

Life-course, ageing and generations in Norway: the NorLAG study

Britt Slagsvold, Marijke Veenstra, Svein Olav Daatland, Gunhild Hagestad, Thomas Hansen, Katharina Herlofson, Kristine Koløen and Per Erik Solem

Norwegian Social Research (NOVA), Munthesgt 29, Pb 3223 Elisenberg, NO-0208 Oslo, Norway

Correspondence: Britt Slagsvold, E-mail: bsl@nova.no

INTRODUCTION

At the turn of this century, Norway was one of few Western countries without a large-scale longitudinal study on ageing and the life-course. Norwegian ageing studies were in general small and cross-sectional. The empirical foundation provided by large-scale longitudinal studies like those found in countries such as Sweden (SWEOLD, SNACK), Germany (DEAS, BASE), United States (HRS), and the Netherlands (LASA) was lacking. As such, there was limited knowledge on ageing and age-related changes in Norwegian welfare politics. In 2001, Norwegian Social Research (NOVA) therefore launched the Norwegian Life Course, Ageing and Generation Study (NorLAG), with financial backing from the Research Council of Norway, the Ministry of Social Affairs, and NOVA.

The NorLAG study is a multidisciplinary endeavour, primarily located in the intersection between sociology and psychology, but including themes, models, and research instruments from social medicine, clinical psychology, demography, political science and anthropology. It is designed as a longitudinal study for five waves of data collections. So far, two waves have been conducted. The first one was carried out in 2002-03. In the second wave (2007-08), NorLAG was merged with the United Nations-initiated Generations and Gender Survey (GGS). The data collection was therefore labelled LOGG: Life-course, Generation and Gender. Whereas the first wave of NorLAG includes persons 40 years and older, LOGG also includes persons 18 to 39 years. Both the NorLAG and LOGG datasets are now part of ACCESS Life Course, a Research Infrastructure Project that is financed by the National Financing Initiative for Research Infrastructure at the Research Council of Norway (1). This way, data are made easily accessible to the whole research community. The present paper provides an overview of the NorLAG study, including descriptions of the study's objectives and key research areas, details about the two data collections, and information about how to get hold of the data. In line with the theme of this special issue of the Norwegian Journal of Epidemiology, our main focus will be on the NorLAG study, including persons 40 years and older.

THE SCOPE OF THE NORLAG STUDY

The objectives of the NorLAG study are three-fold: (i) to explore the conditions and contents of active ageing

and quality of life in older years, (ii) to examine how different social contexts respond to long lives and ageing populations, (iii) to provide knowledge needed for the development of sustainable policies and practices in the field. With the inclusion of young adults, additional aims of the second data collection include studying fertility histories and intentions, partnership dynamics, home leaving and gender equality (2).

The NorLAG study is framed in a life-course perspective. This perspective assumes (i) that ageing and old age are embedded in life trajectories, or pathways. In order to understand persons' current choices and life situations, we need to know where they "have been". (ii) Life trajectories are interdependent. Within a life, there are interactions across careers in different life domains, such as work and family. Across lives, progress and obstacles reflect the needs and resources of "fellow life travellers". This is especially clear in the family realm. (iii) The shape of life reflects their historical context, thus, different cohorts age in different ways. The increasing length of lives and the changing age structure of the population are embedded in other complex forms of social change. These changes present both societies and individuals with new challenges and may create sharp contrasts between birth cohorts with different historical experiences. Hence, we cannot assume that today's 60-year-old will be like today's 80-year-old in twenty years. For example, health patterns among specific cohorts of men and women are likely to be affected by their current as well as historical structural position within society and their family roles.

The sample included in the NorLAG study represents three phases of life: middle age, the "third age" (or young old), and the "fourth age" (advanced old age). A longitudinal design gives the opportunity to not only examine phases in the second half of life, but also to explore ageing as a process, which may unfold differently for individuals from contrasting cohorts. Stability and change across later life are examined in four major life domains: (1) Work and retirement, (2) Family and intergenerational relationships, (3) Mental health, quality of life, and sense of control, (4) Health, health behaviour and care.

