Health, work, and spirituality values predict attendance at Pelvic Floor Muscle Training sessions

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Abstract

The nature of life values in women with pelvic floor dysfunction, and their relationship to their attendance at pelvic floor muscle training sessions was assessed in two prospective observational studies. Consecutively referred adult females, with pelvic floor dysfunction, at a women's health physiotherapy clinic in the urogynaecological outpatients' unit of a hospital were recruited. Patients' attendance at sessions of a 6-month PFMT programme was monitored. Their pelvic floor strength was measured by Oxford Grading and Queensland pelvic Floor Questionnaire, and values were measured by the Personal values Questionnaire (Study 1) and the Life Values Inventory (Study 2). In both studies, patients reported that their relationships with family and friends were the most important aspect of their lives. However, health values, work/achievement values, and spiritual values predicted attendance at the PFMT sessions. Patient values impact on physiotherapy adherence, and should be considered as part of future assessment/screening procedures.

Key Words: Patient nonattendance; Urinary Incontinence; Social values; Spirituality

Pelvic floor muscle training (PFMT) for pelvic floor dysfunction can be effective[1,2] and cost-efficient[3,4]. However, a range of psychological factors are associated with patient adherence and outcomes for PFMT programmes[5-7], and identifying the factors predicting treatment-adherence and engagement remains an objective for service planning and development. Such factors are currently sparsely understood, but may include patient values, which, in other health contexts, have been noted to promote health co-production[8] and higher patient satisfaction with outcome[9,10]. However, there have been no studies relating such patient values to their adherence to PFMT, and gaining this information would help support patients to co-produce their health outcomes[2]. Knowledge of the types of values held by a patient group is important for enhancing their motivation[2] and for understanding the way in which the patients gauge the success of a treatment[11].

Measurement of patient values is a relatively new area[8,12], and a key problem has been the extent to which such values can be captured. However, the development of the Personal Values Questionnaire (PVQ-II)[13], and the Life Values Inventory (LVI)[14], provides some means of assessing the strength of a range of values. These two tools adopt somewhat different ways from one another of eliciting values from respondents, and they focus on slightly different (if overlapping) value domains. The PVQ-II asks patients to rate the importance of 9 areas of their lives, leaving the precise definition of those domains to the participant, and it also focuses on areas of activity (e.g., work, health) rather than personal traits. On the other hand, the LVI asks specific questions of the respondent related to 14 value domains, including both activities and personal traits (e.g., achievement).

The current study employed two prospective cohorts of women with pelvic floor dysfunction referred for PFMT; each study used one questionnaire to assess patient values at intake and their impact on subsequent PFMT attendance (giving both questionnaires at once was thought to be too onerous for the patients). The aim was to provide a preliminary

illumination of the values held by this patient group, and explore any relationship between these values and PFMT attendance. The assumption was that any common sets of values emerging from the two different questionnaires across the studies would be the critical ones to focus on in future work.

General Methodology

Materials

Modified Oxford Grading[15] is an objective measure of pelvic floor contraction. Pelvic floor contraction strength is scored a scale of 0 to 5 (0 = none; 5 = very strong). The technique is reliable in this context[15,16].

Queensland Pelvic Floor Questionnaire[17] is a self-administered assessment of bladder, bowel, prolapse, and sexual dysfunction. Each subscale is scored 0–10, and the sum gives an overall pelvic floor dysfunction (0–40); greater scores represent worse function. The internal reliability (Cronbach α) ranges between .72 and .95[17].

Personal Values Questionnaire (PVQ)[13] covers family relationships, friendships/social relationships, couples/romantic relationships, work/career, educational development, recreation, spirituality, community/citizenship, and health/physical well-being. There are 8 questions for each domain, each question rated on a 5-point scale, giving a range of 8 (weak) to 40 (strong) for the strength of each domain. It has an α of .71–.80[18].

Life Values Inventory (LVI)[14] assesses achievement, belonging, concern for the environment, concern for others, creativity, financial prosperity, health and activity, humility, independence, loyalty to family or group, privacy, responsibility, scientific understanding, and spirituality. The scale has 42 questions, each with 3 items answered on a 5-point Likert rating scale, giving a range of 3–15 for each value (3 = not important; 15 = highly significant).

