Goal management tendencies predict trajectories of adjustment to lower limb amputation up to 15 months post rehabilitation discharge

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Objective: To explore patterns of change in positive affect, general adjustment to lower limb amputation, and self-reported disability from rehabilitation admission to 15 months post-discharge; to examine whether goal pursuit and goal adjustment tendencies predict either initial status or rates of change in these outcomes, controlling for sociodemographic and clinical covariates.

Design: Prospective cohort study with four time points (T1 = on admission; T2 = 6 weeks post-discharge; T3 = 6 months post-discharge; T4 = 15 months post-discharge).

Setting: Inpatient rehabilitation.

Participants: Consecutive sample of 98 persons aged 18 years and over with major lower limb amputation.

Interventions: Not applicable.

Main Outcome Measures: Positive affect subscale of the Positive and Negative Affect Scales (PANAS); general adjustment subscale of Trinity Amputation and Prosthesis Experience Scales-Revised (TAPES-R); World Health Organisation Disability Assessment Schedule Version 2.0 (WHODAS 2.0).

Results: Positive affect decreased from T1 to T4 for the overall sample, while general adjustment increased; self-reported disability scores remained stable over this period. Stronger goal pursuit tendencies were associated with greater positive affect at T1, stronger goal adjustment tendencies were associated with more favourable initial scores on each outcome examined. With regard to rates of change, stronger goal pursuit tendencies buffered against decreases in positive affect and promoted decreases in self-reported disability over time, while stronger goal adjustment tendencies enhanced increases in general adjustment to lower limb amputation.

Conclusions: Greater use of goal pursuit and goal adjustment strategies appears to promote more favourable adjustment to lower limb amputation over time across a range of important rehabilitation outcomes.

Key Words: Amputation; adaptation, psychological; rehabilitation; goals; longitudinal studies.

Abbreviations

FGA	Flexible Goal Adjustment
ICC	Intraclass Correlation Coefficient
LLA	Lower Limb Amputation
MLM	Multilevel Modelling
QOL	Quality of Life
PANAS	Positive and Negative Affect Scales
REML	Restricted Maximum Likelihood
TAPES-R	Trinity Amputation and Prosthesis Experience Scales - Revised
TGP	Tenacious Goal Pursuit
WHODAS 2.0	World Health Organisation Disability Assessment Schedule Version 2.0

Rehabilitation following lower limb amputation (LLA) aims to restore a level of functioning that enhances participation and quality of life (QOL), facilitates health and wellbeing, and assists individuals to achieve their goals.[1] Current understanding of adjustment following LLA is limited.[2] Models of adjustment to disability describe a dynamic process involving the interplay of factors relating to the person, injury, immediate social and interpersonal environment, and broader environmental context.[3-5] Adjustment thus represents a path unique to each individual that can be facilitated or hindered by personal and environmental factors. Associations between sociodemographic and clinical factors and different indicators of adjustment have tended to be weak or inconsistent,[1] and such factors are not typically amenable to change. In recent years, there has been growing emphasis on the influence of potentially alterable psychological characteristics, which may be responsive to treatment interventions.[6]

The dual-process model of assimilative and accommodative processes[7] offers potential to increase understanding of adjustment to LLA.[8,9] This conceptual framework addresses the dynamics of goal management across the lifespan, delineating two basic self-regulatory modes that facilitate adjustment to loss and limitation. The assimilative (goal pursuit) mode is directed at actively trying to change unsatisfactory life circumstances or behaviour to correspond with goals and preferences, and enables maintenance of identity and purpose in adverse situations[7,10]. Useful in improving or maintaining function, it tends to dominate when circumstances are perceived to be changeable, but is constrained by availability of resources (e.g., social support, physical ability).[10] When assimilative efforts become ineffective the accommodative (goal adjustment) mode is activated; this is directed at revising goals and self-evaluative standards to meet current personal and situational restrictions. This mode may be more adaptive in circumstances of permanent loss or constraint, as it facilitates the preservation of continuity, efficacy and personal worth despite emerging limitations.[11] Coffey and colleagues[9] recently demonstrated that stronger tendency towards goal pursuit on rehabilitation admission following LLA predicted better physical and psychological QOL six months after discharge, while stronger tendency towards goal adjustment predicted lower disability and higher environmental QOL.