SAMPLING DESIGN AND DATA COLLECTION

The sample for the NorLAG survey was drawn from the non-institutionalised population aged 40-79 years in 30 municipalities and townships in Norway. Municipalities were sampled from four geographical areas:

Oslo and Akershus, Agder, Nord-Trøndelag, and Troms. Within each municipality and township the sample is stratified according to gender and age. The first wave of data was collected during 2002 and 2003 and included a gross sample of 8,298 adults (3).

In the second wave of data collection (2007-08), NorLAG was merged with the United Nations-initiated Generations and Gender Survey (GGS) (4). The objectives and items of the two studies overlapped considerably. In this merge, most items from the first wave were repeated, and batteries of questions from GGS about fertility, family dynamics and values were added (4). In this wave, the entire gross sample from wave 1 was contacted again. Persons who had moved from the municipality or township within Norway after the first wave were also contacted. In addition, a nationally representative sample of persons aged 18-79 years was included, resulting in a total gross sample of 25,368 (including 538 persons 80-84 years from the first wave of NorLAG). The nationally representative sample is stratified according to gender, age, geographical region and centrality of residential municipality (most central – least central). More detailed information about sampling can be obtained elsewhere (2,5). An overview of the number of respondents in the two waves of data collection across 5 year birth cohorts is presented in Table 1. This table also shows the number of respondents participating in both waves of data collection (NorLAG panel).

Statistics Norway has been responsible for sampling and data collection in both waves. Primary sources are computer assisted telephone interviews (CATI) and self-administered questionnaires sent by mail 14 days after the interview. The mean length of the telephone interview was 32 minutes in the first wave and 43 minutes in the second wave. Secondary sources for data collection are administrative register data such as the Population register, Tax and income register, National database on education, Birth register, and Statistics Norway's events database (FD-trygd). Register data have been used at different stages, such as for sampling and data quality control by Statistics Norway, and also as supplemental data sources before and after the interview. Participation and post-interview linkage to public register data was based on informed consent. Annual updates of the registers are added from 2003 up to 2007 for first wave participants, and up to 2011 for participants in the second round of data collection.

Response rates for the two waves and modes of interview are presented in Table 2. In the first wave of data collection 5,559 persons (67%) responded to the telephone interview and 4,149 (75%) of these returned the postal questionnaire. At the time of sampling for the second wave (31.12.2006), 264 of the wave 1 respondents had died and 25 had emigrated. In wave 2, 71.6% (N=3,774) of the respondents from wave 1 were retained (Table 2). This corresponds to 49.8% of the eligible gross sample (6). The postal conditional longitudinal response rate for the second wave of

NorLAG is 67.5%. This number is calculated by dividing the number of persons who responded to the postal questionnaire in the second wave, by the number of eligible persons who responded to the postal questionnaire at the first wave. The postal *unconditional* response rate is 35.2% (N= 2,672), indicating the percentage of the eligible gross sample that has responded to both the telephone interview and the postal questionnaire in both waves.

In the second data collection, 14,892 (60%) persons aged 18 to 79 years participated in the telephone interview. Table 3 illustrates the non-response rates in the two waves of data collection. Non-response bias is relatively small, except for the bias associated with level of education (Table 3). Those with basic education are underrepresented whereas persons with higher levels of education are overrepresented.

A specific concern for studies on ageing is that attrition is considerable. Therefore, the oldest participants were oversampled in NorLAG to ensure that there would be reasonable numbers also in subsequent waves of data collection. Attrition rates from wave 1 to wave 2, that is, those who responded in the first wave of NorLAG but did not respond in the second wave, are also described in Table 3. Attrition between the two waves is associated with old age and low educational attainment. As attrition is associated with predictors and outcomes of interest to our research, for example health, work and well-being, an important challenge will be to assess the relevance of imputation techniques or perform accurate statistical analyses capable of handling missing data.

Table 1. Overview over respondents in the two waves of data collection (NorLAG1 and LOGG) and the effective sample size in NorLAG panel; across 5 year birth cohorts.

Cohort birth year	NorLAG wave 1 2002-03	NorLAG 2/ LOGG 2007-08	NorLAG panel, wave1 and wave 2 2007-08
1922-26	463	(264)	199
1927-31	548	564	291
1932-36	545	684	347
1937-41	697	976	510
1942-46	755	1,213	571
1947-51	841	1,347	619
1952-56	861	1,357	620
1957-61	862	1,415	617
1962-66	-	1,427	
1967-71	-	1,728	
1972-76	-	1,425	
1977-81	-	1,135	
1982-86	-	1,085	
1987-88	-	536	
Total	5,559	15,156	3,774

Table 2. Response rates for the NorLAG panel sample (40+years) and LOGG (18-79 years).

