

An evaluation of a pilot intervention for prenatal care and support for expectant mothers in a low socio-economic community

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Abstract

Background

Antenatal education and care have been shown to be effective in improving the outcomes for pregnant women and their children. In the long term, these interventions have also been shown to reduce child abuse. The interventions often improve the knowledge and well-being of pregnant mothers. The aim of this pilot study was to assess if any immediate changes in stress, depression and anxiety, child development knowledge and parenting styles had occurred after the implementation of the intervention.

Method

A quantitative study, with a pre and post-test design was used to evaluate a pilot intervention at a community health centre. A sample of 5 mothers with a Mean_{age} of 20.80 ($SD = 3.83$) years attended a 9 week group antenatal parenting intervention. The instruments used included Knowledge of Child Development, Depression, Anxiety and Stress Scale and the Parenting Style and Dimensions Questionnaire.

Results

The results of this pilot study suggest that this intervention could assist in improving knowledge of child development and parenting styles at the end of 9 weeks. In terms of well-being, this intervention could assist in reducing depression and stress. However, anxiety increased after 9 weeks, but this could have been due to the impending birth date.

Conclusion

Although this pilot study has a very small sample of participants and the results should be interpreted with caution, this pilot study could provide promising outcomes for pregnant mothers in terms of prenatal education, care and well-being.

Keywords: Parenting, knowledge of child development, depression, stress, anxiety

Introduction

The development of the parent-infant attachment relationship begins during pregnancy (Brandon, Pitts, Denton, Stringer & Evans, 2009). The relationship a mother forms with the foetus is often referred to as prenatal attachment and has been described as the earliest, most basic form of human intimacy (Malekpour, 2007). Several definitions of prenatal attachment have been provided, many conceptualized in health research, but it is generally defined as the emotional tie or bond that develops between expectant parents and their foetus (Malekpour, 2007). When children develop a secure relationship with their parents or caregivers in their first years of life, they generally have better cognitive outcomes, better social interactions, display less behavioral problems, and achieve better at school (Thompson, 2008). Often it is the expectant mother who becomes the first form of attachment with the baby but if the mother is not well the baby may be affected.

In terms of the expectant mother, maternal psychological distress represents a prevalent, enduring and flexible influence that may significantly impact the foetus and neonate (Kingston, Tough & Whitfield, 2012; Kingston, et al., 2014). This psychological distress could include depression, anxiety and stress, which have been shown to result in adverse child outcomes (Kingston, et al., 2012; Kinsaella & Monk, 2009). A recent study conducted by Kinston, et al., (2014) shows that often people are aware of the effects of postnatal mental health, also known as 'having the baby blues', but are not necessarily aware of prenatal mental

health and the effects on child development. Perhaps having pregnant mothers more aware of the effects of their mental health on the development of their unborn babies, could help them to seek assistance to manage their mental health.

Antenatal care and support are generally thought to be effective methods of improving outcomes in pregnant women and their babies (Bahrami, Simbar, & Bahrami, 2013). This antenatal care and support often takes the format of antenatal education and includes information regarding childbirth, child care, safe practices, mental health (Benediktsson, et al, 2013) and general competence to care for the new baby (Gagnon & Sandall, 2007). Knowledge of how babies and children develop becomes a protective factor in the parent-child relationship. This knowledge is regarded important because the new mother is less anxious and stressed when caring for her new baby. In addition, the likelihood of child abuse and neglect as well as infant death could decrease. So, it would seem to be that the more knowledge a mother has, the better it would appear to be for the child's development and growth. Child maltreatment research reflects the importance of the parent-child relationship. The quality of the bond between mother and child is considered a sensitive risk factor in child maltreatment. Maternal functioning and mother-child relationship quality risk factors include: coercive discipline (Shay, 2009); lack of knowledge of a child's needs; negative attributions of why children behave in certain ways; negative verbal exchanges and child

conduct problems (McDonald, Jouriles & Skopp, 2006). Furthermore, when addressing issues surrounding child maltreatment and prenatal mothers distress, it is important to note that within the South African context there is no single explanation for the reasons for the situation of young mothers. Jewkes, Morrell and Christofides (2009) note that pregnancy in young women is more than just an issue of procreative health and young women's bodies but, rather in its causes and consequences, rooted in women's gendered social environment. Bhana, Clowes, Morell and Shefer (2008) state that in developing countries becoming a parent marks the end of schooling and reduces work opportunities and later life opportunities. Young girls generally suffer the most from school exclusions and prejudice (Bhana, Clowes, Morell & Shefer, 2008). In addition to psychopathology, research has extensively documented that maladaptive parenting behaviours and child outcomes are associated with lower socio-economic status (Blair & Raver, 2012). Research has shown that poverty and the

