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Original research

Promoting maternal mental health in Ghana: An examination of the involvement and professional development needs of nurses and midwives

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ABSTRACT

Insight into the involvement and professional development needs (PDNs) of non-mental health nurses and midwives with respect to promoting maternal mental health is necessary to integrate mental health services into primary healthcare delivery. Using a cross-sectional survey and self-report methodology, the study investigates the involvement, PDNs, knowledge and attitudes of 309 nurses and midwives in promoting maternal mental health in Ghana. Data were analyzed using descriptive and inferential statistics, namely Analysis of Variance, bivariate and logistic regression, and cluster analysis. The results showed that the majority of the participants (94%) indicated they were involved in promoting maternal mental health. Knowledge about maternal mental health correlated significantly with involvement in promoting maternal mental health ($p < .05$), whereas attitude towards maternal mental health did not. An overwhelming proportion of the participants (83%–94%) expressed profound interest in professional development education across a range of maternal mental health areas. Enhancing the mental health knowledge-base of nurses and midwives could contribute significantly to promoting maternal mental health.

1. Introduction

Child bearing women, defined as women in the prenatal, perinatal and postnatal periods, have been reported to be at heightened risk of maternal mental health problems such as depression and anxiety. Globally, the prevalence of maternal mental health problems is estimated to range from 18% to 38% (Field, 2011). In low and middle income countries (LMICs), however, the prevalence rate is reportedly higher (i.e., ranging from 15% to 57%; Lund et al., 2014) owing to the high presence of risk factors of poor mental health such as poverty, unemployment, abuse, and poor organization and delivery of mental health services (Loch et al., 2017). Relating specifically to Ghana, a sub-Saharan African country, the prevalence of prenatal and postnatal depression is estimated at 10%–38% (Bindt et al., 2013; Weobong et al., 2014) and 4%–9% (Guo et al., 2013; Weobong et al., 2015), respectively, whereas prenatal-anxiety is estimated at 33% (Bindt et al., 2013).

Maternal mental health problems, given their robust associations with peripartum and postpartum complications, low birthweight, and stunted growth (Bindt et al., 2012; Sumankuuro et al., 2017; Wemakor and Mensah, 2016; Weobong et al., 2014, 2015), are among the factors responsible for maternal and child morbidity and mortality. Addressing maternal mental health issues could, therefore, contribute significantly towards reducing maternal and child morbidity and mortality. Consequently, the current study investigated the provision of mental health services by nurses and midwives to childbearing women in Ghana.

Nurses and midwives form the largest population of healthcare professionals who do not only maintain frequent contact with childbearing women but also closely monitor them. These professionals are highly skilled in developing relationships with childbearing women and their families, a privileged position that affords a unique opportunity to promote maternal mental health via, for instance, early screening and administering low-cost interventions (Rothera and Oates, 2011) in accordance with the task sharing framework (WHO, 2008). Task sharing basically involves the delivery of low-cost mental health interventions by non-specialist mental health workers with the aim of integrating mental healthcare into routine primary healthcare delivery system (WHO, 2008). Task sharing framework is particularly suitable to countries, including Ghana, that are constrained by finance and human resource factors in their quest to extend mental health services to

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different settings. For example, there were only 11 psychiatrists, 1068 psychiatric/mental health nurses, 19 clinical psychologists, 72 community mental health nurses, and 21 social workers, working in mental health institutions in Ghana in 2011 for a population of about 24 million people (Roberts et al., 2014). As it is unlikely that there would be adequate mental health professionals soon to render their services to those in need, it follows that nurses and midwives are important in the provision of basic population-based mental health services in Ghana.

Nurses and midwives have a role in promoting maternal mental health, globally. For example, childbearing women in general are less likely to access mental health services on their own volition for fear of being stigmatized, labeled and/or socially isolated (Redshaw and Henderson, 2016). This development has partly hampered the promotion of maternal mental health (Anding et al., 2015) and highlights the role of nurses and midwives in the delivery of mental health services by proactively inquiring about the mental wellbeing of childbearing women, as recommended by the National Institute for Health Care Excellence (2014) in the United Kingdom.