Longitudinal research enables exploration of adjustment trajectories, but is often compromised by attrition due to social, personal and health difficulties. This limits the complexity of statistical procedures that can be conducted, as methods traditionally employed in longitudinal data analysis such as repeated measures analysis of variance (ANOVA) and multiple regression require participants to contribute data at each assessment. Furthermore, these methods imply linearity in the adjustment process, yet recent studies indicate the occurrence of more complex, nonlinear trends.[6] Multilevel modelling (MLM) is a technique that offers potential to overcome limitations inherent in traditional approaches to longitudinal data analysis. Its flexibility in handling missing data means that participants are retained in the estimation of parameters even if they have contributed data at one time point only.[12] Moreover, MLM can estimate the variation accounted for by factors that are either time-invariant or change/co-vary with the outcome of interest (time-varying).[13]

The objectives of the present study are twofold: (1) to explore patterns of change in positive affect, general adjustment to LLA, and self-reported disability from rehabilitation admission to 15 months post-discharge in a sample of individuals with

LLA; and (2) to examine whether goal pursuit and goal adjustment tendencies predict average initial status scores or rates of change in these outcomes, controlling for significantly associated sociodemographic and clinical variables. It is hypothesised that stronger goal pursuit and goal adjustment tendencies will predict more favourable initial status and rates of change in these outcomes for the overall sample. Examining patterns of change in valued rehabilitation outcomes and identifying their predictors may aid in the early detection of individuals at risk for poor long-term adjustment and establish important targets for intervention in this patient group.

Methods

Participants and procedure

Participants were recruited from two hospitals in Ireland providing specialised inpatient rehabilitation programmes for LLA. Patients aged ≥18 years with major LLA (i.e., above ankle level) for which inpatient rehabilitation was not previously provided and sufficient spoken English for the demands of the study were eligible to participate. Patients with Mini-Mental State Examination[14] scores of ≤18 and those considered unsuitable due to previous/current history of psychiatric morbidity were excluded. Approval was obtained from the ethics committees of both hospitals. The data collection procedure has been described previously.[9] A prospective cohort design was employed; participants completed questionnaires on admission to rehabilitation (T1), and at six weeks (T2), six months (T3), and 15 months post-discharge (T4).

Measures

Sociodemographic (age, gender, education level, marital status, living situation) and clinical (weeks since amputation, cause and level of amputation, presence of co-morbidities, residual and phantom limb pain) data were recorded at T1. Presence of comorbidities was assessed using a checklist containing the following comorbid conditions: cardiac problems, respiratory problems, previous stroke, diabetes, or other.

Participants completed the following measures at each time point:

Pain intensity. A single item from the Brief Pain Inventory[15] asked participants to rate the average intensity of amputation-related pain they experienced on a numeric rating scale ranging from 0 (‘no pain‘) to 10 (‘pain as bad as you can imagine‘).

Goal management tendencies. In the English version of the Tenacious Goal Pursuit (TGP) and Flexible Goal Adjustment (FGA) scales[7], the 15-item TGP scale assesses the tendency to persist in pursuing goals even in the face of setbacks and obstacles; the 15-item FGA scale measures readiness to disengage from blocked goals and focus on positive aspects of adverse situations. These scales have been employed with different patient groups with acquired disability[16-19] and have satisfactory reliability and validity.[7]

Positive affect. The Positive and Negative Affect Schedule[20] (PANAS) consists of 20 words describing 10 positive and 10 negative emotions. Positive and negative items are summed separately; higher scores are indicative of greater affect. Only the positive affect subscale, which assesses the extent to which a person feels enthusiastic, active and alert, was examined in the present analysis. The PANAS demonstrates good reliability and validity[20,21] and has been employed in previous studies of LLA.[8,22]

General adjustment to LLA. The psychosocial adjustment scale of the Trinity Amputation and Prosthesis Experience Scales-Revised[23] (TAPES-R) contains three LLA-specific, 5-item subscales measuring general adjustment, social adjustment, and adjustment to limitations; higher scores indicate better adjustment. Only the general adjustment subscale, which assesses successful adjustment to and acceptance of LLA, was analysed in the present study. The TAPES-R demonstrates acceptable psychometric properties.[23]

