

# **Management of Volunteers in Public Organizations: How Does it Impact Service Professionals?**

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## Introduction

Volunteers are often described as a vital resource for designing and delivering services in public organizations, adding extra capacity to help achieve their missions (Nesbit et al. 2018). For this reason, existing studies on volunteer management have focused on the practices, structures and policies – termed “Volunteer Management Practices” (or VMPs) – that organizations implement to attract, motivate and retain volunteers. However, as noted early on by Brudney (1990), volunteer programs must satisfy not only the volunteers themselves, but also paid staff. This observation is critical: too often, expected benefits from involving volunteers do not materialize, especially when volunteer-staff relationships go sour, or volunteers aren’t effectively integrated into organizational routines that offer a meaningful and complementary contribution to professional staff’s duties and job tasks. As noted by Brudney, “*without question, the most serious impediment to a successful volunteer program is the likely indifference or, worse, outright opposition of regular personnel to volunteers*” (Brudney 1990, 33).

Despite its importance, a surprisingly small number of studies empirically examine whether and how VMPs correlate with core positive and negative perceptions of volunteers among service professionals in public service organizations. In a literature review, Bonnesen and Thomsen (*unpublished*) identified only six studies on this topic across countries and work contexts (see Krogh & Lo 2022; Pearce 1993; Rimes et al. 2017; Vanderstichelen et al. 2019; von Schnurbein et al. 2023; Tavares et al. 2022) with only a small subset of these adopting large-N methods.

Our aim is to help rectify this issue by examining the associations between a series of VMPs and a portfolio of core staff outcomes among a large sample of health assistants working at nursing homes in Denmark. To do so, we collected survey responses among a sample of health assistants in collaboration with the largest Danish labor union in this sector (FOA). We assess the extent to which various core VMPs are adopted as perceived by the health assistants and correlate these indicators with staff perceptions of how clear or ambiguous volunteers’ tasks and roles are, to what extent the professionals perceive volunteers as a threat to the quality of nursing home services, and the quality of collaboration with volunteers at their nursing home.

Based on more than 600 unique responses, we find that a lack of guidelines on what tasks volunteers can solve as well as a lack of communication about volunteers to the employees is associated with greater role ambiguity about volunteer roles among health assistants. Furthermore, we find that a lack of

communication about volunteers to health assistants and a lack of joint staff-volunteer activities is associated with lower perceptions of the quality of staff-volunteer collaboration. Finally, our results show that a lack of a volunteer coordinator, guidelines and joint staff-volunteer activities is associated with greater concern for the quality of services among health assistants.

Our results offer a first important step toward mapping what volunteer management practices might be pivotal for creating positive attitudes towards volunteers as well as healthy volunteer-staff relationships in public service organizations. They also help identify VMPs that might be ripe for more rigorous evaluation efforts, including quasi- or field experimental manipulation to assess their causal impact on staff and organizational outcomes. Whereas the implementation of effective VMPs is often an axiomatic assumption of successful volunteer programs, the neglect of the “staff side” of the equation (Brudney 1990) masks – or, worse, obscures – the full picture of how VMPs work to ensure beneficial volunteer involvement in public organizations. Our paper offers an important step in rectifying this issue.

The rest of the paper is structured as follows. First, we introduce theory on volunteer management and how it relates to different staff outcomes. Next, we present our research design and data collection. This is followed by our empirical analyses. Finally, we draw conclusions and discuss the results of the study.

### **Theoretical background**

Today volunteers assist with designing and delivering different services in public organizations (Nesbit et al. 2018; Nabatchi et al. 2017). Volunteers work directly or indirectly with paid service professionals on solving complementary and/or core tasks (Brandsen & Honingh 2016). For instance, volunteers may assist nursing home professionals with serving food at nursing homes, or assist teachers in the classroom in primary schools.