	N	Response rate
NorLAG Panel 40+		
<i>Wave 1 age 40-79</i>		
Telephone interview		
Net sample	5,559	67.0
Postal questionnaire		
Net sample	4,149	74.6
<i>Wave 2 age 45-84</i>		
Telephone interview, conditional longitudinal response rate		
Sample (persons interviewed by telephone wave 1)	5,559	
Ineligible due to emigration or death by 31.12.2006	289	
Eligible	5,270	100
Net sample	3,774	71.6
Postal questionnaire wave 2		
Net sample	2,983	79.0
<i>Postal questionnaire, conditional longitudinal response rate</i>		
Sample (persons who responded to post wave 1)	4,149	
Ineligible (death or emigration by 31.12.2006)	188	
Eligible	3,961	100
Net sample	2,672	67.5
LOGG age 18-79		
Telephone interview		
Net sample	14,892	60.0
Postal questionnaire		
Net sample	10,794	72.5

Table 3. Non-response in the two waves of data collection (NorLAG1 and LOGG) and attrition from NorLAG1 to NorLAG2 (conditional response rates).

	NorLAG1 2002-03			NorLAG/LOGG 2007-08			NorLAG attrition from wave 1 to 2		
	Interview	Non-response	Total N	Interview	Non-response	Total N	Interview	Attrition	Total N
Total	67.0	33.0	8,298	60.0	40.0	24,830	71.6	28.4	5,270
Gender									
Men	68.1	31.9	3,969	59.4	40.6	12,364	72.8	27.2	2,525
Women	66.0	34.0	4,329	60.5	39.5	12,466	70.5	29.5	2,745
Age									
18-29				55.1	44.9	4,998			
30-39				59.8	40.2	5,276			
40-49	71.0	29.0	2,419	63	37.0	4,512	72.8	27.2	1,699
50-59	68.0	32.0	2,331	62.5	37.5	4,326	76.6	23.4	1,554
60-69	66.7	33.3	1,858	64.1	35.9	3,413	73.2	26.8	1,170
70-79	60.1	39.9	1,680	54.1	45.9	2,305	57.9	42.1	847
Educational level									
Primary (8-10)	56.2	43.8	2,168	47.2	52.8	6,379	56.3	43.7	1,113
Secondary (11-14)	69.1	30.9	4,213	60.0	40.0	10,429	71.8	28.2	2,774
Higher education (14+)	76.5	23.5	1,815	72.9	27.1	7,456	84.3	15.7	1,347
Unknown	39.2	60.8	102	33.6	66.4	566	54.3	45.7	35
Region									
Oslo and Akershus	62.7	37.3	3,455	61.9	38.1	6,164	75.6	24.4	2,056
Hedmark and Oppland				61.1	38.9	1,495			
Other Eastern Norway (Østlandet)				60.3	39.7	3,241			
Agder and Rogaland (NorLAG: only Agder)	67.1	32.9	1,619	56.3	43.7	4,435	69.8	30.2	1,017
Vestlandet				62.0	38.0	3,213			
Trøndelag (NorLAG: Nord-Trøndelag)	73.3	26.7	1,615	60.5	39.5	3,446	69.7	30.3	1,134
Nord-Norge (NorLAG: Troms)	69.7	30.3	1,609	57.7	42.3	2,836	67.7	32.3	1,063

WHAT HAS BEEN MEASURED AND WHAT HAS THE STUDY FOUND?

Questions and instruments in NorLAG originally build upon international longitudinal ageing studies that were on-going at the time when the study was planned. To some extent, the second wave of NorLAG has been harmonised to match the international format of the GGS. Table 4 provides an overview of the main outcome variables and predictors in both waves of data collection. Full documentation of the items and scales is provided through our website (<http://norlag.nova.no>), the Nesstar function at Norwegian Social Science Data Services (NSD) and in the documentation reports from Statistics Norway (3,6). Below we present a summary of the main measures and selected results for the four main life domains in NorLAG.