However, the involvement of nurses and midwives in promoting maternal mental health is yet to be granted the requisite research attention, particularly in LMICs, including Ghana, thereby limiting efforts to extend mental health services to childbearing women. The existing studies, mostly from high income countries have also focused overwhelmingly on midwives (Higgins et al., 2016; Noonan et al., 2018) with little attention to nurses, including general nurses, public/community health nurses, and enrolled nurses/nurse assistants who form an important part in the healthcare system in LMICs. In Ghana, for example, public/community health nurses are responsible for ensuring continuity of care in the communities by conducting home visits and follow-up with childbearing women. General nurses provide nursing care to childbearing women, including those on admission to hospital, healthcare facility/clinic and those accessing antenatal and postnatal services on outpatient basis. Enrolled nurses also contribute to the nursing care process by supporting and sometimes acting in the stead of midwives, general nurses, and public/community health nurses, especially in health facilities situated in the countryside. Therefore, the applications of previous studies in Ghana and other LMICs may be limited given the structural and functional differences in the training of health professionals, as well as in the organization and delivery of health services across jurisdictions.

Thus, although previous studies have suggested the need for continuous professional development programs to enhance the competency of health professionals to provide basic and low-cost mental health services (Bayrampour et al., 2018; Higgins et al., 2018), such programs can be tailored appropriately by understanding health professionals' perceptions of learning needs in their local setting (Hauck et al., 2015). There is, therefore, the need to critically examine local developments to provide insights into the local context and to proffer context-based recommendations in the bid to promote maternal mental health. Consequently, the study explicated the provision of mental health services to childbearing women in Ghana by nurses and midwives. The objectives of the study were to (1) examine the involvement of nurses and midwives in promoting maternal mental health; (2) investigate the predictors of involvement in promoting maternal mental health; (3) investigate the learning needs of nurses and midwives in relation to maternal mental health; and (4) categorize nurses and midwives based on their involvement in promoting maternal mental health and their knowledge of and attitudes towards maternal mental health.

2. Methods

2.1. Setting and participants

Data were collected from 309 nurses and midwives recruited from seven randomly selected health facilities in Greater Accra, the capital of Ghana. These include Pentecost hospital, Abokobi health center, and University of Ghana hospital. The inclusion criteria for participating in the study were: (1) registration with the appropriate licensing authority (i.e., Nursing and Midwifery Council), and (2) working with childbearing women in the perinatal and/postnatal periods for at least for 12 months to ensure that participants have had enough time to work with childbearing women, and so are in a position to promote their mental wellbeing. Registered mental health nurses were excluded from the study.

2.2. Research design and procedure

A cross-sectional self-report survey design was used to gather data from the participants after institutional permission was obtained from administrators of the various health facilities. The participants were recruited from antenatal and postnatal units using convenience and purposive sampling approaches. Nurses and midwives in Ghana are mostly assigned to work during morning (8am-2pm), afternoon (2pm–8pm) or night (8pm to 8am). The research team had no control or influence over the assignment of nurses and midwives into the various shift systems. However, to ensure a fair representation of the dynamics of nurses and midwives in the study and to reduce bias, effort was made to recruit participants from the various shift systems. At each facility, the research team briefly discussed the research project with the participants on duty for their interest. To minimize interference in nursing and midwifery practices, discussions relating to the study were held at the nurses and midwives work stations when they were less busy. The participants were approached individually, or as a team. The research team explained the purpose of the study to the nurses and midwives, including their roles and responsibilities as research participants. Ethical issues relating to research with human participants were explained and ensured. For example, in addition to voluntary participation, the questionnaires were devoid of name and other identifying information to maintain confidentiality and anonymity. Participants were given time to ask questions about the study to allay any fears they might have about their participation. Those who expressed interest to participate in the study were given a pack of questionnaires containing the measures described below after a written or verbal consent was obtained. The questionnaires were completed prior to the end of the shift of participants and handed over to the research team who mostly visit the facilities before a new shift commences. The study received ethical clearance from the Institutional Review Board of Noguchi Memorial Institute for Medical Research, University of Ghana (NMINR-IRB CPN 088/17–18).