If the promised benefits from such collaboration – of higher service quality, cost savings, or democratic advantages from volunteer involvement – are to materialize in public organizations, volunteers and service professionals need a well-functioning collaboration. But this matrimony is not always happy: All too often, service professionals hold negative attitudes towards volunteers. Some service professionals view volunteers as a threat to service quality and/or their own job security (Nesbit et al. 2018; Thomsen & Jensen, 2020). Service professionals may also feel uncertain about volunteer roles and tasks in their organizations (Jensen & Thomsen 2023; Nesbit et al. 2016). No matter the reasons, negative attitudes

and experiences with volunteers may lead to poor volunteer-staff relationships, which are typically associated with unwanted outcomes such as decreased job satisfaction, stress, and increased turnover (Nesbit et al. 2018; von Schnurbein et al., 2023).

It is of course a managerial task to ensure that volunteers and service professionals are willing and able to collaborate on providing high-quality services to citizens (Brudney, 1990). In this paper, we argue that managers may seek inspiration in the literature on “Volunteer Management Practices” (from henceforth termed ‘VMPs’), which was originally designed to “*promote successful use and integration of volunteers into the work environment*” (Rogelberg et al. 2010, 25), to prevent the development of negative attitudes and role ambiguity among service professionals as well as poor volunteer-staff collaboration. VMPs are inspired by common HRM theories and include practices such as recruitment, development of volunteers, communication and coordination. In a new literature review, Bonnesen and Thomsen (*unpublished*) take stock of this literature and find 38 publications that are specifically concerned with VMPs within public services. In their study, they identify 14 different VMPs which they term: *formalized management, program design, preparation of staff, recruitment & selection, screening & matching, volunteer development, administration & planning, relations management, cultural management, risk management, communication & coordination, volunteer motivation, volunteer involvement, and performance management.*

In our study, we limit our focus to six of these practices because – as we argue below – we expect these practices to have a positive impact on role ambiguity among service professionals, on their perception of volunteers as a threat to service quality, and/or on volunteer-staff collaboration. The six practices we study are (for further details, see Bonnesen and Thomsen (*unpublished*)): (1) *formalized management* (assigning one or more persons to be responsible for managing the volunteer program), (2) *program design* (tending to the structure of the program set-up, e.g. designing guidelines for volunteer tasks), (3) *recruitment and selection* (carefully finding and selecting volunteers that fit the needs of the organization), (4) *volunteer development* (introducing new volunteers to the organization and their tasks, and investing in the skills and knowledge development of volunteers), (5) *communication and coordination* (ensuring that information about the volunteer program is communicated to volunteers and staff, and that activities are well-coordinated with volunteers and staff), and (6) *relations management* (devoting resources to build healthy social relations between volunteers and staff).

Why should we expect these six practices to be especially important for staff outcomes? First, we expect that assigning a *formalized volunteer manager* to the program and managers' use of *communication* about the program to paid staff and volunteers (e.g., information about who are volunteering, what tasks volunteers should solve, and when they are present at the workplace etc.) and *coordinating* with staff and volunteers lead to less role ambiguity about volunteer roles among service professionals and better collaboration between staff and volunteers (Jensen & Thomsen 2023; Rimes et al., 2017). In the same way, we expect that the use of *program design*, such as setting up guidelines and rules for which tasks volunteers should solve and how, lead to less role ambiguity among service professionals (Brudney 1990; Einarsdóttir & Osia 2020; Jensen & Thomsen 2023). Second, we expect that tools under *recruitment and selection* of volunteers, such as doing short interviews with new volunteers to uncover their competences and motivation, as well as ensuring that volunteers are assigned to activities and tasks that match with their competences and motivation, ensure that skilled volunteers are recruited and they are matched with the right tasks, which may decrease professionals' perceptions of volunteers as a threat to service quality (Einarsdóttir & Osia 2020; Krogh & Lo 2022). Furthermore, the use of different tools placed under *volunteer development*, such as introduction of new volunteers to the organization and their tasks, as well as guidance of new volunteers (from staff or experienced volunteers) in how to solve their tasks, ensure that volunteers are skilled to solve their tasks, again decreasing professionals' perceptions of volunteers as a threat to service quality. Third, we expect that especially the use of *relations management*, such as joint volunteer-staff activities and events, may help improve volunteer-staff collaboration by solving possible misunderstandings or conflicts (Rogelberg et al. 2010). Furthermore, we also expect that other practices that help decrease service professionals' role ambiguity and threat perception may simultaneously, directly or indirectly, improve volunteer-staff collaboration. For instance, one would expect that *coordinating* with staff and volunteers may limit volunteer-staff conflicts (Krogh & Lo, 2020; López-Cabrera et al. 2020), leading to better volunteer-staff collaboration. Thus, we hypothesize the following:

H<sub>1</sub>: *The use of VMPs in public organizations will decrease ambiguity about volunteer roles among service professionals.*

H<sub>2</sub>: *The use of VMPs in public organizations will decrease service professionals' perception of volunteers as a threat to the quality of services.*

H<sub>3</sub>: *The use of VMPs in public organizations will increase the quality of volunteer-staff collaboration as assessed by paid staff.*

## **Research Design and Data**

To test our hypotheses, we need a case that draws extensively on volunteers, and where professional staff are at risk of experiencing role ambiguity about volunteer roles and of perceiving volunteers as a threat to the quality of services. Nursing homes in Denmark fulfill these requirements. Volunteers are used at 80 % of nursing homes in Denmark (FOA 2016), and previous research has shown role ambiguity about volunteer roles and commonly also a perception of volunteers as a threat to the quality of service among staff.

Health assistants are the largest occupational group at nursing homes in Denmark (Thomsen and Jensen 2020; Jensen and Thomsen 2023). Overall, health assistants are low-paid workers, and – though their work is highly needed and sought-after in the health care sector – their job positions do not generally experience a high social standing in Danish society (Vinge & Topholm 2022). Through secondary vocational training – a long option of three years and a short option of one-and-a-half years –, health assistants are specialized in care work. While they are also responsible for highly professionalized functions, such as handling medicine for those in their care, many of the tasks that they perform (such as tending to the social and psychological needs of nursing home residents) are not professionally limited to their profession and can, to a certain extent, also be performed by unskilled volunteers. Thus, nursing home staff may easily come to experience an overlap in roles and responsibilities vis-à-vis volunteers. On the other hand, with an ageing population, Denmark has seen an unmet demand for health assistants during the past decades, and recruiting for professional positions often prove demanding at Danish nursing homes (Larsen & Jacobsen 2022). As such, Danish nursing home staff are unlikely to feel at risk of job replacement by volunteer labor. But, with many nursing homes reporting a subpar ratio of professional staff to residents in need of care (FOA 2022), there is an obvious risk that popular or ‘fun’ tasks – such as socializing with residents or going on outings – are increasingly delegated to volunteers. This may come to be viewed negatively by staff that are thus left with a higher share of taxing or repetitive job tasks.

There are 900+ nursing homes in Denmark, 85 % of which are public – meaning they are owned, financed and regulated by the local municipality (Hjelmer 2016). Ownership does not, however, impact the ability of a nursing home to organize volunteer involvement, as all institutions have the opportunity to recruit volunteers and institutionalize efforts in a local association (often called a ‘friendship association’). Many nursing homes have chosen such a model for their voluntary engagement, with about half of nursing homes with volunteers hosting a ‘friendship association’ as found in a recent qualitative study (Bennesen & Thomsen, *unpublished*).

As previously mentioned, there are very few empirical studies on the association between VMPs and staff outcomes (Bennesen and Thomsen 2024), and very few of prior empirical studies employ large-N data on items related to professional staff (few exceptions are Rimes et al. 2017; von Schnurbein et al., 2023; Wu et al. 2019). This makes it difficult to generalize existing results to a broader context of employees. We address these shortcomings by collecting large-N cross-sectional data among nursing home employees in Denmark. The survey data were collected in collaboration with the labor union FOA which organize many members who work in the public sector, including health assistants employed at nursing homes. In June 2024, an electronic survey was distributed to members of FOA’s web panel of health assistants at nursing homes. The survey included questions on different topics relevant for FOA members, including 32 questions about volunteers at their workplace. A total of respondents completed the entire questionnaire about volunteers. The overall response rate for the survey was 39 %.