1. Work and retirement

The share of older persons in the total population will increase significantly in the coming years, as a greater proportion of the post-war baby-boom generation reaches retirement age. This will, in turn, lead to an increased burden on those of working age to provide for the social expenditure required by an ageing population for a range of related services. European welfare states, including the Norwegian, respond by encouraging active ageing (e.g. later retirement) and flexible involvement in work across the full span of adult life. In NorLAG, the combination of all three data sources (CATI, postal and register) provides a comprehensive battery of questions on work and retirement, not only for the respondent, but also for his/her partner (Table 4).

NorLAG researchers have mainly focused on retirement intentions, retirement behaviour and on the consequences of retirement. Retirement intentions may operate at different levels of firmness: (i) *considering* working after pensionable age; (ii) *preferences* for retirement at a certain age; and (iii) *decisions* to retire at a certain age. Our analyses show that *decisions* predict behaviour better than *preferences*. However, as it is easier for older workers to indicate a preferred age of retirement than a decided age, preferred age may be an equally good or even better proxy for actual retirement behaviour. Older workers with poor health retire earlier than they prefer and have decided, whereas workers with high education less often retire earlier than they prefer. This illustrates that labour market resources, such as health and education, not only affect labour market participation, but also the opportunity to retire at the preferred or decided age (Solem PE, et al. Retirement intentions and retirement behaviour. 2012 (in progress)).

NorLAG results confirm that the arrangement for early retirement (AFP) to some extent reflects health related causes for early labour market exits. Among men, the effect is strongest for subjective health status, whereas among women, depressive symptoms have the strongest impact on subsequent early retirement

(7). Although poor health represents a limitation for work, there is no clear cut point where work becomes impossible. Even in the lowest health decile, a fair proportion is employed. However, age adds to the effect of health on early retirement. Persons with poor health aged 55-61 are less inclined to work compared to those below 55 with similar health status. This age effect may reflect negative stereotypes of older workers and indicate a potential for increased employment rates in middle-aged and older age groups (8). Compared to any other type of retirement, disability pensioning tends to weaken the self-esteem among retirees (9). This finding indicates that disability pension is not an appealing exit path. More likely, it constitutes a risk for self-esteem and quality of life. Learning opportunities at the workplace are related to older workers' subjective work ability. Learning may boost work ability and prevent early exit (10).

2. Family and intergenerational relationships

There is a concern that demographic trends represent a threat to intergenerational family relationships. For example, assumptions are made about how decreasing fertility and increasing divorce and cohabitation rates, as well as a rise in female labour force participation, mean less care for frail parents. An important objective of the NorLAG study has therefore been to map out family networks in later life and the potential for intergenerational solidarity. Survey questions about family relationships are inspired by the "intergenerational solidarity model" (11) and include the following dimensions: family structure, contact, relationship quality, help and care, and family responsibility norms. The most extensive battery of questions refers to respondents' parents and oldest adult child, but questions about siblings, grandparents, grandchildren and stepchildren are also included (Table 4).

Family responsibility norms are found to be weaker in Norway than in countries further south and east of Europe (12). Nonetheless, data from NorLAG respondents illustrate that the majority (about 70%) of older parents see their children at least once a week (13). Expectations towards grandparents' role are comparatively high, and around 60 per cent of grandparents report taking care of grandchildren at least monthly (14). Also, adult children seem to help out when parents' needs arise independently of their prior attitudes towards so-called filial responsibility norms (15).

Earlier studies of the association between employment and care giving indicate that providing help and care to parents can be difficult to combine with employment. Analyses based on NorLAG data show that care giving daughters tend to work part-time (16) and that daughters who combine full-time employment and care giving have a higher risk of sickness absence (17). The detrimental consequences of parents' divorce for the relationship between adult children and fathers are well documented in previous international research. Our analyses show, in contrast to most earlier studies,

Table 4. Main outcome measures and predictors in the four domains of the two waves of data collection in NorLAG.

