

Factors related to work and life satisfaction of veterinary practitioners in Germany

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ABSTRACT

Objectives Veterinary practitioners' working situation is both challenging and changing. They have higher levels of work-related stress and suicide risk than the general population. The proportion of women is increasing, and in Germany especially women and employed veterinarians are reported to be less satisfied than comparable subgroups of the general population. In this study we identified key factors associated with work and life satisfaction among veterinary practitioners in Germany.

Design Questionnaire-based cross-sectional survey.

Setting All veterinary practitioners registered in Germany in 2016.

Participants There were 2549 respondents, of whom 1930 met the inclusion criteria for further analysis. They had a median age of 37 and the majority of respondents were women (79.3 per cent). Almost two-thirds (63.8 per cent) worked as employed veterinarian.

Primary outcomes Importance of different job characteristics measured in 5-point Likert items, work satisfaction measured on a 5-point Likert item and life satisfaction measured in 11-point Likert items.

Secondary outcomes Facets such as satisfaction with leisure time, family life, health and standard of living, information on working conditions such as working time, income, as well as year of birth and other demographic data.

Results A 'good working atmosphere' was the most relevant job characteristic for all veterinary practitioners. Work satisfaction of employed practitioners is closely linked to satisfaction with their colleagues. This link is less pronounced for self-employed practitioners. A 'reasonable salary' was the second and 'holidays and leisure time' was the third most important job characteristics for employed practitioners. A 'good working atmosphere' and 'family friendly arrangements' were statistically significantly more important for women than for men, while a 'reasonable salary' was more important for men.

Conclusions Our results indicate strong associations between levels of work satisfaction and various work-related factors in subgroups of veterinary practitioners in Germany that reduce life satisfaction. The strength of some associations differs between men and women, as well as between self-employed and employed veterinarians. Outgoing students should be better prepared for the challenging working conditions that they face in veterinary practice. Salary levels should be improved and the working conditions adapted to the respective subgroups in order to increase work and life satisfaction.

INTRODUCTION

A high work satisfaction is a desirable aim for both employers and employees since work satisfaction is a predictor for performance, especially in professional jobs.¹ Low work satisfaction results in withdrawal behaviours like absenteeism, resulting in a high turnover rate. The financial impact that employee attitudes have on organisations is measurable.¹ If not addressed properly, organisations might cause a spillover of employees' low work satisfaction into their life satisfaction and wellbeing.¹

There is a shortage of younger colleagues in some areas of the veterinary profession in Germany,^{2,3} and approximately 12 per cent of all certified veterinarians are not working at all or not in the veterinary field (retired veterinarians excluded).⁴ Poor remuneration is one of the main reasons for leaving veterinary practice and the profession in Australia.⁵ Particularly working time and income exert a huge influence on work satisfaction^{6,7} and may contribute to the observed shortage. In Germany employed practitioners and female veterinarians were reported to be less satisfied with their work than comparable subgroups (with same working positions and similar educational stage) of the general population.⁷

A higher risk for work-related stress, burnout, mental health disorder and suicide within the profession has been reported from various countries.⁸⁻¹³ Possible reasons for mental health disorders in the veterinary profession were the characteristics of individuals entering the profession, the negative effects during undergraduate training, work-related stressors and stigma associated with mental illness, as well as professional and social isolation.^{9,14} Less favourable working condition are associated with anxiety and depressive symptoms.¹⁵ Thus, working conditions should be adapted to current needs and expectations of employees as in other medical professions.¹⁶



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The reports of stress and burnout in veterinary students and young veterinarians in the first five years after graduation^{10 14 17} should be evaluated against the background of a changing profession: Younger generations and especially Generation Y's (born between 1981 and 2000) attitudes towards work are different from those of earlier born generations. More recent generations expect a better work–life balance and freedom work values.^{16 18} In addition, a substantial demographic change can be observed in the veterinary profession in various countries. In Germany, within this historically male dominated group, 86 per cent of university graduates and 62 per cent of veterinary practitioners are now female.⁴ This feminisation of the veterinary profession is also reported from the UK,¹⁹ the USA,²⁰ Canada²¹ and Turkey.²² At the same time, young female veterinarians feel more easily exhausted and less engaged than young male veterinarians, and were less satisfied than their male colleagues.^{7 11}

Factors associated with and consequences of dissatisfaction in veterinary practice are diverse. In contrast to earlier studies of suicide, stress and burnout in veterinary profession, in our study we focused on positive psychology in terms of satisfaction. The objectives were to identify the associations between work satisfaction and life satisfaction of veterinary practitioners in Germany, to rank them by strength of association and to make recommendations on this basis.