variety of associated risk factors may exceed a mother's coping resources (Walker, et al., 2007; Rafferty & Griffin, 2010; Blair & Raver, 2012). Furthermore, women living in lower-income communities have been shown to have higher levels of stressful life events and daily hassles, increased family and marital conflict, and lower levels of social support (Rafferty & Griffin, 2010). This is echoed in South African literature where low socio-economic communities are rife (Grant & Hallman, 2008; Madhavan & Thomas, 2005).

It would seem then that antenatal care and support could assist in overall improvement of knowledge and well-being. Thus, the purpose of the current pilot study was to evaluate an antenatal care and support intervention programme for mothers from a low-income community and to assess if any immediate changes in stress, depression and anxiety, child development knowledge and parenting styles had occurred after the implementation of the intervention.

Method

Context

The antenatal parenting programme was implemented by the organization in areas where there is unemployment; poverty; violence; family fragmentation; substance abuse; increasing rates of HIV/AIDS – communities in which children are highly at risk of neglect and abuse. The programme targets pregnant women who are at high risk for ante-natal depression and child neglect, abuse and abandonment. The

Participants

A Non-Governmental Organisation, focusing on parent programmes, recruited mothers from a community health centre in a low socio-economic community. The criterion for selection was that pregnant moms had been pregnant for approximately 12 to 16 weeks. Table 1 provides descriptive information regarding the participants. Four of the participants had not completed schooling and one participant did not indicate a level of education. The mean age of the participants was 20.80 ($SD = 3.83$) years. In terms of marital status, two of the participants were never married, one was separated and one was married. Three of the participants depended on their parents for financial support, while the others relied on their spouse or partner for financial support. Each mother was individually contacted at their homes to be provided with information regarding the programme and offered an opportunity to participate. Of an initial 10 recruits 3 did not show for the intervention and 2 had dropped out of the study, due to

main objective of the antenatal programme was to establish a supportive relationship with the mothers before delivery and to provide a safety net that helps secure the best possible chances for the 'at risk' mother to be successful in creating a positive attachment to her infant in the critical time around the delivery. The contents of the 9 week programme included importance of antenatal checks, mother-child health, child development, and challenges during pregnancies, support structures, feeding baby, labour and birth processes, employment and state support.

giving birth earlier than expected. As a result five mothers participated in a 9 week group antenatal parenting intervention. The mothers had not previously been to any parenting classes and two participants were first time mothers.

Instruments

All mothers were Afrikaans speaking and assistance was provided to complete the questionnaire.

Knowledge of Child Development

Knowledge on child development was measured by the Knowledge of Infant Development Inventory (KIDI) (MacPhee, 1981). The KIDI (MacPhee, 1981) consists of 75 items designed to assess parental knowledge across three areas: child development norms and milestones, parenting practices, and parenting principles. In this study, a 30-item version of the KIDI will be

used. In this version, 13 items require the respondent to indicate whether they "agree," "disagree," or "aren't sure" in response to a statement relating to three knowledge areas. The other 17 items relate to the age an infant would be expected to achieve certain milestones. Respondents indicate whether they "agree," "disagree," or "aren't sure." When respondents disagree with a statement, they are asked to indicate if achievement of the milestone would normally be at either a younger or older age; however, over-/underestimate scores were not calculated in this study. Each correct answer is scored as one point.

Stress and Anxiety

The DASS-21 is a measure that assesses three negative emotional states: Depression, Anxiety and Stress (Lovibond & Lovibond, 1995). It consists of 21 items (7 items for each emotional state) and Self-report format consisting of statements referring to the past week. Each item is scored on a 4-point scale (0 = Did not apply to me at all, to 3 = Applied to me very much or most of the time). Scores from each subscale are summed and multiplied by two. Subscale score range from 0 to 42.