	NorLAG1 2002-03	NorLAG2/LOGG 2007-08
Demographic and socio-economic factors		
Sociodemographics respondent (age, gender, marital history, education, income)	Registry	Registry
Household composition	Registry & telephone	Registry & telephone
Sociodemographics partner (age, gender, education, income)	Registry	registry
Sociodemographic children/stepchildren (age, gender, education)	Registry	registry
Sociodemographics parents (age, gender, marital status, education, place of residence)	Registry	registry
Religion, religiosity, political party	Telephone	Telephone
Work and retirement		
Employment respondent (type of occupation, working hours, work leave, job characteristics, job satisfaction)	Telephone	Telephone
Employment partner (type of occupation, working hours, work leave, job characteristics)	Telephone	Telephone
Retirement planning and motivations	Telephone	Telephone
Social benefits (Disability/retirement/unemployment) respondent and partner	Registry	Registry
Subjective work ability (change)	Postal	Postal
Psychosocial work environment	Telephone	Telephone
Causes of retirement	Telephone	Telephone
Health, health behaviour and care		
Longstanding health problem, Longstanding health limitations, (instrumental)		
Activities of Daily Living	Telephone	Telephone
Self-rated health status (SF-12)	Telephone	Telephone
Sensory functions and walking impairments	Telephone	Telephone
Lifestyle factors (smoking, alcohol consumption, physical activity, body-mass index)	Postal	Postal
Medication use and health care use	Postal	Postal
Longstanding health limitations, memory problems and care needs for household members and parents	Telephone	Telephone
Professional care (respondent, household members, parents)		Telephone
Informal care (nursing)		Telephone
Mental health, quality of life and sense of control		
Anxiety (HADS-A) and Depression (CES-D)	Postal	Postal
Satisfaction with life, Domain-specific life satisfaction	Postal	Postal
Positive-negative affect (PANAS)	Postal	Postal
The Short Loneliness Scale, Single item loneliness	Postal/Telephone	Postal/Telephone
Personality traits and dispositions (Big Five Inventory, BEM sex roles, Self-efficacy)	Postal	Postal
Locus of control/Self-Esteem Scale/Psychological Well-being Scale	Postal	
Personal Mastery Scale	Telephone/postal	Telephone/postal
Age-identity	Postal	Postal
Family and intergenerational relationships		
Family norms		Postal
Filial responsibility Scale	Postal	Postal
Family structures	Registry & Telephone	Registry & Telephone
Contact patterns (Children, Parents, Siblings)	Telephone & Postal	Telephone & Postal
Perceived relationship quality (Children/Partner/Parents)	Telephone & Postal	Telephone & Postal
Support exchanges (emotional, instrumental, financial)	Telephone	Telephone
Marital status history	Registry	Registry & telephone
Fertility history		Registry & telephone
Other topics		
Basic Human Values Scale	Postal	Postal
Life events	Postal	Postal
Pets	Telephone	Telephone
Leisure activities	Postal	Postal
Housing	Telephone	Telephone

that also the tie between mothers and adult children is vulnerable in cases of parental divorce (13), in particular the mother-daughter relationship (18). Unmarried cohabitation on the other hand, does not seem to represent a threat to intergenerational relationships in Norway. We find no difference between married and

cohabiting children on any of the intergenerational solidarity dimensions (13,19).

Contemporary Norway is characterised by high intergenerational solidarity as indicated by contact rates and support exchanges. Divorce and the work-care squeeze may however, put this solidarity at risk.

3. Mental health, quality of life and sense of control

Increased life-expectancy has led to an increased policy interest in adding quality to years of life, and in the related concepts of mental health, successful and active ageing, and ageing well. The European Commission has for example proposed that 2012 be designated as the "European Year for Active Ageing". Active ageing indicates the process of optimizing opportunities for health, participation and security in order to enhance quality of life as people age.

NorLAG includes a wide variety of validated measures and scales, including life satisfaction, positive and negative affect, depression, anxiety, loneliness, self-esteem and sense of control (Table 4). NorLAG researchers have had a special interest in the "well-being paradox". Old age is often associated with multiple psycho-social losses and declining health, qualifying later life as a period of decline in objective quality of life. Yet, research has time and again illustrated an absence of strong declines in subjective well-being despite a deterioration of objective life conditions. Findings from the NorLAG study indicate that quality of life and mental health show stability well into older age (20). In advanced age however, life satisfaction declines and negative affect increases over time. Other measures only indicate cross-sectional age differences: older cohorts have less positive affect and higher depression compared to younger cohorts. Another "well-being paradox" is related to financial satisfaction. In general, earlier studies show that financial satisfaction is higher among older than among younger people in spite of lower income among the old. Psychological adaptation has been described as one explanatory mechanism. Analyses based on NorLAG data suggest however that higher financial satisfaction among the elderly can be explained by their higher assets and lower debts (21).