MATERIALS AND METHODS

Data were collected using a questionnaire that was developed by an interdisciplinary team¹ of researchers. Groups of related questions proposed and validated in another study²³ were used to assess overall work satisfaction and facets such as satisfaction with the supervisor, colleagues, income and professional development. Each work-related facet was assessed by five statements in 5-point Likert items. Participants specified the degree of agreement or disagreement (1 strongly disagree, 2 disagree, 3 undecided, 4 agree, 5 strongly agree). The arithmetic mean of the five statements was calculated for each facet and participant and was used for the structural equation models (SEMs). In addition, the questionnaire explored overall life satisfaction,²⁴ as well as facets such as satisfaction with leisure time, family life, health and standard of living. Practitioners were asked to indicate the respective satisfaction in 11-point Likert items (0 very dissatisfied to 10 very satisfied), and the perceived importance of different job characteristics in 5-point Likert items. The questionnaire also included a section on working conditions such as working time, income, as well as year of birth and other demographic

information. The questionnaire was pretested by the expert group as well as by 24 veterinary practitioners and was finalised based on their input. In the online version, the help functionality was used to provide clarifying explanations to potentially difficult questions in order to reduce misclassification bias.

Veterinarians working in clinical practice (small practices, veterinary private hospitals and veterinary university hospitals) in Germany were invited to complete the questionnaire between January 2016 and March 2016. Twelve state veterinary associations (17 state veterinary associations exist in total) distributed the survey by mailing lists of their practising members (5984 emails). The survey was advertised in five German veterinary journals, including the official journal of the profession ('Deutsches Tierärzteblatt'), presented at two larger veterinary conventions, and placed on social media networks including Facebook. Most participants (96 per cent; n=2436) completed an online version within the open-source tool LimeSurvey (www.limesurvey.org), while the others used the hard-copy version (4 per cent; n=113). Only responses where at least the first half (sections on work satisfaction and on demographic information) of the questionnaire had been completed were included in the analysis. In addition, veterinarians not working in clinical practice (eg, working for the Government Veterinary Services, in a laboratory or doing research) were excluded. The plausibility of other information was tested in a data audit, and records with non-plausible data on working time (n=60), salary (n=38) and year of birth (n=18) were excluded. In cases of missing answers (item non-response), these records were dropped from those statistical analyses where the items were required. Missing data imputation was not performed. Further details of the approach have been described in Kersebohm and others,⁷ and a copy of the questionnaire (in German) is available on request from the corresponding author.

Statistical analysis

Data were transferred from LimeSurvey and the hard-copy questionnaires to Microsoft Excel and subsequently analysed in IBM SPSS V.23 (Statistical Package for Social Sciences) for exploration and description. Quantitative data (eg, working hours per week, pretax annual income, results of importance of job characteristics and work and life satisfaction) were assessed graphically and by Kolmogorov-Smirnov tests for normality. Non-normally distributed variables and scores were described using medians. The association between gender and continuous variables (importance of job characteristics, percentage of own income to the complete household income) was analysed using a Mann-Whitney U test. The level of significance was set to P<0.05. Arithmetic means of the scores were used to rank the different job characteristics in every subgroup (female employed practitioners (FEP), male employed practitioners (MEP), female self-employed practitioners (FSEP), male self-employed practitioners (MSEP)) and to compare these rankings with

¹The team consisted of a veterinary epidemiologist (MGD), a work and organisational psychologist (TL), a veterinary consultant (AB), a managing director of a veterinary association (Dr Roger Battenfeld) and interested representatives of the veterinary university department of the Freie Universität Berlin (Dr Carolin Deiner, Nadine Schunter).



Friedrich (2007).²⁵ The lavaan package from the software R (www.lavaan.ugent.be)²⁶ was used to develop and run SEMs in order to analyse the interaction and association between the dependent variables (work satisfaction, life satisfaction) and the independent variables (satisfaction with the supervisor, satisfaction with income, satisfaction with colleagues, satisfaction with professional development, satisfaction with working time, satisfaction with family life, satisfaction with leisure time, satisfaction with standard of living, satisfaction with health). The hypothesised relations were defined on the basis of those survey components available from the study. SEM conjoins the methodology of path analysis and multiple regression, and uses basic correlation analysis, regression models and confirmatory factor analysis. Four SEMs were constructed: (1) FEP, (2) MEP, (3) FSEP and (4) MSEP. In the SEM, latent and observed variables were completely standardised (β) and the regression coefficients were standardised. The theoretically relevant variables were placed in the model according to subcategories in our questionnaire (eg, life and work satisfaction). Afterwards the models were adapted corresponding to observed correlations between variables. Model fit was estimated with a comparative fit index close to 0.95, a Tucker-Lewis index of greater than 0.90, a standardised root mean square residual of less than 0.08 and a root mean square error of approximation of close to 0.06.²⁷ The level of statistical significance was set to $P < 0.05$ for all SEMs.

RESULTS

Participants

Of the 2549 questionnaires that were returned, 619 were either classified as incomplete (not even the first half completed) or did not meet predefined inclusion or validity criteria. These were excluded from the study, resulting in 1930 participants and a response rate of 9 per cent of all veterinarians working in clinical practice in Germany.⁴ Participants had a median age of 37, the majority of respondents were female (79.3 per cent), and almost two-thirds (63.8 per cent) worked as employed veterinarians. Participants treated small animals (54 per cent), large and small animals (24 per cent), farm animals (11 per cent) or horses (11 per

cent). Female employed veterinarians had the lowest annual income, while male self-employed veterinarians had the longest working hours (table 1). Female practitioners working full time (≥ 40 working hours per week) had significantly lower contribution of own income to the complete household income (remuneration, yields on assets and immovable property of all household members) (FEP 65 per cent, $n=589$; FSEP 65 per cent, $n=216$) than full-time working male practitioners (MEP 80 per cent, $n=112$; MSEP 85 per cent, $n=157$; Mann-Whitney U test, $P < 0.001$).

