Public Health Nurses' experience, involvement and attitude concerning mental health issues in school setting.

Øyfrid Larsen Moen, PHN, MHS, PhD
Faculty of Medicine and Health, Institute of Health sciences
Norwegian University of Science and Technology (NTNU), Norway
oeyfrid.moen@ntnu.no

Hege Skundberg-Kletthagen, MHN, MHS, PhD
Faculty of Medicine and Health, Institute of Health sciences
Norwegian University of Science and Technology (NTNU), Norway
Address: NTNU in Gjøvik
P.O box 191; N-2802 Gjøvik, Norway
hege.kletthagen@ntnu.no

Public Health Nurses' experience, involvement and attitude concerning mental health issues in school setting.

Abstract

The aim of the study was to describe and explore public health nurses' perceptions of involvement and their attitudes concerning the mental health aspects of their work in schools. Furthermore, we wish to explore their need for useful approaches and training topics.

The teenage years in particular are associated with an incidence of mental health problems such as depression. Public Health Nurses in schools have an extensive role in relation to health promotion and the prevention of both physical and mental health.

A cross-sectional study with 284 Public Health Nurses from 163 municipalities in Norway was performed, with the Depression Attitude Questionnaire (DAQ). The Public Health Nurses reported various degrees of confidence and time spent working with mental health issues. Confidence was found to be related to further education and courses.

Keywords: adolescents, child, DAQ, education, interventions, knowledge, mental health, professional confidence, Public Health Nurse, school nursing

Background

The last decade has seen an increasing focus on child and adolescent mental health worldwide [1]. The teenage years in particular are associated with a high incidence of mental health problems such as depression [2, 3]. According to the Youth Studies in Norway, which addresses mental health problems, the prevalence has increased since 2010 with 20 per cent of the child and adolescent population reporting more depression and anxiety [4]. A depression is often persistent and relapses may occur – a debut in adolescence may be linked to risk of further episodes in adulthood [5]. Mental health problems, such as depression and anxiety, are strongly related to behavioural problems as well as problems related to social relations and school achievements [3, 6, 7]. Several studies describe girls as more vulnerable to stress, having lower self-esteem, a higher state of depression and anxiety and a lower sense of coherence than boys [8-10]. Stress related to school performance is reported as strongly associated with depressive symptoms [2]. Studies show that pupils with emotional and mental health problems seek advice from friends and family and from professionals, such as teachers and public health nurses (PHNs) [7, 11].

In Norway, every municipality is obliged to have a school health service to take care of the health of school-aged children and young people stated in the Act of Public Health from 2012. PHNs are professionals working in the school health service located in schools, and are among the first community health professionals who help to reduce health inequalities in the youth population [12]. PHNs in Norway are authorized nurses with a one-year postgraduate education in public health nursing [13], who have a particular responsibility for children of all ages, as well as adolescents and families [14], in contrast to many other countries where PHNs provide services for the entire population [15]. They have an extensive role in relation to health promotion and prevention, and in detecting early signals of both physical and mental health problems [13]. A PHN is employed by the municipal community health service, and may have

responsibility for one or several schools, which varies between different municipalities. A PHN meets most of the pupils through the school health service, with delivery of immunization programmes and screenings, followed by individual and group activities with pupils. Many PHNs have an open-door policy for pupils [16]. The PHN will later in the article be described as school nurse to make the context more clear. The recommended norm per full-time school nurse position is 300 students in primary schools, 550 in lower secondary schools and 800 in upper secondary schools [17]. The norm is not fulfilled in all municipalities [17]. The community health service for young people includes school nurses, General Practitioners (GPs), mental health personnel and psychologists in some municipalities. The specialist health service has responsibility for the process of diagnostic assessment, treatment and follow-up. Regulations require a school nurse to have routines for cooperation with GPs, personnel in schools, pedagogic psychological services (PPS) and the psychiatric specialist health services [13].

The changing health-care system and new health challenges in the youth population may have changed the school nurse's role and professional identity [18]. Mental health problems are not a key subject in the school nurse's education [13]. In the curriculum, the main focus is on the children's physical and mental development and health. The focus is clear with regard to paediatrics but less focused in mental health disorders. This may possibly influence the quality of the school nurse's delivery of services to the child and youth population.

The aim of the study was to describe and explore school nurses' perceptions of involvement and their attitudes concerning the mental health aspects of their work in schools. Furthermore, we wish to explore their need for useful approaches and training topics.