2.3. Measures

Maternal Mental Health Involvement Scale (MMHIS) is a 7-item scale designed to assess participants' involvement in promoting maternal mental health. The items were derived from the existing literature (e.g., NICE, 2014) and in consultation with three experts in test construction and nine healthcare practitioners in Ghana, including nurses (n = 6) and midwives (n = 3). The 7-items are scored on a 4-point Likert-type scale, ranging from 1 (i.e., strongly disagree) to 4 (strongly agree). The scale was subjected to principal component analysis (PCA) to determine its underlying structure and appropriateness as a brief tool to assess healthcare practitioners' involvement in promoting maternal mental health. Preliminary results, based on the determinant of the correlation matrix (i.e., .119), Kaiser-Meyer-Olkin measure of sampling adequacy (.809) and Bartlett's test of sphericity ([χ^2 (21) = 648.94, $p < .001$)], suggest PCA was appropriate. Reconciling the eigenvalues and scree plot criteria, a decision was reached to retain one factor, which accounted for 46% of the variance. The items loaded satisfactorily on the one-factor MMHIS scale, with factor loadings ranging from .57 to .78. The item scores were added together to yield a total score, with higher scores indicating greater involvement in promoting maternal mental health. The average score recorded was 19.33 (SD = 4.42; Range:

7–28). A Cronbach's alpha of .80 reported in this study for the MMHIS was very high and acceptable.

Maternal Mental Health Knowledge was measured with 9 items obtained predominantly from Hauck et al. (2015) and others (Higgins et al., 2016; Noonan et al., 2018). The participants rated the items on the 5-point Likert scale, ranging from 1 (i.e., strongly disagree) to 5 (strongly agree). A total score was obtained by summing the responses to the various items, with higher scores indicating greater knowledge about maternal mental health. A Cronbach's alpha of .61 was recorded in this study.

Attitude towards Maternal Mental Health was measured using a 9-item scale developed from the existing literature on maternal mental health (Hauck et al., 2015; Higgins et al., 2016; Noonan et al., 2018) and other sources (Siu et al., 2012). The items were carefully selected to ensure face validity and appropriateness to the local context. Participants rated the 9 items on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The scale's total score ranged from 1 to 45, and was obtained by summing the responses to the various items. Higher score indicates higher attitudes toward maternal mental health knowledge about mental health. The internal consistency (Cronbach's alpha) of the scale was .70.

Maternal Mental Health Learning Needs was assessed using items derived from the existing literature (Hauck et al., 2015; Higgins et al., 2016) and in consultation with healthcare practitioners in Ghana, including nurses ($n = 6$) and midwives ($n = 3$) A total of 19 items (shown in Table 4) deemed useful in the local context were used in this study. The items are scored on a 4-point Likert-type scale, ranging from 1 (i.e., strongly disagree) to 4 (strongly agree). A total score was calculated by summing the participants' responses on the various items, with higher scores indicating more learning needs. The scale's internal consistency was .91.

Demographic variables: A section of the questionnaire was designed to gather demographic information of participants, including age, gender, professional category and qualification.

