMMELSER I SYKEHJEM – SKJER DET?

AVDELINGEN

Fylles ut av avdelingsleder. NB: Ett skjema for hver avdeling.

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LES DETTE FØR DU STARTER!	Skjemaet skal leses maskinelt. Vennligst følg disse retningslinjene: • *Bruk svart/blå kulepenn. Skriv tydelig, og ikke utenfor feltene.* • *Skriv store, tydelige tall i tallfeltene, og store* BLOKKBOKSTAVER *i tekstfeltene.* • *På avkryssingsspørsmålene krysser du av slik:* ☒*.* • *Feilkryssinger kan strykes ved å fylle hele feltet. Kryss så av i rett felt.* • *Ikke brett skjemaet, og lever det i boksen merket NTNU.*

1. Hvilken avdeling gjelder dette skjemaet? ⇨

Korttidsavdeling ..... ☐ 1 Skjermet/forsterket avdeling ..... ☐ 3
Langtidsavdeling ..... ☐ 2 Annen avdeling (*hvilken*?⇩) .... ☐ 4

Annen avdeling:⇩ *Bruk* STORE, TYDELIGE BLOKKBOKSTAVER, *ett tegn pr. felt.*

Antall beboere på avdelingen nå: *Skriv 0 hvis ingen.*

	Kvinner ⇩	*Menn* ⇩
2. Hvor mange beboere er det *totalt* på avdelingen nå? ⇨		
3. Hvor mange av beboerne er *sengeliggende*? ⇨		
4. Hvor mange av beboerne er *rullestolbrukere*? ⇨		
5. Hvor mange av beboerne er *forvirrede/demente*? ⇨		
6. Hvor mange av beboerne er *inkontinente for urin/avføring*? ⇨		

7. Hva er beboernes gjennomsnittsalder? *Avrund til nærmeste antall hele år.* ⇨

Gjennomsnittlig antall pleieansatte på avdelingen pr. vakt:

8. Gjennomsnittlig antall pleieansatte på *dagvakt* en vanlig hverdag: ⇨
9. Gjennomsnittlig antall pleieansatte på *kveldsvakt* en vanlig hverdag: ⇨
10. Gjennomsnittlig antall pleieansatte på *dagvakt*, helg/helligdag: ⇨
11. Gjennomsnittlig antall pleieansatte på *kveldsvakt*, helg/helligdag: ⇨
12. Gjennomsnittlig antall pleieansatte på *nattvakt*: ⇨

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Snu arket *– men kontroller først at du ikke har glemt noe på denne sida.*

13. Hva er pleiefaktoren (bemanningsfaktoren) ved avdelingen?
Pleiefaktoren = antall pleieårsverk (unntatt avd.leder) delt på antall beboere på avdelingen.
Bruk to desimaler. Vær nøye med plasseringen av tallene før/etter komma. ⇨ ,

14. Hvor mange av stillingene ved avdelingen er for tiden *ikke* besatt? ⇨

Pleiepersonalet ved avdelingen nå: *Skriv 0 hvis ingen.*

	Kvinner ⇩	*Menn* ⇩
2. Antall sykepleiere *uten* videreutdanning: ⇨		
3. Antall sykepleiere *med* videreutdanning: ⇨		
3. Antall vernepleiere *uten* videreutdanning: ⇨		
3. Antall vernepleiere *med* videreutdanning: ⇨		
3. Antall omsorgsarbeidere/hjelpepleiere *uten* videreutdanning: ⇨		
3. Antall omsorgsarbeidere/hjelpepleiere *med* videreutdanning: ⇨		
3. Antall praktikanter/helsefaglærlinger: ⇨		
3. Antall pleieassistenter (ufaglærte): ⇨		
3. Antall annet pleiepersonell (*hva slags?*⇩): ⇨		

Annet pleiepersonell:⇩ STORE BLOKKBOKSTAVER

24. Gi *sykehjemmet ditt* en totalskåre for forebygging av vold, overgrep og forsømmelser mot beboere: ⇨

Svært dårlig 0 1 2 3 4 5 6 7 8 9 10 *Svært bra*

25. Gi *norske sykehjem på landsbasis* en totalskåre for forebygging av vold, overgrep og forsømmelser mot beboere: ⇨

Svært dårlig 0 1 2 3 4 5 6 7 8 9 10 *Svært bra*

Takk for at du ville svare på spørsmålene!

Undersøkelsen gjennomføres med bistand fra SU-fak., NTNU

VOLD, OVERGREP OG FORSØMMELSER I SYKEHJEM – SKJER DET?