Research objectives:

- Describe the school nurses' perceptions of and involvement in emotional and psychological problems in children and young people.
- Explore and compare the attitudes of school nurses who in addition have completed a degree in mental health nursing with those who have not.

Methods

Design and sample

A cross-sectional study was conducted using a Questback questionnaire sent by e-mail. Internet survey software package Questback was used. A random sample of 703 PHNs in schools from all regions in Norway was included, with the inclusion criteria being working as a school nurse in schools with children and adolescents in the age range from 11 to 18. The response rate was 40.39%, including 284 school nurses from 163 municipalities in Norway.

Data collection

Information about the study and a request for participants were sent to school nurse managers in municipalities in Norway by e-mail. The managers supplied the e-mail addresses of possible participants matching the inclusion criteria. An information letter was sent with the questionnaire with Questback to the sample of school nurses. Those who wished to participate responded to the questionnaire, and three reminders were sent over a period of three weeks. The data collection took place from January to February 2016.

Measures and instruments

The questionnaire in the Questback included questions regarding;

Background of the school nurses: age, gender, work experience as a school nurse, education as school nurse or not, a further degree in mental health nursing or not, courses in mental

health issues, size of the municipality, job extent, number of pupils at the school and time spent on pupils with emotional or psychological problems.

Ten items regarding *views of useful approaches and training topics* to assist mental health work were previously used and developed by Haddad and Butler [7]. The items were answered on a five-point response scale from 1 (not useful at all) to 5 (very useful). In addition, four questions were open-ended (to be reported elsewhere).

The *Depression Attitude Questionnaire* (DAQ) was developed by Botega and Mann [19] and further developed to apply to school nurses and their work with adolescents by Haddad and Butler [7]. The questionnaire is a 20-item self-report questionnaire to measure the PHN's attitudes to working with pupils with depression. The items were on a 10-point response scale with the anchors defined as 1 (strongly disagree) and 10 (strongly agree). Previous examinations [7] with an exploratory factor analysis of the DAQ indicated three factors: "Professional ease and confidence" (items 9, 12, 15), "Pessimistic attitude toward depression" (items 7, 8, 10, 11, 16) and "Tendency to refer to psychiatric experts" (items 17, 19, 20). In this study, the Cronbach's alpha for the entire scale was .698, and for the three factors they were: "Professional Ease and Confidence" .576, "Pessimistic attitude toward depression" .498 and "Tendency to refer to psychiatric experts" .548.

The questionnaire has not been previously used in Norway, while the translation process was inspired by the description of Yu and Lee [20] of back-translation. The instrument was translated from English to Norwegian by a bilingual expert in the topic and back-translated by another bilingual expert. A team of experts in mental health and public health nursing commented on the clarity of the instrument and further clarifications were made. The instrument was pilot tested with 10 nurses, and some formulations were clarified, thereby making them more understandable.

Data analysis

Statistical analyses were performed using IBM Statistics SPSS, version 22.0, and descriptive statistics with frequencies, percentages, means and standard deviations were used. Comparisons between groups were analyzed using independent sample t-tests, a one-way analysis of variance (ANOVA) and a Kruskal-Wallis test. Post-hoc tests, such as a Tukey's HSD and Mann-Whitney U test, were used to find out where the difference between the groups occurred. The internal consistency for the whole scale and for the factors was measured using Cronbach's alpha [21]. All tests were two-tailed with a p-value <.05.

Ethical approval

The study was approved by the Norwegian Social Science Data Services (NSD) (ref: 45366). Ethical research principles were followed during the entire research process [22].

Results

The study participants were 284 nurses working as school nurses in schools with children and adolescents aged 11 to 18. There was a response rate of 40.4%. All the participants were women. The majority were trained as school nurses, following a bachelor degree in nursing. However, 30.9% of the school nurses had a further degree in mental health nursing. Furthermore, 216 had participated in courses on mental health issues. Their school nurse work experience varied from 0 to 41 years, and the size of municipalities where they worked differed, reflecting the Norwegian country's municipality sizes (Table I).

Please insert Table I about here

Most of the school nurses spent more than 25% of their time dealing with pupils with emotional or psychological problems. The school nurses were asked questions concerning what they considered helpful in their work regarding mental health. They considered training sessions, supervision and support from the Child Mental Health Specialist Service as being most helpful. Regarding training topics, they valued brief psychological interventions and the assessment of psychological problems as most important (Table II).