2.4. Data analytic strategy

All data were analyzed with SPSS Version 23 (IBM.corp). Cases with missing data represent less than 1% of the total cases and, because data were missing completely at random (Little's Chi-Square > .05), the expectation maximization algorithm was used to impute the missing data points. A two-tailed statistical significance was set at 0.05. A series of statistical analyses were performed. Mean differences were tested using ANOVA, whereas the relationship between categorical variables was examined using chi-square. Bivariate correlations between continuous variables were examined using Pearson correlation. Binary logistic and multiple linear regressions were used to examine the predictors of involvement in promoting maternal mental health as categorical dichotomous and continuous variables, respectively. For a better comprehension, the odd ratios produced from the binary logistic regression were converted to percentages using the formula (OR – 1 * 100%), where necessary. Lastly, cluster analysis, using the k-means procedure, was conducted to develop and understand cluster membership based on participant scores in involvement in promoting maternal mental health and knowledge of and, attitude towards maternal mental health.

3. Results

3.1. Study participants

Of the 320 questionnaires administered, 309 were returned, representing a response rate of 97%. The average age of the participants and their years of practice were 31 ($SD = 5.66$, Range; 21–50) and 5 ($SD = 3.80$, Range; 1–32), respectively. A large proportion were females (n = 296, 96%). Majority of the participants were public/community health nurses ($n = 138$, 45%), followed by midwives ($n = 83$, 27%), enrolled nurses ($n = 64$, 21%), and lastly general nurses ($n = 24$, 8%). With respect to qualification, more than half of the participants were Diploma holders ($n = 171$, 55%), followed by Certificate ($n = 116$, 38%), and lastly Degree ($n = 22$, 7%).

Table 1
Bivariate Correlations, Descriptive Statistics, and Cronbach's Alpha (α) of the Study Variables.

	Involvement	Knowledge	Attitude	Learning Needs
Involvement	1			
Knowledge	.21*	1		
Attitude	.08	.16*	1	
Learning Needs	.20*	.22*	.15*	1
M	19.33	35.50	23.43	62.05
SD	4.42	4.54	4.76	9.41
Range	7–29	12–45	8–39	19–78
α	.80	.61	.70	.91

* = p < 01.

3.2. Bivariate correlations between the study variables

Table 1 shows the bivariate correlations between the study variables which were measured as continuous variables. As can be seen, involvement in promoting maternal mental health correlated significantly and positively with knowledge about maternal mental health ($r = .21, p < .01$) and learning needs ($r = .20$, $p < .01$). Likewise, significant correlations were observed between learning needs and knowledge about maternal mental health ($r = .22$, $p < .01$) and attitudes toward maternal mental health ($r = .15$, $p < .01$). Attitudes toward and knowledge about maternal mental health were also related significantly ($r = .16, p < .01$).

3.3. Involvement in promoting maternal mental health

Data were recoded into dichotomous variable with 'Yes' formed by combining agree and strongly agree, and 'No' by combining disagree and strongly disagree responses. A summary of the participants' involvement in promoting maternal mental health is presented in Table 2. The result shows that majority of the participants indicated they were involved in promoting maternal mental health. For example, 70% ($n = 216$) stated that they have asked childbearing women about their experiences of mental health problems, whereas 72% ($n = 221$) indicated they have rendered some form of psychosocial interventions to these women. On the other hand, 59% ($n = 181$) indicated that they have not screened for mental health problems in childbearing women. Chi-square analysis revealed no significant relationship between the participants' qualification and involvement in promoting maternal mental health (all $ps \geq .05$). A similar result was obtained for the professional categories, except for the item relating to the item "Asked about distress from mental health issues". More specifically, the results showed that general nurses were significantly more likely to ask child bearing women whether they are distressed by mental health problems (χ^2 (2) = 9.04, $p = .011$).

3.4. Predictors of involvement in promoting maternal mental health

In the first of the series of analysis to determine the predictors of involvement in promoting maternal mental health, multiple linear regression was used, with the total score on the MMHIS as the outcome variable and age, gender, professional category, qualification, number of years of practice, knowledge of and attitude towards maternal mental health as the predictors. The categorical variables, namely professional category and qualification, were dummy coded, with enrolled nurse and certificate as the reference categories, respectively. The analysis was adjusted for facility type or place of work. The result shows that a

Table 2
Non-Mental Health Nurses and Midwives Involvement in Promoting Maternal Mental Health.