The independent variable for this study is VMPs. As mentioned in the theory section, we focus on six different practices, as we believe that these are particularly important for staff outcomes. The six practices are: *formalized management, program design, recruitment and selection, volunteer development, communication & coordination, and relations management*. Our measures on VMPs are inspired by previous studies (see Cuskelly et al. 2006; Ibsen et al. 2012; Intindola et al. 2016; Rogelberg et al. 2010; Rogers et al. 2016; Schnurbein et al., 2023; Wu et al. 2019). Table 1 below lists how we measure the different dimensions of VMPs.

[Insert Table 1]

Table A1 in the appendix show descriptive statistics for all VPM items. Here we can see that many respondents answer ‘don’t know’ especially in relation to items on *recruitment & selection* and *volunteer development*. These four items are therefore excluded from our analyses on association between VMPs and staff outcomes.

The dependent variables in our study are (i) role ambiguity, (ii) threat to service quality, and (iii) quality of collaboration. To measure these theoretical concepts, we draw on two previous studies on professional staff’s responses to volunteering (Jensen and Thomsen 2023; Thomsen and Jensen 2020). The exact questions are outlined in Table 2 below. We construct two indices (ranging 0-10): one for role ambiguity, and one for threat to service quality. Moreover, we construct one index (ranging from 1-5) on quality of volunteer-staff collaboration. ‘Don’t know’/’don’t recall’-answers are coded as missing. Table A2 in the Appendix provides descriptive statistics on our three outcomes measures.

[Insert Table 2]

Finally, the study includes a number of control variables. We control for education (health assistant with a *short* or a *long education*), gender, age (*years*), work experience (*more* or *less than 5 years*), region (*Zealand* or *rest of Denmark*), number of volunteers, former/retired employees as volunteers (*no* or *yes*), frequency of contact with volunteers during the last month, and whether employees are present when volunteers solve tasks. Descriptive statistics on the control variables and the exact wording of questions are shown in Table A3 in the appendix.

In the next section, we present our empirical results. Our analyses are conducted using OLS regression. As some of our dependent variables are highly correlated, we also conduct robustness check using unrelated regression.

## **Results**

Tables 3-5 report our main results on the associations between VMPs and professionals’ perceptions of the quality of the collaboration with volunteers (Table 3), role ambiguity (Table 4), and concern for the quality of care services (Table 5). We present the results for each VMP separately, but also together in a



“full” model since the adoption and use of VMPs is likely correlated within nursing homes and expected to be linked to our outcome variables.

Table 3, Model 6 shows that two VMPs – receiving information on volunteers’ schedules and tasks as well as opportunities for positive coordination through meetings and joint activities – correlate with professionals’ perception of the quality of the collaboration with volunteers. In both cases, a lack of information or absence of positive coordination are negatively associated with our outcome, meaning that these VMPs may hold particular promise for enhancing professionals’ views on volunteer-staff collaboration and relationships.

[Insert Table 3]

Table 4, Model 6 similarly reveals that receiving information about volunteers’ schedules and tasks is negatively correlated with role ambiguity. We see a similar result for the related volunteer management practice tied to the issuance of guidelines for volunteer tasks. These results seem intuitive, as explicit, clear, and proactive communication and delineation of volunteer responsibilities and tasks should bring about clearer expectations and reduce confusion or ambiguity about what volunteers do.

Table 5, Model 6 indicates that a (perceived) lack of formalized management (i.e., whether a nursing home has a designated volunteer manager), a lack of guidelines on volunteer tasks, and the absence of joint activities are all associated with greater concern for the quality of service among professional staff.

[Insert Table 4]

[Insert Table 5]

Because the error terms of outcomes likely cross-correlate, as a robustness check we estimate all three models reported above simultaneously in a system of equations, using the seemingly unrelated

regressions estimator. The results mirror those presented in our main OLS regression models which offers some reassurance to the robustness of the reported correlations (results are to be inserted).