An important aspect of "ageing well" is sense of control, which is known to be related to access to resources. Previous international studies have found that sense of control decreases from age 60, and more so for women than for men. Findings from NorLAG indicate that the onset of decrease starts ten years later in Norway, and that the increasing gender gap in sense of control with age is fully explained by educational differences (22). Recent results also show that caring for a nonresident parent is associated with a positive change in sense of control among daughters (23), and that sense of control (mastery) may be an important resource for avoiding loneliness in later life, in particular for people with an impairment (Nicolaisen and Thorsen 2012 in this special issue).

International research has illustrated the negative associations between demographic trends (increasing cohabitation and divorce rates, childlessness) and quality of life in later life. NorLAG researchers have studied whether these associations also hold for the Norwegian context. As contextual characteristics affect well-being and quality of life, the impact of de-

mographic trends may be different in Norway. Findings from NorLAG show that cohabitation in Norway confers similar emotional benefits as does marriage, also in later life (24), and indicate that childlessness in Norway is not related to quality of life, neither in middle or old age (25). In sum, results from NorLAG underline that age relates differently to various aspects of quality of life and highlight the role of social policies in shaping the impact of demographic changes for quality of life, also in later life.

4. Health, health behaviour and care

Health and changes in health patterns constitute key issues in planning for an ageing society, motivated not only in concern for public expenditures, but also in support for quality of life in old age. Studying factors that contribute to maintaining good health and functioning until old age (healthy ageing) and assessing care needs in an ageing society are among the main topics in the NorLAG study. The two waves of data collection include a broad range of health measures, including chronic conditions, functional health status (Short Form 12), (Instrumental) Activities of Daily Living, Body Mass Index, and sensory functioning. Respondents have also indicated health problems (including varying degrees of memory problems) for close relatives such as partner and parents. An extensive battery of questions refers to care exchanges and also includes questions on formal care provisions to parents. Health behaviours are measured by items on present and past smoking habits, alcohol consumption, physical exercise, contact with health services and use of medications (Table 4).

Social inequalities in health and health behaviour have been thoroughly documented. NorLAG adds to this research field by showing that social health inequalities accumulate throughout the life course and by assessing the importance of childhood conditions as well as major transitions related to family formation and labour market attachment (26). Longitudinal studies on long-term changes in health behaviours in older age groups are rare, and there is limited knowledge of the extent to which individuals change their health behaviours following a recent onset of a chronic health problem. Data from NorLAG respondents 60 years and older illustrate that ten percent report a decrease in smoking, whereas 13 percent report a decrease in physical activity (27). The onset of a chronic health condition tends to contribute to lower alcohol consumption but also to less physical activity. Retrospective data from NorLAG indicated that deteriorating health is important for smoking cessation in elderly men but not for elderly women (28). The results suggest that there remains a potential for the health system in targeting a potential "window of opportunity" for individuals to adopt new healthy behaviours in later life.

Analyses of NorLAG data suggest that the family and welfare state balance in elder care is around 50-50. Yet, the welfare state (public services) dominates

when nursing care is needed, primarily because elders with extensive needs sooner or later move into assisted housing or a nursing home (29). Needs among family members are also a source of concern (negative affect) and lower subjective well-being (16). This, together with the strong positive association between employment and well-being, speaks for supportive measures that allow carers to combine care and employment over supports that “help” them retreat to full-time family care.

WHAT ARE THE MAIN STRENGTHS AND LIMITATIONS OF THE STUDY?

The main strengths of the NorLAG data are the combination of longitudinal survey and register data, which enables the analysis of role changes and life events such as onset of chronic illness, retirement, partner loss, and sickness leave, and their consequences over time. Data not only include information about the respondents, but also about their immediate family. The large samples facilitate subgroup analysis, for example, across educational level, gender and age. Furthermore, the NorLAG study includes a rich set of validated psychological and sociological scales, including depression, loneliness, well-being, personality, values, and health status. The data have good potential for international comparative studies on important themes and life-course transitions as the NorLAG survey is based upon several large international ageing surveys. In addition, the second wave is part of the international GGS which currently includes 19 participating countries.