		Strongly disagree	Disagree	Agree	Strongly Agree	No	Yes
		n (%)	*n (%)*	*n (%)*	*n (%)*	*n (%)*	*n (%)*
1	Asked about mental health experiences	24(8)	69(22)	156(51)	60(19)	93(30)	216(70)
2	Asked about distress from mental health problems	27(9)	82(26.5)	153(49.5)	47(15)	109(35)	200(67)
3	Needs help with mental health problems	31(10)	106(34)	169(55)	3(1)	137(44)	172(56)
4	Screened for mental health problems	51(17)	130(42)	93(30)	35(11)	181(59)	128(41)
5	Detected mental health problems	23(7)	86(28)	149(48)	51(17)	109(35)	200(65)
6	Provided psychosocial interventions	18(5.8)	70(22.7)	156(50.5)	65(21)	88(28)	221(72)
7	Referred to specialists	33(11)	94(30)	115(37)	67(22)	127(41)	182(59)

Note: n = 309; No = Strongly disagree + Disagree; Yes = Strongly agree + Agree.

statistically significant model emerged (R^2 = .06, $F_{(4,\ 308)}$ = 4.39, p = .002). However, only knowledge about maternal mental health contributed significantly to the prediction ($b = t(300) = 3.59$, p = .001).

Subsequently, binary logistic regression analysis was conducted to predict yes/no group membership (see Table 2) using the predictors noted above. The binary logistic regression was adjusted for the various health facilities or place of work. The results show that, first, all models containing the predictors were statistically significant ($p < .05$). Second, the Hosmer and Lemeshow statistics revealed that all models were a good fit to the data ($p < .05$), with variance explained, based on Nagelkerke R^2 index, ranging from 10% to 18%. Third, an examination of the individual predictors shows that the most consistent predictor of group membership was knowledge about maternal mental health. Specifically, participants knowledge about maternal mental health significantly and positively predicted whether childbearing women were asked about their experiences with mental/emotional problems [χ^2 (1) = 5.38, p = .020; Exp(B) = 1.07; 95%CI: 1.011–1.139], whether they are distressed by mental problems [χ^2 (1) = 4.47, p = .035; Exp(B) = 1.06; 95%CI: 1.004–1.123], or need help with mental problems [χ^2 (1) = 6.72, p = .001; Exp(B) = 1.12; 95%CI: 1.022–1.121]. Relatedly, knowledge about maternal mental health significantly predicted whether nurses screened for mental health problems [χ^2 (1) = 5.58, p = .032; Exp(B) = 1.31; 95%CI:1.083–1.837], detected mental health problems [χ^2 (1) = 4.07, p = .044; Exp(B) = 1.06; 95%CI: 1.002–1.119], provided some form of psychosocial interventions [χ^2 (1) = 9.16, p = .002; Exp(B) = 1.10; 95%CI: 1.033–1.166], or referred childbearing women to specialist [χ^2 (1) = 5.28, p = .010; Exp (B) = 1.11; 95%CI: 1.048–1.367].

The qualification of the participants also significantly predicted their involvement in promoting maternal mental health, with the result suggesting that an increase in qualification from certificate to diploma [χ^2 (1) = 4.73, p = .030; Exp(B) = 3.87; 95%CI: 1.143–13.131] and degree [χ^2 (1) = 4.69, p = .030; Exp(B) = 3.55; 95%CI: 1.128–11.189] was associated with 287% and 255% increase in the provision of psychosocial interventions to childbearing women, respectively.