Work and life satisfaction

The work satisfaction in MEP, FSEP and MSEP was mostly associated with the satisfaction with the income (figures 2, 3 and 4). Only in FEP the work satisfaction was mostly associated with satisfaction with the supervisor (figure 1). Satisfaction with the supervisor and satisfaction with the colleagues were moderately correlated in FEP ($\beta=0.262$) and MEP ($\beta=0.327$). The satisfaction with colleagues was more associated with work satisfaction for FEP ($\beta=0.559$) and MEP ($\beta=0.565$) compared with FSEP ($\beta=0.389$) and MSEP ($\beta=0.491$). Work satisfaction was less associated with the satisfaction with professional development in FEP than in other groups. The satisfaction with working time was associated with work and life satisfaction in all groups, and in FSEP and MSEP the association with life satisfaction is much higher than the association with work satisfaction.

Life satisfaction was mostly associated with family life satisfaction in FEP and MSEP; in MEP and FSEP life satisfaction was most associated with leisure time satisfaction (figures 1–4). The satisfaction with health was more associated with life satisfaction in FSEP and MSEP than in the two other groups. Life satisfaction and work satisfaction were more correlated in MEP ($\beta=0.605$) and MSEP ($\beta=0.711$) than in FEP ($\beta=0.485$) and FSEP ($\beta=0.539$). Based on their responses, 35.5 per cent of employed veterinarians would not choose their profession again (table 1).

Importance of job characteristics

The means for job characteristics showed differences between employed practitioners and self-employed practitioners; nevertheless, a ‘good working atmosphere’ was

TABLE 1 Participants, respective number of responses (N) and their job characteristics in a survey of work and life satisfaction in four subgroups of veterinary practitioners in Germany (2016): female employed practitioners (FEP), male employed practitioners (MEP), female self-employed practitioners (FSEP) and male self-employed practitioners (MSEP)

	FEP		MEP		FSEP		MSEP	
	N	Result	N	Result	N	Result	N	Result
Age (median years)	1079	33	143	33	398	48	236	53
Pretax annual income (median €)	964	30,000	130	38,700	299	45,000	192	80,000
Working hours per week (median hours)	973	45	133	50	328	45	198	55
I would not choose my current place of employment again (%)	1084	27.6	146	30.8	403	14.6	240	16.3
I would not choose this profession again (%)	1084	35.2	146	37.7	403	22.3	240	31.3