Intervention

The PFMT programme consisted of 6, 60min group sessions (7–8 patients per group) in an outpatients' physiotherapy department of a hospital. Each session provided training in pelvic floor exercises and advice about the behavioural management of continence, such as fluid intake, bladder drill, how to contract pelvic floor muscles before and during increases in abdominal pressure ('the knack'), double voiding, and helpful activities. The sessions also provided information regarding: (1) anatomy and function of pelvic floor muscles; (2) back and spinal care and posture; (3) medical and surgical management; (4) psycho-sexual issues; (5) anatomy of the intestines and bowel, and colorectal problems; and (6) physiotherapy management of PFD and available aids. Patients were directed to practice the exercises at home, on a daily basis (mornings and evenings), between the sessions.

Procedure

On admittance, participants underwent objective assessment of pelvic floor strength (Modified Oxford Grading) by a clinical physiotherapist (blind to their scores on the life values questionnaires), and they provided subjective assessments of their condition (Queensland Pelvic Floor Questionnaire), as well as data on demographic characteristics. The participants also completed a questionnaire to assess their life values: PVQ-II (Study 1) or LVI (Study 2). The participants then progressed through the physiotherapy programme, attending one session every month for six months.

Study 1: Personal Values Questionnaire

124 consecutively-referred adult female patients were invited to participate, and 96 agreed and completed the questionnaires. The mean age of the participants was 48.83

SD$\pm$13.41 (range = 21–83) years. Participants were referred for either a single or a combination of symptoms: 16 (16.6%) stress incontinence; 3 (3.1%) urge incontinence; 33 (34.4%) mixed incontinence; 2 (2.1%) faecal incontinence; 15 (15.6%) prolapse; and 27 (28.2%) prolapse and incontinence. Participants with perineal tears or in post-operative recovery were excluded. The mean objective assessment of the pelvic floor function (Oxford) was 2.67$\pm$.97 (1–4), and the mean subjective assessment (Queensland total) was 28.93$\pm$14.20 (1–63).

The sample was divided into those who attended all of the sessions of the course (completers) and those who did not (non-completers). There were 47 (49%) completers and 49 (51% non-completers). The completers had a mean age of 46.89$\pm$12.43 years, and the non-completers had a mean age of 51.03$\pm$12.52; which were not different from one another, $t(94)=1.25$, $p>.20$, $d=.38$. The mean objective pelvic floor function (Oxford) of the completers was 2.75$\pm$.83, and this was 2.20$\pm$1.32 for the non-completers; which did not differ, $t(94)=1.56$, $p>.10$, $d=.28$. The mean subjective pelvic floor dysfunction for the completers was 30.09$\pm$13.22, and the mean for the non-completers was 27.18$\pm$15.57; which was not different between the groups, $t<1$, $d=.21$. The BMI was classified as 'healthy' (in the normal range, 18.5–24.9) or 'unhealthy' (outside the normal range, which was always overweight, >25). There were 43% completers and 50% non-completers in the healthy range, which was not different between the groups, $X^2(1)=1.68$, $p>.10$, $Phi=.194$.

---- Table 1 ----

Table 1 shows the PVQ scores at intake, along with Pearson correlations with age, objective symptoms (Oxford), and subjective symptoms (Queensland), and point biserial correlations with BMI (0 = overweight; 1 = normal weight). The relationships of the participants ('family', 'social', and 'romantic') were the strongest held values, with 'community' and 'spirituality' being the least strongly held. A repeated-measured analysis of

variance (ANOVA) conducted in these PVQ data revealed that their strengths differed from each other, $F(8,752)=85.29$, p<.001, $\eta^2_p=.476$.

---- Figure 1 ----

Figure 1 shows the group-mean PVQ for completer and non-completer groups. There were stronger values held by completers in terms of: 'work', $t(94)=5.20$, $p<.001$, $d=1.06$; 'spirituality', $t(94)=2.45$, $p<.01$, $d=.51$; 'community', $t(94)=2.68$, $p<.01$, $d=.55$; and 'health', $t(94)=6.99$, $p<.001$, $d=1.48$; but not in terms of: 'family', $t(94)=1.28$, $p>.20$, $d=.27$; 'social', $t<1$, $d=.10$; 'romantic', $t(94)=1.21$, $p>.20$, $d=.28$, 'education', $t<1$, $d=.21$; or 'recreation', $t<1$, $d=.07$

A logistic regression was conducted to determine whether any value domains predicted PFMT attendance. This revealed the model containing all values to predict attendance, $-2LL=57.74$, $p<0.01$; with 'health' ($\beta=.461$, $p<.001$, $OR=1.585$), 'work' ($\beta=.481$, $p<.001$, $OR=1.617$), and 'spirituality' ($\beta=.118$, $p<.05$, $OR=1.125$), all independently predicting attendance, but the other types of values not being related to attendance (all ps>.40, all ORs<.30).