Parenting Style and Dimensions Questionnaire (PSDQ)

Robinson, Mandleco, Olsen and Hart (2001) used the primary parenting styles typologies: authoritarian (high control, low warmth), permissive (low control, high warmth), and

authoritative (high control, high warmth) of Baumrind (1967) to develop the PSDQ. PSDQ is a 32-item questionnaire which was used in order to assess the perception of parents' style of parenting of both mother and father. Each parenting style has dimensions, reflecting the parental practices. The authoritarian parenting style is characterised by physical coercion, verbal hostility, and non-reasoning/punitive dimensions. Authoritative parenting style has connection, regulation, and autonomy-granting dimensions. The dimension of indulgence is found in the permissive parenting style. Each dimension has between 4 and 5 items. Participants responded on a 5-point Likert scale with 1 = Never and 5 = Always. Alpha coefficients range between .64 and .98. Items included "... encouraged me to talk about my troubles" and "... found it difficult to discipline me".

Procedure

All participants resided in the same community and were purposively selected to participate. Group sessions were then arranged in a suitable and safe venue. Written informed consent and verbal assent to participate in the study were provided by participants. Before the start of the programme, the participants completed the questionnaire for the study. They then attended the programme for nine weeks. Each week they were provided with information and support regarding what to expect on arrival of their babies. They participated in group activities, were given information pamphlets at every session and then asked to discuss it with the facilitator. Sessions lasted one hour thirty

minutes. Participants completed the same questionnaire at post-test wave two when the

sessions were completed.

Results

[INSERT Table 1 here]

The results show mean changes in all assessed variables (see Table 2 and figure 1). Most notable are reductions in authoritarian parenting styles and practices, depression and stress. There was an improvement in knowledge of

child development and authoritative parenting styles and practices at the end of the 9 week programme. Anxiety levels also increased slightly at the end of the 9 week programme. Based on a paired sample t-test, significant differences between pre and post intervention was found only for authoritarian parenting ($t=3.36$; $d=4$; $p<0.05$).

[INSERT TABLE 2 HERE]

[INSERT FIGURE 1 HERE]

Discussion

This study sought to conduct a preliminary evaluation of an antenatal care and support programme for pregnant mothers who were in their second trimester of pregnancy. Although these results are promising, they are preliminary and must be taken as tentative in nature. The results of this study suggest that the intervention programme may provide promising possibilities in terms of antenatal care and support and well-being for pregnant mothers.

In terms of well-being, pregnant mothers had reduced depression and stress after 9 weeks, which means there may have been a reduction in the psychological distress of the expectant mothers. Psychological distress of expectant mothers has been shown to have adverse

consequences of child outcomes (Kingston, et al., 2012; Kinsaella & Monk, 2009). Anxiety increased which could be due to the impending childbirth and its aftermath, and of parenting or the maternal role (Dunkel Schetter, 2009). Alternatively these anxieties could also be a result of social environmental factors such as prejudice, school exclusions and socio-economic circumstances (Bhana, Clowes, Morell & Shefer, 2008; Grant & Hallman, 2008)

In terms of knowledge of child development there was an improvement. Previous research suggests that when mothers acquire knowledge there is an improvement in the quality of the bond between the mother and the child which may in turn reduce the risk of child abuse (Shay, 2009). Parental knowledge of child development has often been mentioned as a factor related to

child development outcomes (Reich, 2005; Mc Curdy, 2005; Ertem, et al, 2007). It can be defined as understanding of “developmental norms and milestones, processes of child development, and familiarity with caregiving skills.” (Benasich & Brooks-Gunn, 1996: 67; Hess, Teti & Hussey-Gardner, 2004). Research reveals that mothers who are knowledgeable respond more sensitively to their child’s initiations, while mothers with inaccurate expectations about their child’s development tend to be more harsh (Reich, 2005; Mc Curdy, 2005).