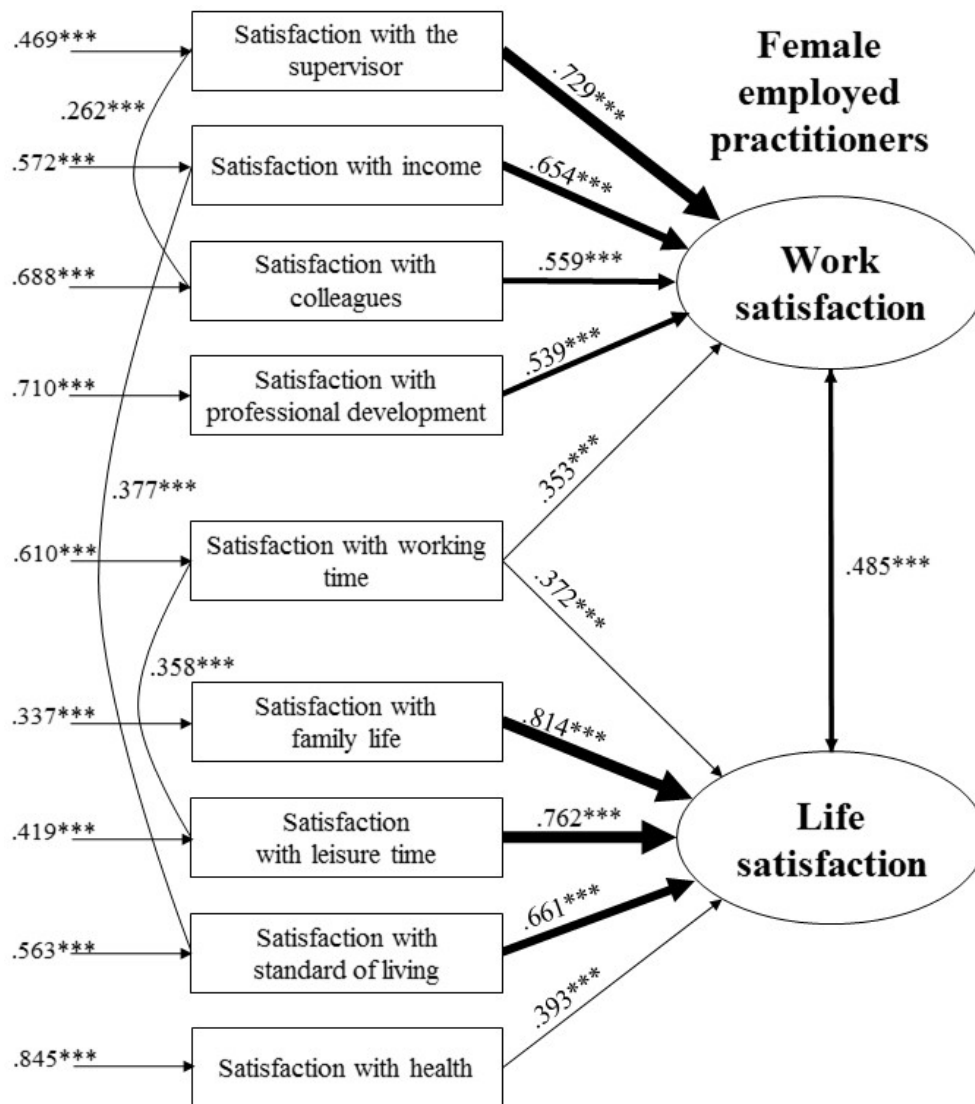


Figure 1 Structure equation model of female employed practitioners relationships between components of work satisfaction and components of life satisfaction in a survey of work and life satisfaction in veterinary practitioners in Germany (2016). Values indicate standardised coefficients: * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$. Used numbers of observations=978, CFI=0.963, TLI=0.939, RMSEA=0.068, 95% CI RMSEA 0.057–0.079, SRMR=0.039. CFI, comparative fit index; RMSEA, root mean square error of approximation; SRMR, standardised root mean square residual; TLI, Tucker-Lewis index.

the most important job characteristic, with the smallest sd for all four groups (tables 2A and B).

For both groups of employed practitioners, a 'reasonable salary' was the second and 'holidays and leisure time' was the third most important job characteristics (table 2A). For FEP the 'good working atmosphere' and the 'family friendly arrangements' were statistically significantly more important than for MEP ($P < 0.05$). On the other hand, a 'reasonable salary' was statistically significantly more important for MEP than for FEP ($P < 0.001$).

For both groups of self-employed veterinarians, the 'independent work' was the second and the 'diversified occupation' was the third most important job characteristics (table 2B). For FSEP the 'good working atmosphere', the 'professional development' and the 'family friendly arrangements' were statistically significantly more important than for MSEP ($P < 0.05$). On the

other hand, a 'reasonable salary' was statistically significantly more important for MSEP compared with FSEP ($p = 0.016$).

DISCUSSION

Our study focused on veterinarians working in clinical practice in Germany. However, we have reasons to believe that the results can be transferred to other countries with generally similar working conditions in which an ongoing feminisation and higher risks of work-related stress, burnout, mental health disorder as well as suicide have been reported.^{4 8–13 19–22} Our results need to be interpreted with caution as survey participation was voluntary, and it theoretically was possible for non-practitioners to participate. In addition, multiple participation, social desirability bias, huge dissatisfaction as responding