Please insert Table II about here

To compare the group of school nurses with the group of school nurses with a degree in mental health nursing regarding their views of useful approaches, a student t-test was conducted. There was a significant statistical difference between the groups of PHNs regarding "training sessions for school nurses", with the group school nurses without a degree in mental health nursing (n=196) wanting more training sessions (M=4.85, SD=.63), than the group of school nurses with a degree in mental health nursing (n=88) (M=4.60, SD=.37, t=4.25, p=.001). There were also significant differences in "brief assessments of psychological problems" between the group of school nurses without a degree in mental health nursing, who found assessments more useful (M=4.60, SD=.67) than the group of school nurses with a degree in mental health nursing (M=4.41, SD=.72, t=2.10, p=.037). Furthermore, significant differences were also found when comparing those who had a degree in mental health nursing, who found it less necessary to have "training sessions for school nurses" (M=4.60, SD=.64) than school nurses having brief courses regarding mental health issues (M=4.86, SD=.37, t=3.35, p=001). Between these two groups, there was also a significant difference in "brief assessments of psychological problems", with those with a

degree in mental health nursing finding it less necessary (M=4.38, SD=.73) compared to those having brief courses in mental health issues (M=4.59, SD=67, *t*=2.34, *p*=.02).

The one-way ANOVA test was used to explore the differences in work experiences and revealed significant differences between those with less work experience as a school nurse (0-2 years) (M=4.77, SD=0.71) compared with the group having the most work experience (21-41 years) (M=3.35, SD=0.70, F=2.45, *p*=0.047). Those with less work experience reported the need for more brief assessments, brief interventions and training sessions.

There were no significant differences in the school nurses' views on useful approaches and training topics with regard to the extent of their work at schools.

The DAQ was used to explore the school nurses' attitude towards depression. The responses are shown in Table III.

Please insert Table III about here

When comparing the group of school nurses with a degree in mental health nursing with the group of school nurses without this degree, we find significant differences in the factors described as "Professional ease and confidence". The group of school nurses with a degree in mental health nursing reported a higher degree of this factor (M=7.67, SD=1.22) than those without this degree (M=7.06, SD=1.42, *t*=3.40, *p*=0.001). The factor "Tendency to refer to psychiatric experts" showed that the group of school nurses with a degree in mental health nursing, demonstrated a significantly reduced tendency to refer pupils (M=7.14, SD=1.66) compared to the others (M=7.67, SD=1.58, *t*=2.52, *p*=0.012).

Those who participated in courses with regard to mental health issues reported more professional ease and confidence (M=7.39, SD=1.32) than those without these courses

(M=6.73, SD 1,53, *t*=3.34, *p*=0.001). There were no significant differences in the factor "Pessimistic attitude toward depression" when comparing the groups. There were no significant differences in job extent for the three factors. A Kruskal-Wallis test was conducted to explore the impact of time spent in helping pupils with psychological and emotional problems, which showed statistically significant differences in the factor "Professional ease and confidence" (Table IV).

Please insert Table IV about here

The school nurses who spent less than 25% of their time working with pupils' mental health issues felt less confident in helping pupils with psychological and emotional problems.

Discussion

The results in this study showed that most of the school nurses spent more than 25% of their time in dealing with pupils with mental health problems. This finding is also supported by Dahl and Clancy [18], who reported that school nurses had many experiences related to mental health work. Results from table III show that the school nurses felt that they played a useful role in supporting depressed pupils. The school nurses do not diagnose mental health problems, but instead make a nursing judgement related to mental health issues [23]. To be a supportive adult with a professional relation to adolescents with depression may be an important role for the school nurse. The school nurses have to depend on their clinical judgement as to whether they can handle such problems themselves before consulting and referring to a mental health specialist or involving the parents [23]. They also perceive working with adolescents with depression as hard work (see table III). Support and supervision from other school nurses may ease the burden working with these youths. The pupils often consult the school nurses with physical or psychosomatic issues such as a headache, stomachache or