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Table 1. Overview of measures on VMPs

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*Formalized management*

Is there at your workplace appointed one or more people who are (main)responsible for coordination the collaboration with volunteers?

Scale: Yes, no, don't know

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*Program Design*

Is there at your workplace clear agreements/guidelines for which tasks volunteers can solve?

Is there at your workplace clear agreements/guidelines for how volunteers should solve their tasks?

Scale: Yes, no, don't know

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*Recruitment and selection*

How often are talks/interviews conducted with new volunteers were they, for instance, are asked about their competences and interest?

Scale: never, rarely, sometime, often, always

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*Volunteer development*

How often do new volunteers receive an introduction to the workplace (e.g., introduction to rules, the organization, and relevant employees)?

How often do new volunteers get an introduction to the tasks they should assist with?

How often do new volunteers participate in courses (e.g., courses in dementia, first-aid or the like)?

Scale: never, rarely, sometimes, often, and always

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*Communication and coordination*

Have you and your colleagues within the last month received information about volunteers at your workplace? It can be via meetings, newsletters, emails, or an information board or the like. Please mark all the information, you have received.

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Scale: yes, we have received information om which activities volunteers do with the residents; yes, ..which volunteers are present at the workplace; yes, ..when the volunteers are present; yes, ..which tasks volunteers are supposed to solve; no, we have not received these different kind of information; don't recall

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*Relations management*

Have the following activities involving both employees and volunteers taken place at your work place the last 6 months? Please mark all those activities which have taken place.

Scale: yes, there have been shared meetings between volunteers and employees; yes, ..social gathering involving volunteers and employees, but no residents; yes, volunteers and employees have jointly arranged activities for the residents; no, none of the abovementioned activities have taken place; don't know/do not recall

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Table 2. Overview of measures of dependent variables

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*Role ambiguity*

How much do you agree or disagree with following statements:

- The objective of volunteers' work is clear for me
- I understand fully what the responsibilities of volunteers are
- I know exactly which tasks I can expect volunteers to solve

Scale: completely agree, agree, neither agree nor disagree, disagree, completely disagree, and don't know

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*Threat to service quality*

How much do you agree or disagree with following statements:

- I fear that citizens in the future will receive worse care because their needs increasingly will be covered by volunteers
- I am concerned that the use of volunteers means that citizens do not receive the care they are entitled to
- The use of volunteers makes it difficult to provide citizens with a coherent care

Scale: completely agree, agree, neither agree nor disagree, disagree, completely disagree, and don't know.

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*Quality of volunteer-staff collaboration*

How well-functioning is the collaboration between yourself, your colleagues, and volunteers on your workplace?

Scale: Very bad, bad, neither bad or good, good, very good, don't know/don't recall

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Table 3. Association btw. VMPs and volunteer-staff collaboration<sup>1</sup>. OLS regression.

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Formalized management (ref. = yes)</i>						
No	-0.050 (0.098)					0.027 (0.099)
Don't know	-0.086 (0.084)					-0.035 (0.085)
<i>Guidelines, volunteer tasks (ref. = yes)</i>						
No		-0.245* (0.121)				-0.212 (0.146)
Don't know		-0.123 (0.075)				-0.040 (0.097)
<i>Guidelines, volunteer performance (ref. = yes)</i>						
No			-0.084 (0.097)			0.096 (0.118)
Don't know			-0.104 (0.072)			-0.038 (0.093)
<i>Received information (ref. = yes)</i>						
No				-0.239*** (0.072)		-0.160* (0.075)
Don't recall				0.006 (0.092)		0.044 (0.095)
<i>Joint activities (ref. = yes)</i>						
No					-0.331*** (0.077)	-0.266** (0.081)
Don't recall/don't know					-0.079 (0.082)	-0.058 (0.084)
Constant	4.030*** (0.463)	4.125*** (0.463)	4.067*** (0.464)	4.202*** (0.462)	4.210*** (0.457)	4.354*** (0.461)
Observations	543	543	543	543	543	543
Adjusted R <sup>2</sup>	0.081	0.089	0.083	0.103	0.113	0.118

Note: \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10. Standard errors in parentheses. Control variables are included in all columns (see variables listed in Table A1). <sup>1</sup> High (low) value corresponds to good (bad) collaboration.