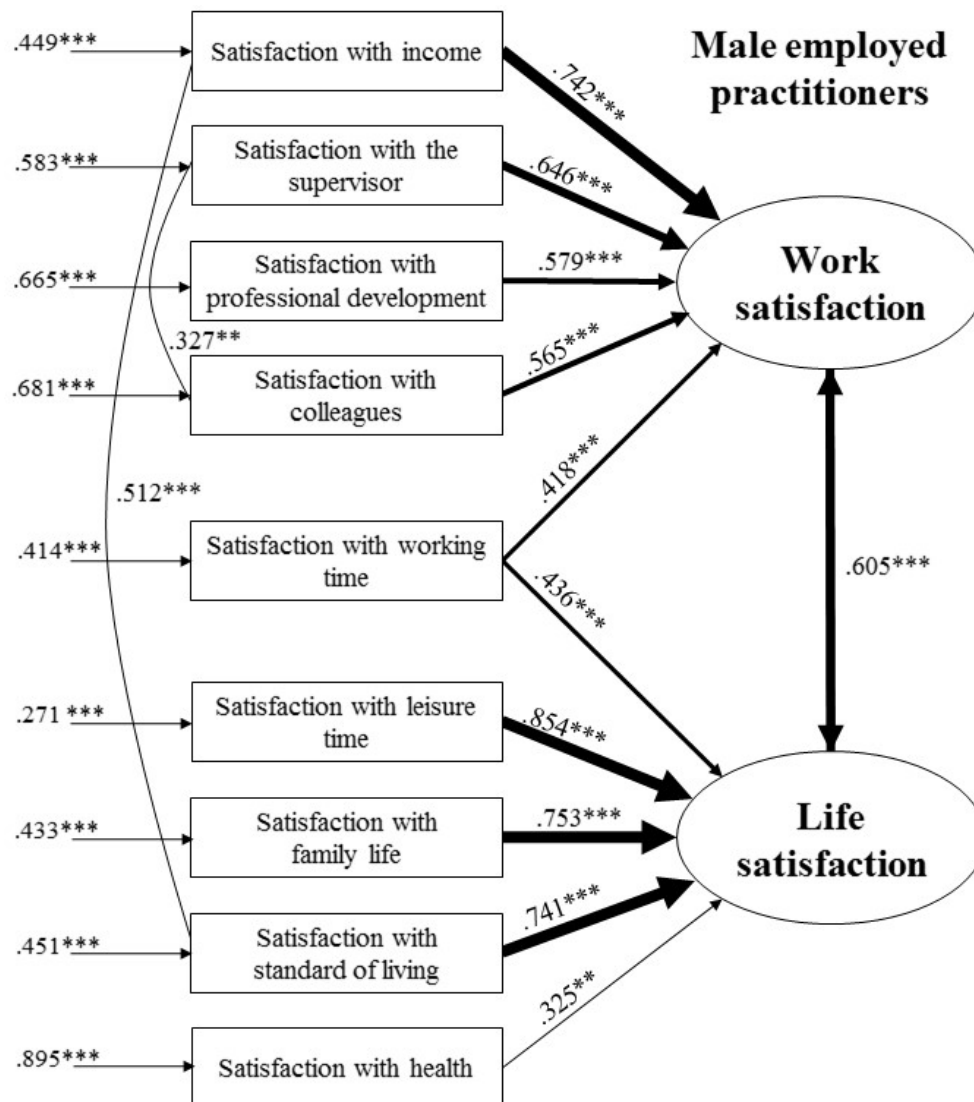


Figure 2 Structure equation model of male employed practitioners relationships between components of work satisfaction and components of life satisfaction in a survey of work and life satisfaction in veterinary practitioners in Germany (2016). Values indicate standardised coefficients: * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$. Used numbers of observations=138, CFI=0.971, TLI=0.953, RMSEA=0.065, 95% CI RMSEA 0.019–0.103, SRMR=0.050. CFI, comparative fit index; RMSEA, root mean square error of approximation; SRMR, standardised root mean square residual; TLI, Tucker-Lewis index.

motivation as well as the presence of incorrect answers could not be excluded with certainty. We nevertheless consider conclusions drawn from our results as generally valid due to careful data audit, the large number of participants and the good demographical coverage.

Veterinary practitioners' life satisfaction and work satisfaction were influencing each other in this study (figures 1–4). Veterinarians were less satisfied with their work than the comparable subgroup of the general population in Germany and were less satisfied with several other facets of their life.⁷ These results underline the importance of a high work satisfaction in veterinary practice, which in turn could improve organisational effectiveness and reduce withdrawal behaviours like turnover and absenteeism.¹

Our results confirmed that income exerts a substantial influence on veterinarians' work satisfaction.^{6,7} Employed

practitioners and female veterinarians earned less than their self-employed male colleagues. These subgroups also were less satisfied with their work.⁷ Kahneman and Deaton²⁸ described that emotional wellbeing rises with income, but there is no further increase beyond an annual income of ~\$ 75,000. Based on our survey, the majority of employed practitioners and FSEPs in Germany earn less than this annual income, indicating that there is potential to improve their work satisfaction by improving their income. The statutory German veterinary medical fee schedule was not changed since 2008.²⁹ Our results suggest for a revision of this legislation as well as for an increase of the fees charged individually within each practice in order to make them economically sound (cost-covering). Within this context, veterinary schools should teach economic subjects and prepare students for being entrepreneurs.³⁰ Kondrup and others³¹ reported