Study 2: Life Values Inventory

43 adult female patients, as described above, were invited to participate, and 36 agreed and completed the questionnaires. Their mean age was 52.56 ± 11.76 (25–67) years. Participants were referred for either a single or a combination of symptoms: 3 (8.3%) stress incontinence; 1 (2.8%) urge incontinence; 18 (50.0%) mixed incontinence; 2 (5.6%) prolapse; and 12 (33.3%) prolapse and incontinence. Participants with perineal tears or in post-operative recovery were excluded. The mean objective assessment of the pelvic floor function (Oxford) was $2.25\pm.67$ (1–3), and the mean subjective assessment of pelvic floor dysfunction (Queensland total) was 39.85 ± 19.05 (13–88).

There were 19 (52.8%) completers and 17 (47.2% non-completers). The completers had a mean age of 53.00 ± 11.37 years, and the non-completers had a mean age of 52.06 ± 12.51; which did not differ from one another, $t<1$, $d=.08$. The mean objective pelvic floor function (Oxford) was $2.45\pm.49$ for the completers, and $1.75\pm.86$ for the non-completers; which was not different, $t<1$, $d=.16$. The mean subjective pelvic floor dysfunction was 44.82 ± 19.99 for the completers, and 33.93 ± 16.57 for the non-completers; these scores were not different $t<1$, $d=.25$. The BMI was classed as 'healthy' or 'unhealthy'; there were 39% completers and 30% non-completers in the healthy range; which did not differ, $X^2(1)=1.71$, $p>.60$, $Phi=.081$.

---- Table 2 ----

Table 2 shows the LVI scores at intake, along with Pearson correlations with age, objective symptoms (Oxford), and subjective symptoms (Queensland), and point biserial correlations with BMI (0 = overweight; 1 = normal weight). The values of 'others' and 'responsibility' were the strongest held, with 'finance' and 'science' the least strongly held. A repeated-measured ANOVA revealed that the strengths of the values did differ from one another, $F(13,455)=17.52$, $p<.001$, $\eta^2_p=.334$.

---- Figure 2 -----

Figure 2 shows the group-mean LVI scores for the completer and non-completer groups. Analyses revealed that there were stronger values held by completers in terms of: 'achievement', $t(34)=2.36$, $p<.01$, $d=.82$; 'creativity', $t(34)=3.01$, $p<.001$, $d=1.08$; 'health', $t(34)=2.50$, $p<.01$, $d=.83$; 'independence', $t(34)=3.36$, $p<.001$, $d=1.11$; 'loyalty', $t(34)=3.30$, $p<.01$, $d=1.13$; and 'spirituality', $t(34)=2.52$, $p<.01$, $d=.90$; but not in terms of: 'belonging', $t<1$, $d=.07$; 'environment', $t(34)=2.05$, $p>.05$, $d=.28$; 'others', $t<1$, $d=.21$; 'finance', $t<1$, $d=.12$; 'humility', $t(34)=1.48$, $p>.10$, $d=.32$; 'privacy', $t<1$, $d=.23$; 'responsibility', $t(34)=1.53$, $p>.10$, $d=.20$; and 'science', $t<1$, $d=.19$.

A logistic regression conducted to determine whether any value domains predicted attendance, and revealed a significant model with all domains, $-2LL=49.75$, $p<.001$; with 'health' ($\beta=15.36$, $p<.01$, $OR=4.321$), 'achievement' ($\beta=4.554$, $p<.05$, $OR=.011$), 'creativity' ($\beta=.793$, $p<.01$, $OR=.675$), 'independence' ($\beta=.690$, $p<.01$, $OR=.343$), 'loyalty' ($\beta=.695$, $p<.01$, $OR=.432$), and 'spirituality' ($\beta=.218$, $p<.05$, $OR=.125$), independently predicting attendance, but the other types of values not being related to attendance (all ps>.30, all ORs<.20).