3.5. Learning needs to promote maternal mental health

Table 3 shows the learning needs of the participants. For simplicity, the responses were recoded into 'No' (formed by combining strongly disagree and disagree responses) and 'Yes' (formed by combining strongly agree and agree responses). The results show that the overwhelming majority of the participants indicated they wanted more education on diverse areas of maternal mental health, including bipolar disorders (94%, n = 290), somatoform disorders (93%, n = 289), schizophrenia and psychotic disorders (92%, n = 284), personality disorders (90%, n = 277), relationship building (83%, n = 261), therapeutic communication (83%, n = 255) and provision of low-cost psychosocial interventions (91%, n = 280). A series of chi-square analysis revealed that educational background, years of practice and category of nursing and midwifery profession did not significantly influence the learning needs of the participants (all $ps \geq .05$).

3.6. Cluster membership and profiles

The participants were clustered based on their scores in involvement in promoting maternal mental health, and knowledge of and attitude towards maternal mental health. The scores were converted to z-scores and analyzed using the K-means cluster procedure. Univariate ANOVAs revealed that the three cluster groups differ significantly on all the three variables (all $ps < .001$). Membership in cluster 1, 2 and 3 are distributed as 79 (26%), 122 (40%) and 108 (35%), respectively, with one-way multinomial chi-square test revealing that the frequencies are not distributed equally [χ^2 (2) = 9.340, p = .009). Specifically, the frequency for cluster 1 was significantly less than that of cluster 2 [χ^2 (1, n = 201) = 9.20, p = .002) and cluster 3 [χ^2 (1, n = 187) = 4.50, p = .034). The frequencies of clusters 2 and 3, however, did not differ significantly [χ^2 (1, n = 230) = .85, p = .356). The final clusters and their corresponding cluster scores, as well as cluster membership based on the background of the participants are shown in Table 4.

As can be seen, participants in cluster 1 appear to be highly involved in promoting maternal mental health, relatively knowledgeable in maternal mental health. They also have positive attitude toward maternal mental health. The participants in cluster 2 also appear to be relatively knowledgeable in maternal mental health but have poorer attitude towards maternal mental health. Lastly, the participants in cluster 3 are poorly involved in promoting maternal mental health. They also have poor knowledge of maternal mental health. Further analysis using univariate ANOVA revealed that the clusters do not differ significantly on maternal mental health learning needs ($F_{(2,\ 306)}$ = 1.42, p = .245). A significant association exists between cluster membership and qualification of the participants [χ^2 (4) = 16.01, p = .003); those with certificate are more likely to belong to cluster 3 ($z = 3.6$, $p < .001$) and less likely to be in cluster 2 ($z = -2.8$, $p \leq .01$). Those with diploma qualification are less likely to be part of cluster 3 ($z = -2.3$, $p \leq .05$). Lastly, degree/advanced qualification holders are also less likely to be in cluster 3 ($z = -2.20$, $p \leq .05$) but more likely to belong to cluster 2 ($z = 2.0$, $p \leq .05$). Cluster membership and profession category were significantly related [χ^2 (6) = 15.03, p = .020), with the result suggesting that midwives ($z = 2.00$, $p \leq .05$), general nurses ($z = 2.8$, $p \leq .01$) and enrolled nurses ($z = 2.2$, $p \leq .05$) are more likely to belong to cluster 1, 2 and 3, respectively.

4. Discussions

4.1. Involvement in promoting maternal mental health

A large proportion of participants indicated undertaking activities aimed at promoting maternal mental health, including those recommended by the NICE (2014). These include asking childbearing women whether they are experiencing mental health/emotional

Table 3
Non-Mental Health Nurses and Midwives Learning Needs in Promoting Maternal Mental Health.