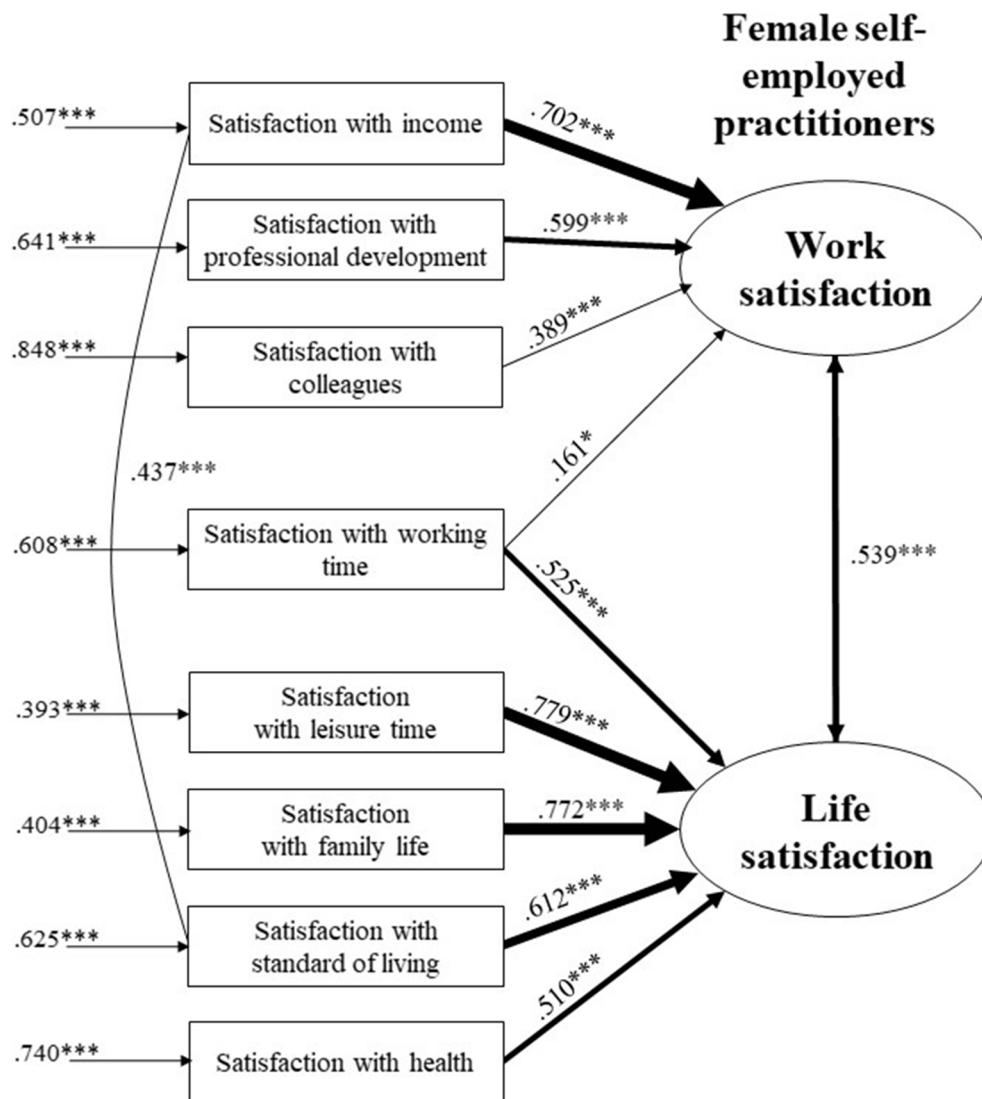


Figure 3 Structure equation model of female self-employed practitioners relationships between components of work satisfaction and components of life satisfaction in a survey of work and life satisfaction in veterinary practitioners in Germany (2016). Values indicate standardised coefficients: * $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$. Used numbers of observations=305, CFI=0.968, TLI=0.944, RMSEA=0.061, 95% CI RMSEA 0.035–0.087, SRMR=0.040. CFI, comparative fit index; RMSEA, root mean square error of approximation; SRMR, standardised root mean square residual; TLI, Tucker-Lewis index.

major economic and psychological challenges in Danish small animal practitioners by handling financially limited clients. A higher uptake of companion animal health insurance as in Sweden, or a higher level of support from charities as in the UK,³¹ may improve practitioners' situation.

The satisfaction with the income influenced female work satisfaction less than male work satisfaction, even though men earned more than women. In addition, for male veterinarians the job characteristic 'reasonable salary' was statistically significantly more important than for female veterinarians. These results agree with observations that female veterinary students in Germany choose the veterinary profession because it is their 'dream job', with less consideration of financial and societal prospects.³² There is a gender pay gap in society; however, in our study self-employed male practitioners in comparison to self-employed female practitioners earned more

than to be expected from the society common differences.⁷ A possible interpretation for the higher gender pay gap in self-employed practitioners is that men either have a higher motivation towards a higher income or are required to earn substantially more than women. This interpretation agrees with the result that the percentage of own income to the complete household income was higher in men than in women. Heath³³ suggested that expected low income may contribute to the low number of men entering the profession, and in Australia poor remuneration was found to be one of the main reasons for leaving veterinary practice and the profession.⁵ To prevent a shortage of young veterinarians, a higher remuneration could be considered. In addition, female participants considered family-friendly arrangements to be more important than male practitioners did. The fact that in general women do more unpaid work (childcare, routine housework, care for adults) than men (Miranda