Self-reported disability. The 12-item self-administered version of the World Health Organisation Disability Assessment Schedule Version 2.0[24] (WHODAS 2.0) assesses respondents' perceived level of day-to-day functioning in six domains of activity and participation: understanding and communication; getting around; self-care; getting along with people; life activities; and participation in society. An overall disability score is calculated; higher scores indicate greater disability. The WHODAS 2.0 shows good reliability and validity[25,26] and has been employed in previous studies of this patient group.[27]

Statistical analysis

Data were checked for distribution, missing values and outliers following guidelines set out by Tabachnick and Fidell.[28] Data were summarised as means and SDs for continuous variables, frequencies and percentages for categorical variables. Cause of amputation (0 = chronic i.e., peripheral vascular disease, diabetes or cancer, 1 = acute i.e., trauma or infection), living situation (0 = living alone, 1 = living with others), and marital status (0 = without partner, 1 =with partner) were recoded as dichotomous variables. Differences between the initial (N = 98) and final (N = 53) cohort were examined using Fisher's exact probability tests, chi-squared tests, and independent t-tests, as appropriate.

MLM was used to estimate the growth trajectory of each outcome and determine the effects of goal management tendencies on rates of change over the study period. Separate models were produced for each outcome using a model building strategy recommended by Singer and Willett.[29] An unconditional means model (no predictors) was firstly specified in order to calculate the intraclass correlation coefficient (ICC), which describes the proportion of variance in the outcome attributable to between-person differences. An unconditional growth model (time as only predictor) was then fitted to estimate average initial (i.e., T1) status and rate of change (i.e., slope) for the overall sample. TGP and FGA were then added as time-varying predictors, along with their interactions with each other and time (TGP*FGA, Time*TGP, Time*FGA). Time-varying covariates (age, weeks since amputation, pain intensity) and their interactions with time were added next to control for their influence, followed by time-invariant covariates (gender, education level, and T1 assessments of marital status, living situation, cause and level of amputation, presence of co-morbidities, phantom limb pain, and residual limb pain) and their interactions with time. Variables and interaction terms that did not predict a significant proportion of variance ($p < .05$) in either initial status or rate of change were trimmed to yield the most parsimonious model. Significant interaction effects were plotted at values of one SD above and below the predictor and moderator means using Interaction software (Soper, 2011).[30]

Analyses were conducted using SPSS (Version 20: IBM, 2010) MIXED procedures. Restricted maximum likelihood (REML) estimation was employed, as it provides more accurate results with smaller sample sizes.[31] Time was coded as 0, 1, 2 and 3 for Times 1-4 respectively, so that the intercept of each model represented the value of the outcome at initial assessment. Continuous predictor variables were standardised to enhance interpretation of results.[29,32,33] The critical alpha level was set at .05. An unstructured covariance structure was assumed in each model.

Results

Sample characteristics

Sociodemographic and clinical characteristics are summarised in Table 1. The majority were male, not currently married, lived with family, had high school education or lower, unilateral amputation, and co-morbid medical conditions. Peripheral vascular disease was the most common amputation etiology.

Preliminary analyses

Of the 98 individuals who completed T1, 75 completed questionnaires at T2 (77%), 64 at T3 (65%), and 53 at T4 (54%). Primary reasons for attrition were loss to follow-up (n = 17), illness (n = 16), refusal to participate (n = 8), and mortality (n = 4). Participants who dropped out after T1 did not differ significantly from those who remained in their sociodemographic and clinical characteristics or T1 predictor and outcome scores, excepting education level. A chi-squared test indicated that retained participants were more likely to have >high school level education than non-completers (p = .046). Table 2 presents Cronbach's alphas, means and SDs for measures at T1-T4.

Multilevel models

ICCs indicated that between 45% (positive affect) and 63% (general adjustment to LLA) of total variation in outcomes was attributable to differences between participants (Tables 3-5).

Objective 1

The unconditional growth model for positive affect revealed an average initial status of 35.474 (SE = 0.780, $p \leq .001$). The average growth trajectory was negative, indicating a decrease of 1.73 points (SE = 0.326, $p \leq .001$) in positive affect scores per assessment (Table 3). For general adjustment to LLA, Table 4 shows that the average initial status was 2.995 (SE = 0.055, $p \leq .001$). The average growth trajectory was positive; general adjustment to LLA scores increased by 0.066 points per assessment (SE = 0.020, $p \leq .001$). Average initial status for self-reported disability was 36.155; the average growth trajectory was non-significant (Table 5), indicating that scores remained stable across assessments.