		Strongly disagree	Disagree	Agree	Strongly Agree	No	Yes
		n (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)	*n* (%)
	I need education on						
1	Pregnancy and mental illness	6(2)	30(10)	170(55)	103(33)	36(12)	273(88)
2	Postnatal period and Mental illness	5(2)	31(10)	172(55)	101(33)	36(12)	273(88)
3	Consequences of mental illness in pregnancy	4(1)	27(9)	183(59)	95(31)	31(10)	278(90)
4	Consequences of mental illness in post-delivery	3(1)	25(8)	189(61)	92(30)	28(9)	281(91)
5	Depression in childbearing women	6(2)	31(10)	182(59)	90(29)	37(12)	272(88)
6	Bipolar disorders	3(1)	16(5)	191(62)	99(32)	19(6)	290(94)
7	Anxiety disorders	2(1)	35(11)	185(60)	87(28)	37(12)	272(88)
8	Schizophrenia and psychotic disorders	2(1)	23(7)	190(62)	94(30)	25(8)	284(92)
9	Substance misuse disorders	3(1)	22(7)	201(65)	83(27)	25(8)	284(92)
10	Somatoform disorders	2(1)	30(5)	204(66)	85(28)	20(7)	289(93)
11	Personality disorders	2(1)	30(10)	200(64)	77(25)	32(10)	277(90)
12	Assessment of mental health	5(2)	25(8)	185(60)	94(30)	30(10)	279(90)
13	Assessment of risk of mental health	2(1)	31(10)	197(64)	79(25)	33(11)	276(89)
14	Identification and diagnosis of mental disorders	4(1)	28(9)	176(57)	101(33)	32(10)	277(90)
15	Relationship building	10(3)	38(12)	182(59)	79(26)	48(15)	261(85)
16	Therapeutic communication	11(4)	43(14)	175(56)	80(26)	54(17)	255(83)
17	Provision of low-cost psychosocial interventions	5(2)	24(8)	194(62)	86(28)	29(9)	280(91)
18	Working with families	4(1)	36(12)	186(60)	83(27)	40(13)	269(87)
19	Handling stress and aggression	3(1)	24(8)	186(60)	96(31)	27(9)	282(91)

problems and whether they are bothered and/or need help with mental health/emotional problems. The above notwithstanding, the observation that 28–59% of participants stated that they had not engaged in some maternal mental health promoting activities appears to validate the claim that mental health services are yet to be fully integrated into maternal health services at the primary healthcare settings (Hauck et al., 2015; Higgins et al., 2018; Madden et al., 2018; Noonan et al., 2018). The analysis further revealed that the qualification of the participants (with the exception those with university degree) and their professional category (with the exception of general nurses), in general, showed insignificant influence on their involvement in promoting maternal mental health. As discussed subsequently, there are local and contextual factors such as the content of the training curriculum that can be invoked to account for this observation.

4.2. Knowledge of maternal mental health and participants' learning needs

Knowledge about maternal mental health emerged as the most significant and consistent predictor of involvement in maternal mental health. More broadly, participants with high knowledge about maternal mental health were more likely to undertake activities to promote maternal mental health. Indeed, it is impossible or pragmatically difficult to offer appropriate help when one does not have knowledge about the help needed. Consistent with previous studies (Hauck et al., 2015; Noonan et al., 2018), the participants in the current study have identified a need for professional development to increase their knowledge base and competencies in maternal mental health. These learning needs largely reflect the nature and content of the curriculum used in training nurses and midwives in Ghana. Because maternal mental health issues could be mistaken for signs of pregnancy and/or delivery, researchers have recommended specialized training to build capacity to deal with these issues (McCauley-Elsom, Cross and Kulkarni, 2009). However, the curriculum used to train midwives and nurses in Ghana does not make provision for the acquisition of population-specific mental health knowledge and competencies, including those for childbearing women. Among the areas participants expressed a need for education and capacity building pertains to the consequences of mental illness in pregnancy and post-delivery. This sensitive area deserve attention since the consequences of mental illness in childbearing women are far-reaching for women, their offspring, families and sometimes the entire nation, as noted previously (Sumankuuro et al., 2017; Weobong et al., 2014, 2015).