Table 4. Association btw. VMPs and role ambiguity<sup>1</sup>. OLS regression.

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Formalized management</i> (ref. = yes)						
No	0.279 (0.361)					0.463 (0.348)
Don't know	-0.401 (0.289)					0.001 (0.280)
<i>Guidelines, volunteer tasks</i> (ref. = yes)						
No		-2.367*** (0.392)				-2.448*** (0.478)
Don't know		-1.245*** (0.256)				-0.785* (0.317)
<i>Guidelines, volunteer performance</i> (ref. = yes)						
No			-1.173*** (0.321)			-0.035 (0.385)
Don't know			-1.076*** (0.250)			-0.414 (0.302)
<i>Received information</i> (ref. = yes)						
No				-1.082*** (0.243)		-0.867*** (0.248)
Don't recall				-0.993** (0.318)		-0.964** (0.318)
<i>Joint activities</i> (ref. = yes)						
No					-0.585* (0.266)	-0.056 (0.265)
Don't recall/don't know					-0.407 (0.287)	-0.081 (0.281)
Constant	2.435 (1.683)	3.676* (1.608)	3.189+ (1.651)	3.621* (1.666)	2.739 (1.683)	4.574** (1.600)
Observations	484	484	484	484	484	484
Adjusted R <sup>2</sup>	0.107	0.192	0.146	0.142	0.111	0.218

Note: \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10. Standard errors in parentheses. Control variables are included in all columns (see variables listed in Table A1). <sup>1</sup> High (low) value corresponds to low (high) role ambiguity.

Table 5. Association btw. VMPs and threat to service quality<sup>1</sup>. OLS regression.

	(1)	(2)	(3)	(4)	(5)	(6)
<i>Formalized management</i>						
<i>(ref. = yes)</i>						
No	1.241*					1.067*
	(0.529)					(0.529)
Don't know	-0.193					-0.564
	(0.419)					(0.426)
<i>Guidelines, volunteer tasks</i>						
<i>(ref. = yes)</i>						
No		1.888**				2.202**
		(0.631)				(0.746)
Don't know		1.006*				1.667**
		(0.397)				(0.505)
<i>Guidelines, volunteer performance</i>						
<i>(ref. = yes)</i>						
No			0.490			-0.843
			(0.516)			(0.607)
Don't know			0.029			-0.969*
			(0.378)			(0.475)
<i>Received information</i>						
<i>(ref. = yes)</i>						
No				0.828*		0.501
				(0.380)		(0.392)
Don't recall				0.371		0.230
				(0.478)		(0.486)
<i>Joint activities</i>						
<i>(ref. = yes)</i>						
No					1.190**	0.848*
					(0.404)	(0.420)
Don't recall/don't know					0.889*	0.922*
					(0.420)	(0.429)
Constant	3.477	2.577	3.528	3.112	2.767	1.656
	(2.532)	(2.530)	(2.560)	(2.550)	(2.540)	(2.513)
Observations	469	469	469	469	469	469
Adjusted R <sup>2</sup>	0.094	0.107	0.083	0.091	0.100	0.135

Note: \*\*\* p<0.001, \*\* p<0.01, \* p<0.05, + p<0.10. Standard errors in parentheses. Control variables are included in all columns (see variables listed in Table A1). <sup>1</sup> High (low) value corresponds to high (low) concern about service quality.