In terms of parenting styles, the results show a reduction in authoritarian and permissive parenting, while authoritative parenting increased. The most notable reduction was in terms of the authoritarian parenting style. The literature indicates that parents, who use an authoritarian parenting style, provide minimal love but have high demands. Authoritarian parents command obedience and may be punitive in their disciplinary approaches

Conclusion

Essentially, it seems that educational interventions that seek to improve outcomes for the wellbeing of children of young mothers would need to pay closer attention to the anxieties of young mothers in low socio-economic communities as well. Additionally, mothers may require more than just assistance on parental knowledge and child development,

(Baumrind, 1973). Children from authoritarian homes were found to be more hostile and/or shy with peers, overly dependent on parents and less interested in achievement (Baumrind, 1971; 1973). Three of the mothers had children before and two did not. Mothers who had other children found the intervention had changed their understanding of parenting which could have resulted in the authoritative style of parenting found at post intervention. This was the only significant finding in this study. In this way, mothers may have possibly shown a decrease in negative parenting behaviors, rather than an increase in positive parenting behaviors, following the intervention.

There are limitations to the current study. These include the small sample size and the design of the study that has no control group. These limitations should be considered in further research which could focus on conducting a randomized control trial and using a more heterogeneous group of expectant mothers.

but also knowledge on how to handle the anxieties of adapting to motherhood within the challenging social environmental context. Although we cannot draw firm conclusions from such a small sample, this pilot study holds promising possibilities for such an intervention to support expectant mothers. In addition, this intervention could form part of the antenatal health and well-being sessions offered at community Midwife Obstetric Units (MOUs).

References

- Bahrami, N., Simbar, M., & Bahrami, S. (2013). The effect of prenatal education on mother's quality of life during first year postpartum among Iranian women: A randomized controlled trial. *International Journal of Fertility & Sterility*, 7(3), 169.
- Baumrind, D. (1967). Child-care practices anteceding three patterns of preschool behavior. *Genetic Psychology Monographs*, 75, 43-88.
- Baumrind, D. (1971). Current patterns of parental authority. *Developmental Psychology Monograph*, 4, (1, Pt.2).
- Baumrind, D. (1973). The development of instrumental competence through socialization. *Minnesota symposium on child psychology*, 7: 3-46. Minneapolis: University of Minnesota Press.
- Benasich, A.A., Brooks-Gunn, J. (1996) Maternal attitudes and knowledge of child-rearing: Associations with family and child outcomes. *Child Development*, 67(3):1186-1205.
- Benediktsson, I., McDonald, S. W., Vekved, M., McNeil, D. A., Dolan, S. M., & Tough, S. C. (2013). Comparing Centering Pregnancy to standard prenatal care plus prenatal education. *BMC pregnancy and childbirth*, 13 (Suppl 1), S5.
- Bhana, D., Clowes, L., Morrell, R., & Shefer, T. (2008). Pregnant girls and young parents in South African schools. *Agenda*, 22(76), 78-90.
- Blair, C., & Raver, C. C. (2012). Child development in the context of adversity: experiential canalization of brain and behavior. *American Psychologist*, 67(4), 309.
- Brandon, A., Pitts, S., Denton, W., Stringer, A., Evans, H. (2009). A History of the Theory of Prenatal Attachment. *Journal of Prenatal & Perinatal Psychology & Health*, 23(4): 201-222. [PMC free article][PubMed]
- Chaffin, M., Silovsky, J.F., Funderburk, B., Valle, L.A., Brestan, E.V., Balachova, T., Jackson, S., Lensgraf, J. & Bonner, B.J. (2004). Parent-child interaction therapy with physically abusive parents: efficacy for reducing future abuse reports. *Journal of Consulting and Clinical Psychology*, 72(3): 500-510.
- Dunkel Schetter, C. (2009) Stress processes in pregnancy and preterm birth. *Current Directions in Psychological Science*, 18:205-209.
- Ertem, I. O., Atay, G., Dogan, D. G., Bayhan, A., Bingoler, B. E., Gok, C. G., & Isikli, S. (2007). Mothers' knowledge of young child development in a developing country. *Child: care, health and development*, 33(6): 728-737.
- Gagnon, A.J., Sandall, J. (2007). *Individual or group antenatal education for childbirth or parenthood, or both*. Cochrane Database of Systematic Reviews. 10.1002/14651858.CD002869.
- Grant, M. J., & Hallman, K. K. (2008). Pregnancy-related School Dropout and Prior School Performance in KwaZulu-Natal, South Africa. *Studies in Family Planning*, 39(4): 369-382.
- Hess, C. R., Teti, D. M., & Hussey-Gardner, B. (2004). Self-efficacy and parenting of high-risk infants: The moderating role of parent knowledge of infant development. *Journal of Applied Developmental Psychology*, 25(4): 423-437.
- Johnson, A.K. (2006). *Physical and Psychological aggression and the use of parenting styles. A comparison of African American and caucasian families*. Masters Thesis, University of Maryland: USA
- Kingston, D., Heaman, M., Fell D., Dzakupasu, S., & Chalmers, B. (2012). Factors associated with perceived stress and stressful life events in pregnant women: findings from the Canadian maternity experiences survey.