Discussion

The current studies were an initial investigation of the values held by women with pelvic floor dysfunction referred for a PFMT, and the relationship between these values and treatment attendance. Establishing such information may allow better understanding of the views of the patients[9,10], the kinds of things that they regard as important to achieve from the treatment[11], and the values to support in order to enhance treatment attendance[2]. Both studies noted that the areas important were patients' relationships to their families, friends, and significant others. In contrast, work and educational achievement (Study 1), and financial success (Study 2), were not regarded as important. Similarly, spirituality (both studies), and scientific understanding (Study 2), were not strongly valued. That the two studies produced broadly similar results to one another suggests that confidence can be placed in the results regarding the important values for this patient group. The tendency of women to hold such values strongly has been demonstrated previously[19,20]. Relationship values have also been found to be very important to those with chronic illnesses, certainly to a greater extent than financial issues[21,22]. In fact, relationships were rated more strongly than the patients' own health in both current studies. The relatively low strength of spiritual values overall may reflect that the study was conducted in a largely secular country, and this result may be

different in other countries. These values are important to know about as they may inform

assessments of the success of interventions for this group – any improvement in the patients'

ability to support these values may be regarded as the subjective mark of a successful

intervention.

There were also similarities across the two studies in the values that predicted the

likelihood of patients completing PFMT. In particular, the more emphasis that patients

placed on health, the more likely they were to attend the full programme. This finding may

not be entirely surprising[23], but it suggests that working with the patient to improve such

values may increase treatment attendance and compliance. The current study also identified

work and spirituality (Study 1), and achievement, spirituality, creativity, independence, and

loyalty (Study 2), as predictors of attendance. There were no relationships found between the

physical characteristics of the patient (i.e., age, pelvic floor dysfunction severity, BMI) and

attendance. This result corresponds to several previous findings that have reported no or

limited relationship between these latter physical variables and treatment

attendance/compliance[3,5].

The value that the participants placed on work (Study 1) or financial achievement

(Study 2) might be explained in terms of their motivation to overcome the pelvic floor

problems so that they can more fully engage in work or activities in which they want to

succeed. Some of the personal traits that predict attendance seen in Study 2 (especially

loyalty and responsibility) may also be understood as being traits that might drive a patient to

attend the full course once they commit to that treatment. The importance of spirituality in

both studies is harder to understand – the questions from the LVI relating to this domain tend

to focus on a 'belief in greater powers'. It might be noted that this is a cornerstone of the

twelve steps programmes in recovery from substance abuse[24,25], and the degree to which

these beliefs act to support engagement with health programmes may warrant further

investigation. Another possibility is that those who answer in the affirmative to questions regarding their belief in 'a greater power' also experience less 'need for control'[26]. Lower levels of a need for control are associated with lower levels of anxiety[27], which, in turn, are known to increase attendance at PFMT session[7].

As with any investigation, there are limitations to the current study. The samples were not particularly large, and replication of the findings would be sensible. Although the systematic replication of the key results across two studies goes some way to offset power concerns in each individual study. In addition, it is not known if different forms of pelvic floor dysfunction are associated with different values and different relationships to attendance. The manner in which values were measured is new to this area, and validity will need to be further established – although, to the extent that similar domains were noted across the two studies, suggests that these findings are robust. A common problem emerging from both studies was that the participants commented that the questionnaires were rather long, and further work might seek to reduce the size of the tools.

In summary, the current report found certain values were related patient PMFT attendance; especially health values, values related to work/achievement, and those related to spirituality, loyalty, and responsibility. Both studies noted that the patients valued relationships more strongly than any other domain. One implication of these findings is that supporting the patients to hold such values, or a subset therefore, possibly focusing on health values, might enhance attendance and satisfaction with PFMT for pelvic floor dysfunction.

Statements

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Table 1: Personal value (PVQ) means (standard deviation) at intake along with Pearson correlations with age, objective symptoms (Oxford), and subjective symptoms (Queensland), and point biserial correlations with BMI (0 = overweight; 1 = normal weight).

	Mean (SD)	Age	BMI	Objective	Subjective
Family Relationships	35.45 (2.63)	-.039	.121	.202	-.127
Social Relationships	32.58 (4.05)	.051	.178	.178	-.062
Romantic Relationships	34.60 (3.29)	-.124	.183	.139	-.217
Work/Career	29.78 (3.47)	-.102	.030	.030	.101
Education	28.59 (3.44)	-.198	.270	-.020	-.139
Recreation	30.16 (4.08)	.035	.051	-.148	-.011
Spirituality	24.83 (5.97)	.214	-.018	-.078	-.160
Community	28.35 (4.58)	.097	-.135	-.165	.012
Health	30.73 (3.98)	-.077	.088	.170	-.013

*p < .05; **p < .01; ***p<.001

Table 2: Personal value (LVI) means (standard deviation) at intake along with Pearson correlations with age, objective symptoms (Oxford), and subjective symptoms (Queensland), and point biserial correlations with BMI (0 = overweight; 1 = normal weight).