A main challenge is related to attrition between waves, which may have a direct as well as indirect impact on the outcomes of interest to our research. Although some research has shown that attrition tends to be highest in the first follow-up and then decreases in subsequent follow-ups, avoiding additional attrition in future waves will be essential. In longitudinal surveys, it is important to secure continuation of the core items and instruments to avoid methodological difficulties in analysing changes over time. Hence, we have limited possibilities for keeping up with novel and perhaps improved techniques of measuring key variables. Another potential limitation of the NorLAG study is the relatively long time (five years) between subsequent waves of data collection, which may be too long for pathways to be identified, especially in relation to functional decline. For some topics, such as family life, work and retirement, this is compensated by the additional annual register data. Finally, there is a trade-off between the advantages of a broad ageing study such as the NorLAG and a more detailed study focusing on single trajectories in detail.

HOW TO GET HOLD OF THE DATA

The NorLAG and LOGG data are available free of charge to national and international researchers. The data are part of the ACCESS Life Course Database infrastructure, which provides easy-to-use data files for each of these studies: a NorLAG panel file (40-84 years) and the cross-sectional LOGG file (18-79 years). An important aim of the infrastructure project is to facilitate access to the data by providing cleaned and tested data, detailed documentation of datasets and variables, and ready to use scales and measures. More information is available at the website of the project (<http://norlag.nova.no>).

ABBREVIATIONS

NOVA	Norwegian Social Research
NSD	Norwegian Social Science Data Services
NorLAG	Norwegian Life-course, Ageing and Generation
LOGG	Life-course, generation and gender
GGS	Generations and Gender Survey
ACCESS	ACCESS Life-course Database Infrastructure
NFR	Research Council of Norway
CATI	Computer Assisted Telephone Interview
SWEOLD	Swedish Panel Study of Living Conditions of the Oldest Old
SNACK	The Swedish National study on Aging and Care in Kungsholmen
BASE	Berlin Ageing Study
DEAS	German Ageing Survey
LASA	Longitudinal Ageing Study Amsterdam
HRS	Health and Retirement Study
AFP	Avtalefestet Pensjon (contractual early retirement scheme)

FUNDING

The NorLAG and LOGG surveys are financed by the Research Council of Norway (grant no. 149564 and 168373), Ministry of Health and Care Services, Ministry of Labour, Ministry of Children, Equality and Social Inclusion, Ministry of Local Government and Regional Development, Norwegian Social Research (NOVA) and Statistics Norway. The NorLAG and LOGG datasets are part of the ACCESS Life Course infrastructure project funded by the National Financing Initiative for Research Infrastructure at the Research Council of Norway (grant no. 195403) and NOVA.

ACKNOWLEDGEMENTS

A number of researchers have been involved in the development of the studies and databases. In addition to the authors of the present paper, these are from Norwegian Social Research: Morten Blekesaune, Sten Erik Clausen, Ivar Lima, Tor Inge Romøren, Anne Mette Sørensen, and Kirsten Thorsen. From Statistics Norway: Helge Brunborg, Lars Dommermuth, Trude Lappegård and Kari Skrede have been central in developing LOGG.