- Maternal Child Health Journal*, 16(1):158–168.
- Kingston, D.E., McDonald, S., Austin, M.P., Hegadoren, K., Lasiuk, G., & Tough, S. (2014). The public's views of mental health in pregnant and postpartum women: A population-based study. *BMC Pregnancy and Childbirth*, 14(1), 84.
- Kinsella, M.T., & Monk, C. (2009). Impact of Maternal Stress, Depression & Anxiety on Fetal Neurobehavioral Development. *Clinical Obstetrics and Gynecology*, 52(3): 425.
- Lamb, M.E & Baumrind, D. (1978) Socialization and Personality development in the preschool years. In M.E Lamb (Ed), *Social and Personality Development*, USA: Holt, Rinehart and Winsten, 50-67.
- Lovibond, P. F., & Lovibond, S. H. (1995). The structure of negative emotional states: Comparison of the Depression Anxiety Stress Scales (DASS) with the Beck Depression and Anxiety Inventories. *Behaviour Research and Therapy*, 33(3): 335-343.
- MacPhee, D. (1981). Manual: *Knowledge of Infant Development Inventory*. Unpublished manuscript. University of North Carolina at Chapel Hill, USA
- Madhavan, S., & Thomas, K.J. (2005). Childbearing and schooling: New evidence from South Africa. *Comparative Education Review*, 49(4): 452-467.
- Malekpour, M., (2007). Effects of attachment on early and later development. *The British Journal of Developmental Disabilities*, 53, 105: 81-95
- McDonald, R., Jouriles, E.N., & Skopp, N.A. (2006). Reducing conduct problems among children brought to women's shelters: Intervention effects 24 months following termination of services. *Journal of Family Psychology*, 20, 127-136.
- McCurdy, K. (2005). The influence of support and stress on maternal attitudes. *Child Abuse & Neglect*, 29(3), 251-268.
- Rafferty, Y., & Griffin, K. W. (2010). Parenting behaviours among low-income mothers of preschool age children in the USA: implications for parenting programmes. *International Journal of Early Years Education*, 18(2), 143-157.
- Reich, S. (2005). What do mothers know? Maternal knowledge of child development. *Infant Mental Health Journal*, 26(2): 143-156.
- Robinson, C.C., Mandlco, B., Olsen, S.F., & Hart, C.H. (2001). The parenting styles and dimensions questionnaire (PSDQ). *Handbook of family measurement techniques*, 3, 319-321.
- Thompson RA. In: Early attachment and later development: Familiar questions, new answers.2. Cassidy J, Shaver PR, editor. Guilford Press, New York; 2008. pp. 348–365. (Handbook of attachment: Theory, research, and clinical applications).
- Priest, S.R., Austin, M.P., Barnett, B.B., Buist, A. (2008). A psychosocial risk assessment model (PRAM) for use with pregnant and postpartum women in primary care settings. *Archives Women's Mental Health*, 11:307–317.
- Walker, S.P., Wachs, T.D., Meeks Gardner, J., Lozoff, B., Wasserman, G.A., Pollitt, E., & Carter, J.A. (2007). Child development: risk factors for adverse outcomes in developing countries. *The Lancet*, 369(9556): 145-157.
- Woods, S.M., Melville, J.L., Guo, Y., Fan, M.Y., Gavin, A. (2010). Psychosocial stress during pregnancy. *American Journal of Obstetrics & Gynecology*, 202:61–67

Table 1: Descriptive information

Variables		n
Age	20.80 years	
Marital Status	Never Married	3
	Married	1
	Separated	1
Education	Grade 11	2
	Grade 10	2
	Grade 8	1
Financial support	Parents	3
	Partner/spouse	2
Family Structure (family of origin)	Both parents	1
	Only mother	4
First pregnancy	Yes	2
	No	3