other medical complaints that give the school nurses a gateway into the pupil's mental health issues [23, 24]. Most school pupils may have depressive thoughts related to the experience of being an ordinary young person who is not unhealthy but who nevertheless needs to speak to a professional. Others are in a stage of early development of mental health problems; these pupils may need referral to special mental health services. As part of their job responsibility, the school nurses must meet all young people, regardless of their mental or physical health. They do not necessarily need to have a further degree in mental health nursing, but they need to be able to cope with their work [25]. Only a small part of the curriculum for the one-year programme of further education as a school nurse is related to mental health problems. When comparing the group of school nurses with the group of school nurses with a degree in mental health nursing, those with a degree in mental health nursing as well as education as a school nurse, reported more professional ease and confidence, as well as a reduced tendency to refer to a mental health specialist. The curriculum in the school nurses' education programme in Norway may be questioned [25]. Has this changed to reflect the increase in mental health problems in adolescents and the central role school nurses have in supporting them? In addition, school nurses who spend more than 25% of their time in helping youths with emotional and psychological problems also felt a greater sense of professional ease and confidence. In this study, we have no information as to whether those spending less than 25% of their time gave this lower priority due to a lack of time, knowledge or interest in these topics.

Furthermore, the work experience of the school nurses in this study varied, with some having worked almost a decade, while others had recently graduated. Because many of the school nurses were educated several years ago, changing the education itself is not enough sufficient. Standardized training courses with a focus on brief psychological interventions and a brief assessment of psychological problems may be one solution, helping school nurses to

judge which pupils need referral to collaborative partners and who they can manage to help and support on their own [26]. On the other hand, too many interventions from the community health service are implemented before referral and the adolescents' problems become severe, as described by school nurses in a qualitative study [27]. The school nurses may need decision-making tools and standardized courses to make decisions that benefit young people with mental health problems.

Training sessions were ranked as most important for the entire group of school nurses, with brief psychological interventions and a brief assessment of psychological problems as most important for the training sessions. The focus of school nurses is to prevent sickness and promote health [28]. School nurses use a variety of different evidence-based interventions, e.g. Dahl and Clancy [18] describe one communication technique influenced by sense of coherence [29], which motivates one to cope, understand a challenge and believe in available coping resources. Clausson and Berg [24] used family intervention sessions to improve schoolchildren's mental health. Garmy and Jakobsson [30], evaluated a universal school-based programme employing cognitive-behavioral strategies. There is no standard intervention or school programme available, while the health authorities have no specific intervention for all PHNs to follow. This may lead to inequality in health provision depending on the municipality or which school nurse young people consult. More standardized interventions and brief assessments are needed in the school nurse's work.

In this study, supervision was reported as the second most important in approach and training topics for the school nurses, and may be a way to reflect and anonymously discuss cases in which they are involved. While under supervision, they can benefit from each other's experience: some have a further education in mental health nursing and long work experience while others have shorter work experience but more recent education as a school nurse. Dahl and Clancy [18] found that school nurses described themselves as being generalists, "knowing a

little about a lot." In developing clinical judgement and awareness, the school nurses' tacit knowledge must come to clarity [31, 32]. Supervision may be one answer to how to strengthen the school nurses and highlight tacit knowledge [27]. In supervision, the school nurses may also support each other in difficult cases involving young people with mental health problems. Furthermore, this study shows a wide range in work experience as a school nurse, so that experience and knowledge exchange can play a major role in supervision.

Increased support from the Child Mental Health Specialist Service was ranked as the third most important topic in this study. Clancy and Gressnes [33] found in their study that mental health professionals in the primary health service were the professions that were most missed in the school nurses collaboration with municipalities. Some of the answers to the 20 questions regarding attitudes to depression confirm that the school nurses may not be professionally confident in dealing with adolescents with depression. A decision-making tool may help the school nurses to be more systematic in their work and make it easier to describe young people's problems in the encounter with the specialist health service [26]. Clancy and Gressnes [33] found that to achieve a successful collaboration, relational factors such as trust, respect and collaborative competence are important. In addition, trust was ranked high, demonstrating that relational factors are more important than political directives or organizational structures.

These findings highlight the focus on school nurses' experiences, involvement and attitudes when working with youths with mental health problems. The Norwegian policy requires school nurses to work on both the group and individual level with youths and their families [34]. School nurses work conditions regarding job extent, school size and availability for the pupils vary in Norway. Perhaps this service is under-communicated. There is a shared but false notion that all mental health interventions are complex and can only be delivered by specialized personnel [35].