## Appendix

Table A1. Descriptive statistics of VMPs

	Mean	Standard deviation
<i>Formalized management</i>		
People responsible for coordination		
Yes	0.58	0.49
No	0.13	0.34
Don't know	0.28	0.45
<i>Program Design</i>		
Guidelines, volunteer tasks		
Yes	0.62	0.49
No	0.07	0.26
Don't know	0.31	0.46
Guidelines, volunteer performance		
Yes	0.44	0.50
No	0.13	0.34
Don't know	0.43	0.50
<i>Recruitment and selection</i>		
Interview, new volunteers		
Never	0.05	0.21
Rarely	0.04	0.20
Sometimes	0.06	0.23
Often	0.05	0.22
Always	0.05	0.22
Don't know	0.75	0.43
<i>Volunteer development</i>		
Introduction to workplace		
Never	0.04	0.19
Rarely	0.03	0.17
Sometimes	0.04	0.20
Often	0.06	0.24
Always	0.19	0.39
Don't know	0.64	0.48
Introduction to work tasks		
Never	0.03	0.16
Rarely	0.02	0.14
Sometimes	0.04	0.20
Often	0.06	0.24
Always	0.24	0.42
Don't know	0.61	0.49
Courses, new volunteers		
Never	0.18	0.39
Rarely	0.05	0.22

Sometimes	0.03	0.18
Often	0.02	0.13
Always	0.01	0.11
Don't know	0.71	0.46
<i>Communication and coordination</i>		
Received information <sup>1</sup>		
Yes	0.39	0.49
No	0.40	0.49
Don't recall	0.21	0.41
<i>Relations management</i>		
Joint activities <sup>1</sup>		
Yes	0.40	0.49
No	0.29	0.46
Don't recall/don't know	0.31	0.46

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Note: N=615. Note: <sup>1</sup> If the respondents answers 'yes' to one or more categories it is coded as 'yes'.

Table 2A. Descriptive statistics of dependent variables

	Mean	SD	N
Role ambiguity (index 0-10) <sup>2</sup>	8.01	2.47	484
Threat to service quality (index 0-10) <sup>1</sup>	4.01	3.59	469
Collaboration with volunteers (index 1-5) <sup>1</sup>	4.33	0.75	543

Note: <sup>1</sup> High value corresponds to good collaboration/high concern about service quality. <sup>2</sup> High value corresponds to low role ambiguity. Respondents who answer don't know/don't recall are coded as missing.

Table A3. Descriptive statistics of control variables

	Mean	SD
Education (health assistant, longer education) <sup>1</sup>	0.63	0.48
Gender (female) <sup>1</sup>	0.95	0.21
Age, years <sup>1</sup>	54.35	8.80
Work experience (< 5 years) <sup>2</sup>	0.33	0.47
Shift (day shift) <sup>2</sup>	0.52	0.50
Region (Zealand) <sup>1</sup>	0.29	0.45
Number of volunteers <sup>2/a</sup>		
1-5 volunteers	0.38	0.49
6-10 volunteers	0.22	0.41
11-15 volunteers	0.11	0.31
16-20 volunteers	0.05	0.21
21-25 volunteers	0.02	0.15
26-30 volunteers	0.01	0.11
31-35 volunteers	0.01	0.08
36-40 volunteers	0.00	0.06
>40 volunteers	0.02	0.14
Don't recall/don't know	0.18	0.39
Former employees are volunteers (yes) <sup>2/b</sup>	0.25	0.44
Contact with volunteers the last month <sup>2/c</sup>		
Everyday	0.04	0.20
3-4 times a week	0.11	0.32
1-2 times a week	0.28	0.45
2 times a month	0.13	0.33
Once a month	0.11	0.31
No contact	0.27	0.44
Don't recall/don't know	0.06	0.23
Employees are present when volunteers perform tasks <sup>2/d</sup>		
Never	0.01	0.08
Rarely	0.02	0.13
Sometimes	0.11	0.31
Often	0.22	0.41
Always	0.51	0.50
Don't know	0.14	0.35

Note: N=615. <sup>1</sup> This data were provided by FOA. <sup>2</sup> Respondents were asked about this information in the survey. Questions: <sup>a</sup> How many volunteers are there at your workplace? <sup>b</sup> How did your workplace found the volunteers who perform volunteer work? (answer: it is previous employees who are now volunteers). <sup>c</sup> How often within the last month have you been in contact with volunteers at your workplace? <sup>d</sup> To what extent are employees present, which volunteers can ask for advice, when they solve tasks?