Table 2: Pre and Post-intervention assessments

Variables	Pre-intervention				Post-intervention				Mean Score Diff
	Minimum	Maximum	M	SD	Minimum	Maximum	M	SD	
Connection (Connect)	4.20	5.00	4.68	.30	3.80	5.00	4.60	.49	-0.08
Regulation (Regulate)	3.80	5.00	4.10	.60	4.20	5.00	4.44	.36	+0.34
Autonomy Granting (AG)	3.20	4.20	3.80	.43	4.00	5.00	4.52	.46	+0.72
Authoritative Parenting (AVPS)	3.87	4.47	4.17	.25	4.27	4.73	4.52	.22	+0.35
Physical Co-ersion (PC)	1.00	3.50	2.20	1.11	1.00	2.00	1.30	.41	-0.90
Verbal Hostility (VB)	1.50	4.25	2.80	1.24	1.00	4.00	1.95	1.20	-0.85
Punitive (P)	1.75	3.25	2.69	.66	1.00	3.25	2.06	.94	-0.63
Authoritarian Parenting Style (APS)	2.00	3.50	2.73	.66	1.25	2.83	1.79	.71	-1.04
Permissive Parenting Style (PPS)	2.40	4.00	2.90	.74	1.20	3.00	2.28	.72	-0.78
Depression	.00	1.29	.75	.55	.00	1.86	.63	.84	-0.12
Anxiety	.00	1.57	.68	.69	.00	2.29	.71	.94	+0.03
Stress	.00	3.43	1.48	1.76	.14	2.43	.97	.97	-0.51
Knowledge of Child Development (KCD)	13.00	25.00	19.00	4.90	12.00	36.00	23.20	8.64	+4.30

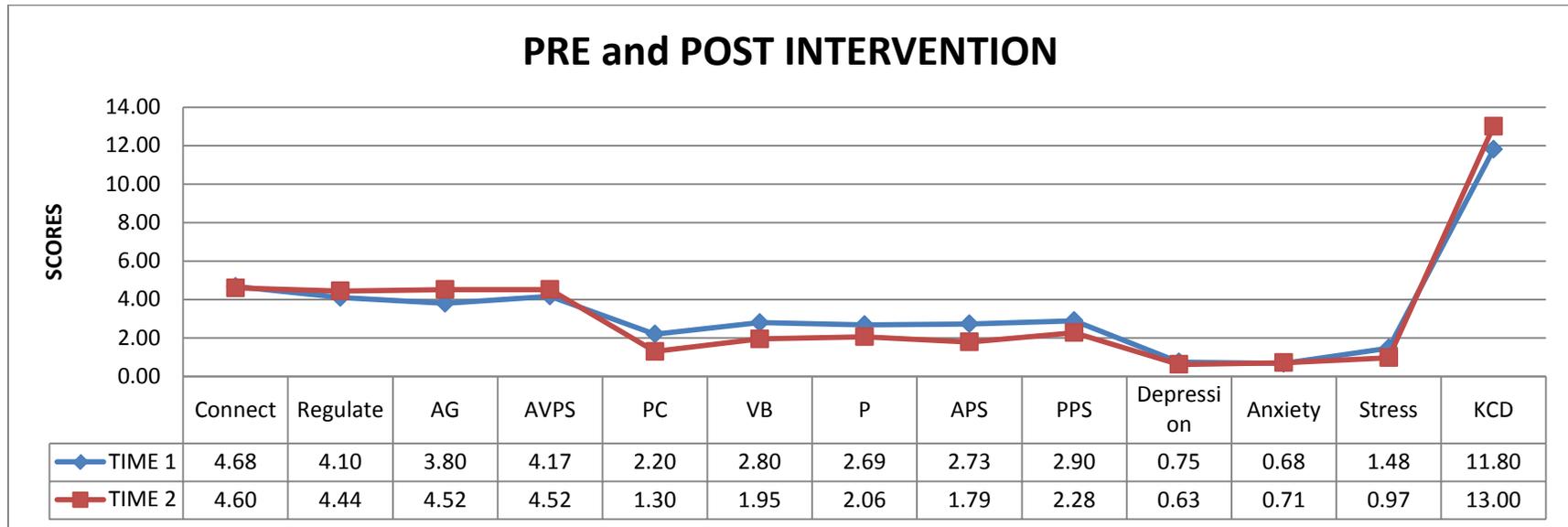


Figure 1: Pre and Post-intervention assessments