Strengths and limitations

This study has both strengths and limitations. In spite of three reminders, the response rate in the study was only 40.4 %. The generalizability must therefore be interpreted with caution, although a low response rate is common in many online research studies [36]. This may reflect that those with an interest in the topic are the ones who answer these kinds of studies. School nurses managers in municipalities recruited school nurses for the study, and there were clear inclusion criteria that strengthened the study. The school nurses who participated were from different municipalities in Norway, representing both the big cities and the more rural municipalities, thereby reflecting the school nurses in a Norwegian context.

The instrument is well-known and used in different samples and tested for validity and reliability [7]. The Cronbach's alpha coefficient for the DAQ was .698, thus showing a good stability [37]. Regarding construct validity, the Norwegian version should be further tested psychometrically due to possible cultural differences [38]. The translation process was rigorous, the instrument was tested for face and content validity by a panel of researchers, and no revisions were made.

Conclusion and recommendations for further research

Overall, the school nurses reported a need for training sessions, supervision and more support from the Child Mental Health Specialist Service. Those with further education and courses in mental health nursing reported more confidence in their work. School nurses spending less than 25% of their time in dealing with mental health issues in youths reported being less confident. There are large geographical disparities concerning the school nurses' role in a Norwegian context. In the future, the curriculum in the Norwegian education programme for school nurses may be changed to meet the increase in mental health problems among young

people. Furthermore, to secure the quality of the service, a national knowledge platform among school nurses is needed and must be developed in respect of mental health issues. The extent of coverage and the utilization of the school health service could be keyed to adolescents' mental health. Further research is needed to explore and describe the school nurses' experiences, knowledge and attitudes when working with youths and young people with mental health problems, in addition to developing evidence-based interventions the school nurses can use in their daily work.

Author contributions

Study design: ØLM and HSK; data collection; ØLM and HSK; data analysis: ØLM, manuscript preparation: ØLM and HSK. Both authors have seen this last version and agreed upon it.

Acknowledgement

We would like to thank Nils Rui for valuable help concerning the

use of Questback.

Conflict of interests

The Authors declare that there is no conflict of interest.

References

1. Kieling C, Baker-Henningham H, Belfer M, et al. Child and adolescent mental health worldwide: evidence for action. *The Lancet*. 2011; 378: 1515-25.

2. Moksnes UK, Løhre A, Lillefjell M, Byrne DG and Haugan G. The association between school stress, life satisfaction and depressive symptoms in adolescents: Life satisfaction as a potential mediator. *Social Indicators Research*. 2016; 125: 339-57.

3. Nordfjærn T, Flemmen G and Dahl H. Psychosocial factors related to mental distress among Norwegian adolescents. *International Journal of Mental Health Promotion*. 2012; 14: 151-61.

4. Norwegian Institute for Public Health. The Youth Study In Hedmark. 2010.

5. Maughan B and Kim-Cohen J. Continuities between childhood and adult life. *The British Journal of Psychiatry*. 2005; 187: 301-03.

6. Bremberg S and Dalman C. A knowledge: Concepts, measurement methods and prevalence of mental health, mental illness and psychiatric disorders in children and adolescents. (En kunskapsöversikt: Begrepp, mätmetoder och förekomst av psykisk hälsa, psykisk ohälsa och psykiatriska tillstånd hos barn och unga). Stockholm: Forte, 2015.

7. Haddad M, Butler GS and Tylee A. School nurses' involvement, attitudes and training needs for mental health work: a UK-wide cross-sectional study. *Journal of Advanced Nursing*. 2010; 66: 2471-80.

8. Moksnes UK and Espnes GA. Self-esteem and life satisfaction in adolescents—gender and age as potential moderators. *Quality of Life Research*. 2013; 22: 2921-28.

9. Moksnes UK, Espnes GA and Haugan G. Stress, sense of coherence and emotional symptoms in adolescents. *Psychology & health*. 2014; 29: 32-49.

10. Moksnes UK, Espnes GA and Lillefjell M. Sense of coherence and emotional health in adolescents. *Journal of Adolescence*. 2012; 35: 433-41.

11. Abebe DS, Frøyland LR, Bakken A and Von Soest T. Municipal-level differences in depressive symptoms among adolescents in Norway: Results from the cross-national Ungdata study. *Scandinavian Journal of Public Health*. 2015; 44: 47-54.

12. Edgecombe G and World Health Organization. Public health nursing: past and future: a review of the literature prepared by Gay Edgecombe. 2001.