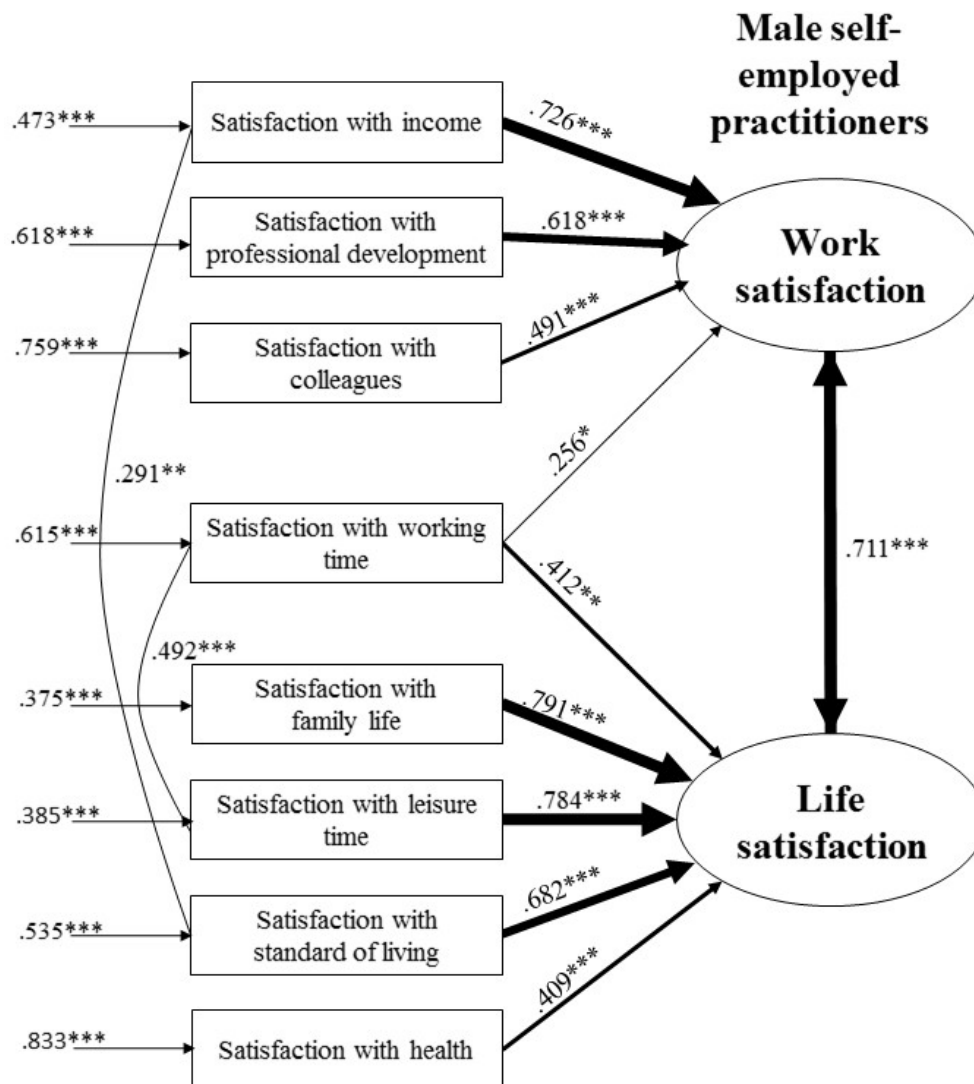


Figure 4 Structure equation model of male self-employed practitioners relationships between components of work satisfaction and components of life satisfaction in a survey of work and life satisfaction in veterinary practitioners in Germany (2016). Values indicate standardised coefficients: *P<0.05, **P<0.01, ***P<0.001. Used numbers of observations=191, CFI=0.944, TLI=0.902, RMSEA=0.082, 95% CI RMSEA 0.048–0.115, SRMR=0.047. CFI, comparative fit index; RMSEA, root mean square error of approximation; SRMR, standardised root mean square residual; TLI, Tucker-Lewis index.

TABLE 2A Importance of job characteristics for employed practitioners and differences between women and men in a survey of work and life satisfaction in veterinary practitioners in Germany (2016)

	Female employed practitioners					Male employed practitioners					Significance*
	R	N	X	±s	Median	R	N	X	±s	Median	
Good working atmosphere	1	1084	4.79	0.44	5	1	146	4.68	0.54	5	0.011
Reasonable salary	2	1084	4.26	0.64	4	2	146	4.45	0.62	5	<0.001
Holidays and leisure time	3	1083	4.25	0.69	4	3	146	4.27	0.73	4	0.632
Professional development	4	1084	4.24	0.73	4	4	146	4.18	0.78	4	0.521
Independent work	5	1084	4.12	0.77	4	4	146	4.18	0.83	4	0.250
Attractive working time	6	1084	4.09	0.76	4	7	146	4.09	0.77	4	0.926
Diversified occupation	7	1083	4.05	0.77	4	6	146	4.12	0.80	4	0.293
Family-friendly arrangements	8	1083	3.78	1.11	4	8	146	3.46	1.19	4	0.002

*Significances were tested by Mann-Whitney U test; importance was defined as 1=very unimportant to 5=very important. ±s, sd; R, rank; X, mean scores.

TABLE 2B Importance of job characteristics for self-employed practitioners and differences between women and men in a survey of work and life satisfaction in veterinary practitioners in Germany (2016)

	Female self-employed practitioners					Male self-employed practitioners					Significance*
	R	N	X	±s	Median	R	N	X	±s	Median	
Good working atmosphere	1	403	4.73	0.49	5	1	240	4.63	0.53	5	0.012
Independent work	2	403	4.52	0.63	5	2	239	4.52	0.59	5	0.898
Diversified occupation	3	403	4.35	0.72	4	3	239	4.29	0.70	4	0.176
Reasonable salary	4	403	4.17	0.64	4	4	240	4.28	0.63	4	0.016
Professional development	5	403	4.03	0.80	4	6	240	3.89	0.81	4	0.034
Holidays and leisure time	6	403	3.98	0.81	4	5	240	3.96	0.84	4	0.988
Attractive working time	7	403	3.84	0.83	4	7	240	3.87	0.83	4	0.610
Family-friendly arrangements	8	402	3.59	1.17	4	8	240	3.36	1.14	4	0.009

*Significances were tested by Mann-Whitney U test; importance was defined as 1=very unimportant to 5=very important. ±s, sd; R, rank; X, mean scores.