	Mean (SD)	Age	BM	Objective	Subjective
Achievement	10.86 (1.89)	-.002	.196	.415*	.425*
Belonging	10.17 (2.08)	-.120	.047	-.088	.448**
Environment	10.67 (2.61)	.154	.513**	.270	.306
Others	12.31 (2.41)	.162	.107	.116	.310
Creativity	10.86 (2.53)	.144	.266	.338	.275
Financial	8.72 (2.40)	-.298	.214	-.277	-.275
Health	9.67 (2.48)	.017	.440**	.338	.143
Humility	9.33 (2.21)	.014	.119	-.226	.092
Independence	11.14 (1.95)	-.080	.110	.347	.197
Loyalty	11.89 (2.51)	.022	.075	.320	.352*
Privacy	10.17 (2.54)	.271	-.184	.232	.259
Responsibility	12.67 (2.29)	.066	.187	.201	.349*
Scientific	8.61 (2.45)	.156	-.037	-.192	.218
Spirituality	9.22 (3.38)	.271	-.210	-.245	.236

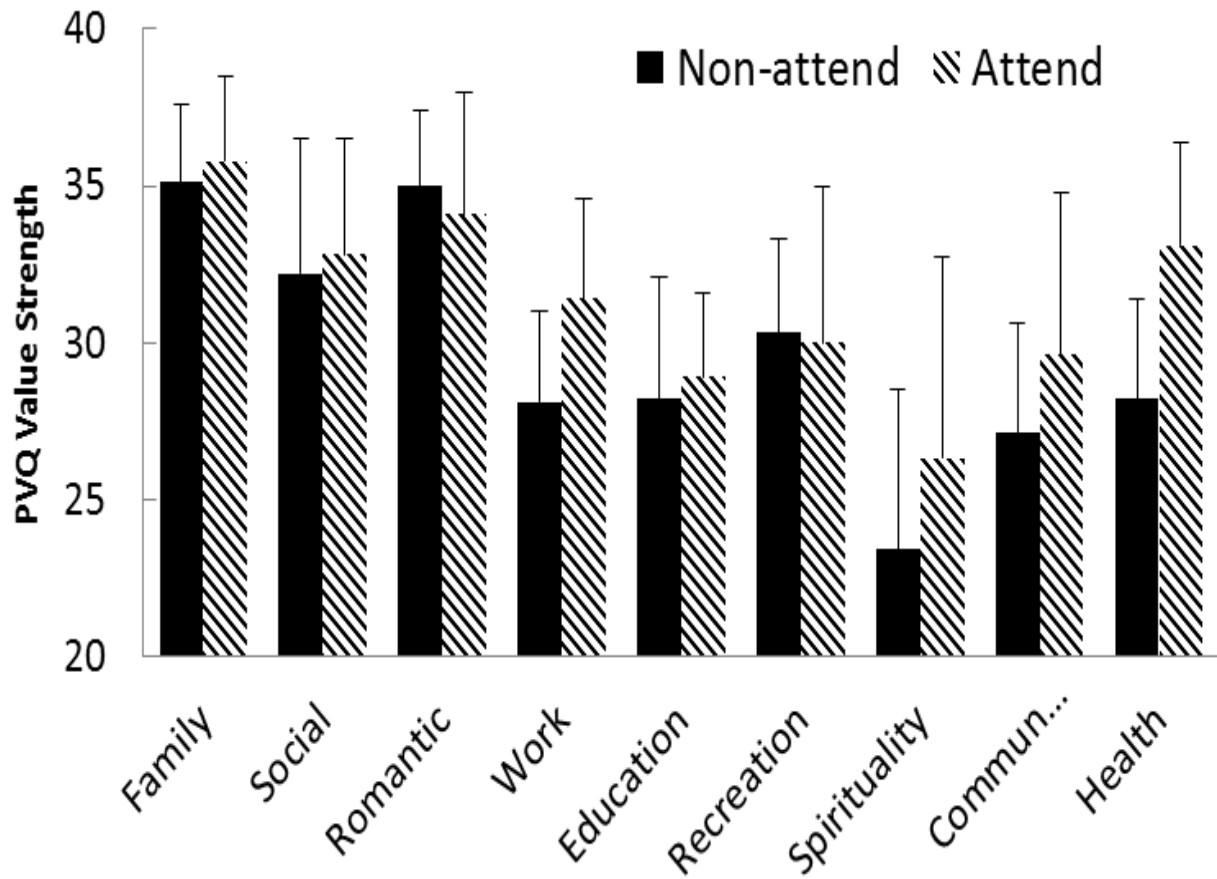*$p < .05$; **$p < .01$; ***$p < .001$

Figure 1: Group-mean (standard deviation) PVQ scores for the nine value domains for the completer and non-completer groups.
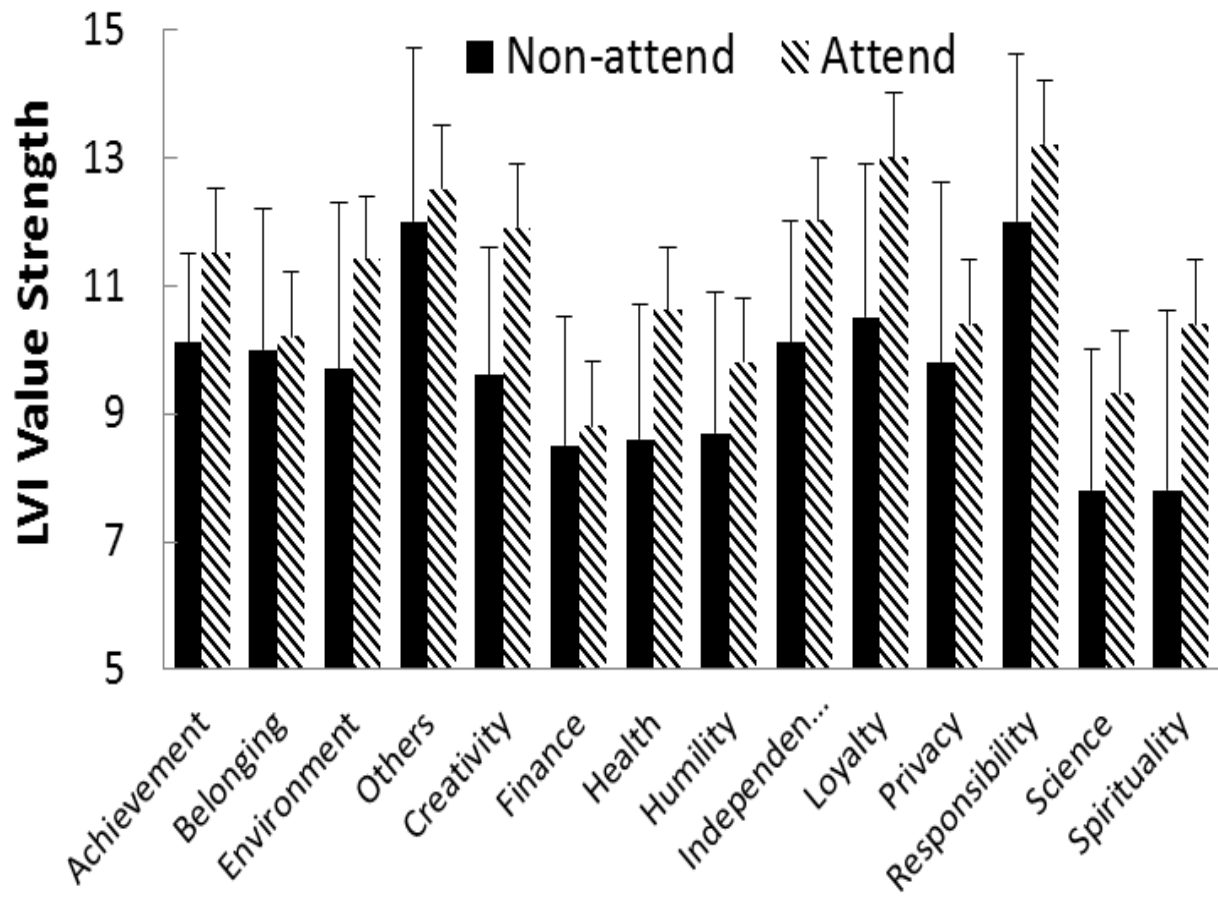
Figure 2: Group-mean (standard deviation) LVI scores for the 14 value domains for the completer and non-completer groups.