REFERENCES

1. Research Council of Norway. *Tools for Research – Part II. Norwegian Roadmap for Research Infrastructure 2012*. Oslo, 2012.
2. Brunborg H, Slagsvold B, Lappegård T. Livsløp, generasjon og kjønn (LOGG): LOGG 2007 – en stor undersøkelse om livsløp, generasjon og kjønn. *Samfunnsspeilet*. 2009; **1**.
3. Holmøy A. *Undersøkelse om livsløp, aldring og generasjon (LAG): dokumentasjonsrapport. Oppdatert versjon av Notat 2003/88*. Oslo-Kongsvinger: Statistisk sentralbyrå, 2004.
4. United Nations. *Generations & Gender Programme. Survey Instruments*. New York and Geneva, 2005.
5. Lappegård T, Veenstra M. Life-course, generation and gender. LOGG 2007. *Field report of the Norwegian Generations and Gender Survey*. Osl-Kongsvinger: Statistisk Sentralbyrå. 2010.
6. Bjørshol E, Høstmark M, Lagerstrøm BO. *Livsløp, generasjon og kjønn. LOGG 2007. Dokumentasjonsrapport*. Oslo-Kongsvinger: Statistisk Sentralbyrå. 2010.
7. Blekesaune M, Veenstra M. Helsevikt og pensjoneringsatferd. *Tidsskrift for velferdsforskning* 2010; **2**.
8. Solem PE, Nicolaisen M, Finseraas H. Dårlig fysisk helse – ingen hindring for å jobbe? *Samfunnsspeilet* 2009; **23** (1): 36-9.
9. Furunes T, Mykletun RJ, Solem PE. How do different exit routes from work affect older workers's self-esteem? In: De Wals S, Meszaros K, editors. *Handbook on Psychology of Self-Esteem*. New Yourk: Nova Publishers, 2012: 325-37.
10. Solem PE. Age changes in subjective work ability. *Int J Ageing Later Life* 2008; **3** (2): 43-70.
11. Bengtson VLR, Roberts REL. Intergenerational solidarity in aging families: an example of formal theory construction. *J Marriage Family* 1991; **53** (4): 856-70.
12. Daatland SO, Herlofson K, Lima IA. Balancing generations: on the strength and character of family norms in the West and East of Europe. *Ageing & Society* 2011; **31**:1159-79.
13. Daatland SO. Marital history and intergenerational solidarity: the impact of divorce and unmarried cohabitation. *J Social Issues* 2007; **63** (4): 809-25.
14. Herlofson K, Hagestad GO. Transformations in the role of grandparents across welfare states. In: Arber S, Timonen V, editors. *Contemporary grandparenting: Changing family relationships in global contexts*. Bristol: Policy Press, 2012: 27-49.
15. Herlofson K, Slagsvold B, Lima IA. Ansvar for gamle foreldre – fra holdninger til handlinger. *Aldring & Livsløp* 2009 (3-4): 36-43.
16. Daatland SO, Veenstra M, Lima IA. Norwegian sandwiches. On the prevalence and consequences of family and work role squeezes over the life course. *Eur J Ageing* 2010; **7** (4): 271-81.
17. Ugreninov E. Fører kombinasjonen av yrkesaktivitet og omsorg for hjelpetrenende foreldre til høyt sykefravær? *Tidsskrift for velferdsforskning* 2012; **15** (3): 192-206.
18. Herlofson K. How gender and generation matter. Examples from research on divorced parents and adult children. *Families, Relationships and Societies*, in press.
19. Slagsvold B, Hansen T. Flere samboere – vil de i like stor grad som gifte stille opp for partners foreldre? In: Slagsvold B, Solem PE, editors. *Morgendagens eldre: En sammenligning av verdier, holdninger og atferd blant dagens middelaldrende og eldre*. Oslo: NOVA, 2005.
20. Hansen T, Slagsvold B. The age and subjective well-being paradox revisited. A multidimensional perspective. *Norsk Epidemiologi* 2012; **22** (2).
21. Hansen T, Slagsvold B, Moum T. Financial satisfaction in old age: A satisfaction paradox or a result of accumulated wealth? *Soc Indic Res* 2008; **89** (2): 323-47.
22. Slagsvold B, Sørensen A. Age, education, and the gender gap in the sense of control. *Int J Aging Hum Dev* 2008; **67** (1): 25-42.
23. Hansen T, Slagsvold B, Ingebretsen R. The strains and gains of caregiving: An examination of the effects of providing personal care to a parent on a range of psychological outcomes. *Soc Indic Res* (online first), 2012.
24. Hansen T, Moum T, Shapiro A. Relational and individual well-being among cohabitators and married individuals in midlife –Recent trends from Norway. *J Fam Issues* 2007; **28** (7): 910-33.
25. Hansen T, Slagsvold B, Moum T. Childlessness and psychological well-being in midlife and old age: An examination of parental status effects across a range of outcomes. *Soc Indic Res* 2009; **94** (2): 343-62.
26. Veenstra M, Lima IA, Daatland SO. *Helse, helseatferd og livsløp*. Oslo: NOVA 2009, Report No. 3/09.
27. Veenstra M, Syse A. Health behaviour changes and onset of chronic health problems in later life. *Norsk Epidemiologi* 2012; **22** (2).
28. Veenstra M. Hva påvirker røykeslutt i eldre år? *Aldring og Livsløp* 2009 (3-4): 16-20.
29. Daatland SO, Veenstra M. Bærekraftig omsorg? Familien, velferdsstaten og aldringen av befolkningen. Oslo: NOVA; 2012 Rapport nr 2/12.