13. Ministry of Health and Care Services. Municipalities Health Promotion and Prevention in Health Clinics and School Health Services. (Kommunenes helsefremmende og forebyggende arbeid i helsestasjons- og skolehelsetjenesten. Veileder til forskift av 3. april 2003 nr 450). Oslo2003, p. 1-68.

14. Norwegian Parliment. Law on Mulicipal Health Services and more (Health and Care Sevices Law) Lovdata, 2011.

15. Philibin CAN, Griffiths C, Byrne G, Horan P, Brady A-M and Begley C. The role of the public health nurse in a changing society. *Journal of Advanced Nursing*. 2010; 66: 743-52.

16. Glavin K, Helseth S and Kvarme LG. From thought to action: methods and ways of working in public health nursing service (Fra tanke til handling: metoder og arbeidsmåter i helsesøstertjenesten). Oslo: Akribe, 2007, p. 340 s. .

17. Norwegian Directory of Health. Mapping the FTEs in health clinics and school health. In: Health NDo, (ed.). 2016.

18. Dahl BM and Clancy A. Meanings of knowledge and identity in public health nursing in a time of transition: interpretations of public health nurses' narratives. *Scandinavian journal of caring sciences*. 2015; 29: 679-87.

19. Botega N, Mann A, Blizard R and Wilkinson G. General practitioners and depression-first use of the depression attitude questionnaire. *Int J Methods Psychiatr Res*. 1992; 2: 169-80.

20. Yu DSF, Lee DTF and Woo J. Issues and Challenges of Instrument Translation. *Western Journal of Nursing Research*. 2004; 26: 307 - 20.

21. Field A. *Discovering statistics using IBM SPSS statistics: and sex and drugs and rock 'n' roll*. Los Angeles: SAGE, 2013, p.915.

22. Northern Nurses' Federation. Ethical guidelines for nursing research in the Nordic countries. *Nordic Journal of Nursing Research*. 2003; 23: 1 - 10.

23. Puskar KR and Bernardo LM. Mental Health and Academic Achievement: Role of School Nurses. *Journal for Specialists in Pediatric Nursing*. 2007; 12: 215-23.

24. Clausson E and Berg A. Family Intervention Sessions One Useful Way to Improve Schoolchildren's Mental Health. *Journal of family nursing*. 2008; 14: 289-313.

25. Dahl BM, Andrews T and Clancy A. Contradictory discourses of health promotion and disease prevention in the educational curriculum of Norwegian public health nursing: A critical discourse analysis. *Scandinavian Journal of Public Health*. 2014; 42: 32-37.

26. Moutsouri I, Nikou A, Pampalou M, et al. Clinical decision support system for the diagnosis of adolescence health. In: Vlamos P and Alexiou A, (eds.). *Advances in experimental medicine and biology*. Switzerland: Springer International Publishing, 2015, p. 125-62.

27. Moen ØL, Hedelin B and Hall-Lord ML. Public health nurses' conceptions of their role related to families with a child having Attention-deficit/hyperactivity disorder. *Scandinavian journal of caring sciences*. 2014; 28: 515-22.

28. Department of Health and Care Norway. Regulation of the Health promotion and Prevention in health clinics and school health I 2003, 52003.

29. Antonovsky A. *Unraveling the mystery of health: how people manage stress and stay well*. San Francisco: Jossey-Bass, 1987, p.218.

30. Garmy P, Jakobsson U, Carlsson KS, Berg A and Clausson EK. Evaluation of a School-Based Program Aimed at Preventing Depressive Symptoms in Adolescents. *The Journal of School Nursing*. 2015; 31: 117-25.

31. Clancy A and Svensson T. Perceptions of public health nursing consultations: Tacit understanding of the importance of relationships. *Primary Health Care Research & Development*. 2010; 11: 363-73.

32. Tveiten S and Severinsson E. Public health nurses' supervision of clients in Norway. *International Nursing Review*. 2005; 52: 210-18.

33. Clancy A, Gressnes T and Svensson T. Public health nursing and interprofessional collaboration in Norwegian municipalities: a questionnaire study. *Scandinavian journal of caring sciences*. 2013; 27: 659-68.

34. Department of Health and Care Norway. Health and care law. Lovdata2011.

35. World Health Organisation. Problem Management Plus (PM+),. Shekhar Saxena ed. 2016.

36. Fan W and Yan Z. Factors affecting response rates of the web survey: A systematic review. *Computers in Human Behavior*. 2010; 26: 132-39.