SYKEHJEMMET

Fylles ut av enhetslederen ved sykehjemmet.

NTNU
Kunnskap for en bedre verden

LES DETTE FØR DU STARTER!	Skjemaet skal leses maskinelt. Vennligst følg disse retningslinjene: • *Bruk svart/blå kulepenn. Skriv tydelig, og ikke utenfor feltene.* • *Skriv store, tydelige tall i tallfeltene, og store* BLOKKBOKSTAVER *i tekstfeltene.* • *På avkryssingsspørsmålene krysser du av slik:* ☒. • *Feilkryssinger kan strykes ved å fylle hele feltet. Kryss så av i rett felt.* • *Ikke brett skjemaet, og lever det i boksen merket NTNU.*

1. Hvilket år ble sykehjemmet bygd / tatt i bruk? *Skriv årstallet.* ⇨ ☐☐☐☐

2. Har sykehjemmet noen gang blitt restaurert? ⇨ Ja ..... ☐ 1 Nei..... ☐ 2

3. *Hvis ja*: Hvilket år var *siste gang* dette ble gjort? ⇨ ☐☐☐☐

4. Hvordan drives sykehjemmet? ⇨ Offentlig... ☐ 1 Privat (ideelt) .... ☐ 2 Privat (kommersielt) .... ☐ 3

5. Hvor mange *enhetsledere* har vært ansatt ved dette sykehjemmet i løpet av de siste 12 månedene? *NB: Regn også med deg selv.* ⇨ ☐☐

6. Hvor mange *avdelinger* er det ved sykehjemmet? ⇨ ☐☐

7. Hvor mange *avdelingsledere* er ansatt ved sykehjemmet nå? ⇨ ☐☐

8. Antall *rom* ved sykehjemmet: ⇨ Enerom: ☐☐ Dobbeltrom: ☐☐ Flersengsrom: ☐☐

9. Totalt antall *beboerplasser* ved sykehjemmet ⇨ ☐☐☐

10. Hvor mange prosent av de fast ansatte har arbeidet ved sykehjemmet i *3 år eller mer*? *Avrund til nærmeste antall hele prosent.* ⇨ ☐☐☐

11. Hvor høyt har sykefraværet på sykehjemmet vært i gjennomsnitt de siste 12 månedene? *Avrund til nærmeste antall hele prosent.* ⇨ ☐☐

12. Gi *sykehjemmet ditt* en totalskåre for forebygging av vold, overgrep og forsømmelser mot beboere: ⇨

Svært dårlig 0 1 2 3 4 5 6 7 8 9 10 *Svært bra*
☐☐☐☐☐☐☐☐☐☐☐

13. Gi *norske sykehjem på landsbasis* en totalskåre for forebygging av vold, overgrep og forsømmelser mot beboere: ⇨

Svært dårlig 0 1 2 3 4 5 6 7 8 9 10 *Svært bra*
☐☐☐☐☐☐☐☐☐☐☐

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Takk for at du ville svare på spørsmålene!

Hva mener du?

Vi ønsker å høre din mening på hvordan det var å delta i denne pilotstudien.

1. Hvor lang tid brukte du på å fylle ut spørreskjemaet? _____ minutter 2. Hva synes du om lengden (antall spørsmål) på spørreskjemaet? Passe langt☐ For langt☐ Altfor langt☐
3. Fikk du anledning til å fylle ut spørreskjemaet i arbeidstiden? Ja/nei, evt. hvorfor ikke? Andre kommentarer?
4. Hvor lett eller vanskelig synes du det var å fylle ut spørreskjemaet?
5. Var det ord og/eller uttrykk som var ukjente eller vanskelige å forstå? I så fall, hvilke og hvorfor?
6. Var spørsmålene i spørreskjemaet forståelige? Hvis ikke, hvilke og hvorfor?
7. Var instruksjonene i spørreskjemaet forståelige? Hvis ikke, hvilke og hvorfor?
8. Var det spørsmål i spørreskjemaet som du ikke ønsket å svare på? Hvis så, hvilke og hvorfor?
9. Har du noen øvrige kommentarer til selve spørreskjemaet?
10. Har du noen øvrige kommentarer til spørreundersøkelsen eller gjennomføringen av denne?
11. Synes du det er nødvendig at man kartlegger uønskede hendelser mot beboere på sykehjem? Ja ☐ Nei ☐

Tusen takk! ☺

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