Consistent with previous studies (Hauck et al., 2015), the participants also indicated that they need professional development education in disorders that do not necessarily form part of the mental health parlance of the average Ghanaian and so are not frequently and routinely discussed in Ghana. These disorders are bipolar, personality, schizophrenia and psychotic, and somatoform disorders (Adjorlolo, 2016). The interest in education for personality disorders warrants attention given that they commonly co-exist with other mental disorders (Hauck et al., 2015). This is also true for schizophrenia and psychotic disorders that do not only affect childbearing women in the prenatal period, but also following delivery, the so-called puerperal psychosis. Other salient learning need areas relates to relationship building and therapeutic communication. Building a better relationship and communicating therapeutically with childbearing women would invariably help to build trust and confidence in the professionals which, in turn, would facilitate disclosure and promote discussions that is pertinent to, for instance, screening and identifying maternal mental health issues.

The participants' qualification and category of profession showed little influence on their learning needs. For example, membership in the various clusters did not significantly influence learning needs,

Table 4
Cluster Membership of the Participants.

	Cluster variables			Nurse/Midwive Profession Category				Qualification		
	Involvement	Knowledge	Attitude	Midwife n (%)	GN n (%)	PHN n (%)	EN n (%)	Certificate n (%)	Diploma n (%)	Degree n (%)
Cluster 1	.91	.60	.91	28(35)	2(3)	35(44)	14(18)	50(63)	23(29)	6(8)
Cluster 2	-.14	.52	-.50	30(25)	16(13)	56(46)	20(16)	72(59)	37(30)	13(11)
Cluster 2	-.50	−1.02	-.10	25(23)	6(6)	47(43)	30(28)	81(75)	24(22)	3(3)

GN = General nurse; PHN = Public health nurse; EN = Enrolled nurse.

suggesting that members in the various categories require almost the same or similar amount of education on maternal mental health needs. This again highlights the inadequacies in the existing training and continuous professional development programs while at the same time reiterating the importance of maternal mental health education for the various categories of nurses and midwives working with childbearing women.

4.3. Limitations of the study

The findings of the study should be evaluated in light of the following limitations. The relatively small sample size and the use of non-probability sampling limit the application of the findings beyond the participants of the study. Similarly, there is the likelihood of the occurrence of social desirability responses due to the supposed sensitive nature of the topic investigated: mental health problems and childbearing women. The data collection measures have not been validated with established construct and factorial validity and therefore pose another limitation to the study. Notwithstanding the above, the findings reported here do not differ in any systematic way from previous studies that have examined the maternal mental health learning needs among practicing midwives (Hauck et al., 2015; Noonan et al., 2018) and student midwives (McGookin et al., 2017).

4.4. Implications and conclusion

The participants' knowledge about maternal mental health significantly and consistently predicted the likelihood of involvement in promoting maternal mental health. Therefore, by increasing the knowledge-base of participants, there is a high likelihood that they will be involved in promoting maternal mental health. The participants, although feeling ill-equipped, demonstrated a strong desire for information and education across several salient maternal mental health topics. The recognition of their knowledge gap in relation to maternal mental health raises the possibility that participants would readily embrace and participate actively in training programs developed around their learning needs. The findings reported here thus calls for a new approach that will ensure that non-mental health professionals contribute significantly to promoting maternal mental health. It is strongly recommended that stakeholders take steps to develop training and capacity building programs in maternal mental health as part of nurses and midwives training curriculum and/or continuous professional development. A module, consisting of the various learning needs of nurses and midwives, should be should be developed to guide competency development and knowledge acquisition in maternal mental health. Further studies are equally important to important to identify gaps in research pertaining to pertaining to maternal mental health, including possible barriers to promoting maternal mental health, and how telemedicine and e-health can overcome the geographical barriers in promoting maternal mental health.

Conflicts of interest

None of the authors has conflict of interest to declare.

Ethical approval

Approved Institutional Review Board of Noguchi Memorial Institute for Medical Research, University of Ghana (NMINR-IRB CPN 088/17–18).

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