37. Streiner DL and Norman GR. *Health measurement scales: a practical guide to their development and use*. Oxford: Oxford University Press, 2008, p.431.

38. Polit DF and Beck CT. *Nursing research: generating and assessing evidence for nursing practice*. Philadelphia, Pa.: Wolters Kluwer Health, 2012, p.XIV, 802 s. : ill.

Table I, Background of the PHNs

n=284	%	Mean	SD	Range
Education as PHN				
Yes	94.4			
No	5.6			
Degree in Mental Health Nursing				
Yes	31			
No	69			
Work experience as PHN		10.72	8.28	0 – 41 years
Job extent		62.65	26.17	10 -100 %
Extent of time used with pupils having emotional or psychological problems				
<25%	7.7			
25-50%	30.4			
>50%	61.8			
Size of Municipalities (residents)				
<5000	16.1			
5000 - 9999	19.3			
10000-14999	9.1			
15000-19999	7.7			
20000-49999	21.4			
>50000	24.6			
How many pupils at the school		467.67	302.40	62 – 1800

Table II: PHN's priority of approaches and training topics to assist mental health work

	n=278 M (SD)
Training sessions (for PHNs)	4.78 (.48)
Supervision (for PHNs)	4.76 (.50)
More support from Child Mental Health specialist service	4.66 (.53)
Better details of local relevant resources	4.50 (.78)
Self-help material (for children and young people)	4.40 (.77)
Clinical guidelines	4.08 (.82)
Training topics	
Brief psychological interventions	4.69 (.56)
Brief assessment of psychological problems	4.54 (.56)
Managing self-harm	4.47 (.78)
Recognition of depression and anxiety disorders	4.35 (.89)
Assessing suicide risk	4.16 (.94)

Answered on a five-point response scale from 1 (not useful at all) to 5 (very useful).

Table III, PHNs attitude towards depression

	Mean	SD
1. During the last five years, I have seen an increase in the number of pupils presenting with depressive symptoms.	7.03	2.19
2. The majority of depression seen in schools originates from young peoples' recent misfortunes	6.48	1.89
3. Most depressive disorders seen in school improve without treatment	4.67	1.87
4. An underlying biochemical abnormality is at the basis of severe cases of depression.	3.81	1.59
5. It is difficult to differentiate whether pupils are presenting with unhappiness or a clinical depressive disorder that needs treatment.	5.60	2.21
6. It is possible to distinguish two main groups of depression: one psychological in origin and the other caused by biochemical mechanisms.	4.30	2.08
7. Becoming depressed is a way that young people with poor stamina deal with difficulties.	5.54	1.92
8. Depressed people are more likely to have experienced deprivation in early life than other people.	5.65	1.91
9. I feel comfortable in dealing with depressed pupils' needs.	5.35	2.17
10. Depression reflects a characteristic response, which is not amenable to change.	2.09	1.72
11. Becoming depressed is a natural part of adolescence.	3.36	2.20
12. The school nurse could be a useful person to support depressed pupils.	8.80	1.57
13. Working with depressed pupils is heavy going.	8.50	1.58
14. There is little to be offered to those young people with depression who do not respond to what GPs do.	4.28	2.78
15. It is rewarding to spend time looking after young people who are depressed.	7.56	1.85
16. Psychotherapy tends to be unsuccessful with young people who are depressed.	4.53	1.97
17. If young people with depression need antidepressants, they are better off with a psychiatrist than with a general practitioner.	7.20	2.36
18. Antidepressants usually produce a satisfactory result in the treatment of young people with depression.	3.91	1.58
19. Psychotherapy for young people with depression should be left to a specialist	7.18	2.43
20. If psychotherapy were freely available, this would be more beneficial than antidepressants, for most young people with depression	8.23	1.76

Table IV Comparing Factor 1 and time spent with pupils suffering from psychological and emotional problems

	Group A n=22	Group B n=83	Group C n=174	Kruskal – Wallis test		Mann Whitney U-test		
	Mean	Mean	Mean	X^2	p	A-B	A-C	B-C
Factor 1 Professional ease and confidence	6.03	7.27	7.37	10.27	P=.006	.02	.04	.60

Group A Less than 25% of their time
Group B Between 25 and 50 % of their time
Group C More than 50% of their time
Factor 1 "Professional ease and confidence" (items 9, 12, 15)
Answered on a 10-point response scale from 1 (strongly disagree) to 10 (strongly agree)