2011³⁴) could be one reason for this finding. Reducing the difference between men and women in spending time with unpaid work could improve female practitioners' situation and close the gender pay gap.

A 'good working atmosphere' was the most important job characteristic for all groups of veterinary practitioners. The job characteristic 'good working atmosphere' was statistically significantly more important for women than for men, and FEPs' work satisfaction was highly influenced by their satisfaction with supervisor and colleagues. These results agree with the finding of Moore and others³⁵ that individual work satisfaction and burnout were significantly influenced by the veterinary team, and in concordance with Bartram and others¹⁵ that strong drivers for satisfaction are good relationships with the veterinary colleagues. Furthermore, Kustritz and Nault³⁶ reported that success as a practising veterinarian depends on good communication skills and other 'soft' skills that can lead to higher employee and employer satisfaction and increase practice revenue. Against the background of the feminising profession^{4 19} and the female veterinarians' dissatisfaction with work,⁷ these results underline the importance of the social network, interpersonal skills and supervisors' competence in the veterinary profession. Within practice, veterinary supervisors should make an effort to improve the working atmosphere, communication, team work and their own leadership abilities. Within education, the integration of leadership, communication and coping skills in the curricula of veterinary schools could improve the situation.^{10 30 37}

The third most important job characteristic for employed practitioners was 'holidays and leisure time', which underlines the demand of Generation Y for a better work-life balance.¹⁶ Our results confirmed the influence of working hours on veterinarians' work satisfaction.^{6 7} Moreover, the working time satisfaction was the only work-related satisfaction that directly influenced practitioners' life satisfaction (figures 1–4). Longer working hours of veterinary practitioners compared with

relevant subgroups (with same working positions and similar educational stage) of the general population⁷ and compared with European veterinary colleagues³⁸ could be a reason. Long working hours have physical and mental health consequences: Extended and irregular hours are associated with acute reactions such as stress and fatigue, adverse health behaviour such as smoking, and chronic outcomes such as cardiovascular and musculoskeletal disorders.³⁹ In addition, working long hours is a risk factor for the development of depressive and anxious symptoms in women.⁴⁰ These results suggest that the reduction of working hours and a better work-life balance could improve the situation and satisfaction of veterinary practitioners.

Employed practitioners were younger than self-employed veterinarians and by the majority belong to Generation Y. Members of Generation Y are diverse, technologically advanced and vocal about their opinions.⁴¹ They tend to resist traditional hierarchy, want recognition or reward for achievements, and distrust institutions.⁴¹ Generation Y places more importance on status, intrinsic (through the process of work, eg, intellectual stimulation, challenge) and freedom work values than other generations. Whenever individual and organisational values show poor fit, work satisfaction and organisational commitment are reduced.¹⁸ In this study, a higher percentage of employed practitioners than self-employed practitioners would not choose their employment place and profession again. This is in concordance with the finding that specifically the employed practitioners were less satisfied with their work and life when compared with the relevant subgroup of the general population.⁷ The lower decision latitude (personal control of their own working situation) of employed practitioners could be an additional reason for these findings. Persons who experience job strain, that is, a work situation with low decision latitude in combination with too high demands, develop more symptoms of depression over time than people who are not subjected to such exposure at work.⁴² As

a consequence, involving young veterinary employees into decisions of the workplace design could improve their work satisfaction.

The presented results together with prior findings suggest that the working conditions should be adapted to current needs and expectations of female veterinarians and employed practitioners: Fewer working hours, more income, a good working atmosphere, a good work–life balance and family-friendly arrangements are needed. The whole veterinary profession, both in education and practice, should cooperate to improve the situation. Applicants for veterinary university places need a realistic image of veterinary profession³²; hence, within education, an obligatory placement before entering a veterinary degree programme could demonstrate a realistic image of veterinary profession. To improve veterinarians' satisfaction and success and reduce veterinarians' stress, applicants could be selected by high emotional stability, confidence and resilience.^{14 36 43} In addition, universities should not only prepare students for veterinary medical work but also for being entrepreneurs and leaders. Within practice, a cost-covering increase of veterinary charges, a higher uptake of companion animal health insurance, good team work, a higher decision latitude and an improved communication and leadership could improve veterinary practitioners' work and life satisfaction. Further studies should investigate the progress of these results.

ETHICAL CONSIDERATIONS

In the survey, we explicitly stated that full anonymity was guaranteed, and that no one else but the first researcher had access to the raw data. We constructed the questionnaire as an interdisciplinary team as described in the Materials and Methods section. Ethical approval was not required for veterinary medical educational studies in Germany at the time the study was conducted. The authors confirm that legal and ethical requirements have been met.

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Contributors All authors substantially contributed to the conception and design of the study, as well as interpretation of results and revision of the article. JCK collected the data. Analysis and drafting of the manuscript were done by JCK and TL, supported by AB and MGD. All authors approved the final manuscript.

Competing interests None declared.

Provenance and peer review Not commissioned; externally peer reviewed.

Data sharing statement Questionnaire (in German) and additional data can be made available by the corresponding author on request.

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