Objective 2

Positive affect: In the final model, a positive association was observed between initial status and both TGP and FGA; in support of our hypothesis, higher scores on both tendencies were associated with higher positive affect at T1. The interaction between

TGP and rate of change was significant; higher TGP scores were associated with slighter decreases in positive affect from T1 to T4, as hypothesised (Figure 1). A significant interaction was also observed between time and co-morbidities. Presence of co-morbidities was associated with higher initial positive affect that declined significantly from T1 to T4. Conversely, absence of co-morbidities was associated with lower initial scores that increased over time (Figure 2).

General adjustment to LLA: The final model revealed a positive association was observed between initial status and FGA; in accordance with our hypothesis, higher FGA scores were associated with better general adjustment to LLA at T1. Gender was also related to initial status; males had higher T1 general adjustment to LLA scores than females. The interaction between FGA and rate of change was significant; although general adjustment to LLA increased from T1 to T4 for the overall sample, higher FGA scores were associated with higher initial status and a slightly sharper increase over time, as hypothesised (Figure 3). Time since amputation also interacted significantly with time; more recent amputation was associated with greater increases in general adjustment to LLA over the study period (Figure 4).

Self-reported disability: A negative association between FGA and initial status was observed in the final model; higher FGA scores were associated with lower self-reported disability scores at T1, as hypothesised. Absence of phantom limb pain at T1 was also associated with lower initial self-reported disability. A significant interaction was observed between TGP and rate of change; in line with our hypothesis, lower TGP was associated with higher initial self-reported disability scores that remained relatively stable from T1 to T4, whereas higher TGP was associated with decreases in self-reported disability over time (Figure 5). Level of amputation also interacted significantly with time. Figure 6 indicates that bilateral amputations were associated with a sharp increase in self-reported disability from T1 to T4, while unilateral transtibial and transfemoral amputation were both associated with a slight decrease over time.

Discussion

The first objective of this study was to explore patterns of change in positive affect, general adjustment to LLA, and self-reported disability from rehabilitation admission up to 15 months post-discharge in a sample of individuals with LLA. Positive affect decreased and general adjustment to LLA increased over the study period for the overall sample, while self-reported disability remained stable. Average positive affect scores appeared to be higher among participants from T1-T3 than previously observed in the general population.[21] The process of securing an inpatient rehabilitation placement varies in length, as patients await approval of payment for prosthetic manufacture; further delays in admission are often experienced by those with complex co-morbid conditions.[34,35] Participants might have viewed commencement of rehabilitation as an achievement in itself. This, coupled with psychosocial and functional gains resulting from formal and informal support received during rehabilitation, could explain temporary elevations in positive affect. Alternatively, patients may have reported increased positive affect due to the alleviation of issues related to the affected limb prior to amputation (e.g., pain). Subsequent decreases in positive affect to levels similar to those observed in the general population[21] could thus represent a gradual return to usual affect following discharge rather than disimprovement. The finding that general adjustment to LLA increased over time suggests that participants became more accepting of their limb loss. This may be indicative of accommodative processes at work, with individuals adapting to limb loss through positive reappraisal of their situation.[36] WHODAS 2.0 scores for the present sample were in the 90th percentile at each time point,[24] suggesting that participants experienced considerable and enduring limitations in activity and participation. Current conceptualisations of adjustment to disability call attention to the dynamic and fluid nature of this process.[3,4] Overall, the present data suggest that adjustment to LLA is a multifaceted process, and highlight the role of longitudinal research in capturing its dynamic character and identifying patterns of change that are not detectable in cross-sectional studies.

The second objective was to examine whether goal pursuit and goal adjustment tendencies predicted initial status or rates of change in outcomes over the study period. As hypothesised, stronger goal pursuit tendencies were associated with greater positive affect on rehabilitation admission, while stronger goal adjustment tendencies were associated with higher positive affect and general adjustment to LLA, and lower self-reported disability. Goal management tendencies also had a positive influence on rates of change in these outcomes; stronger goal pursuit tendencies appeared to buffer against decreases in positive affect and promote decreases in self-reported disability, while stronger goal adjustment tendencies appeared to enhance general adjustment to LLA. The findings are consistent with cross-sectional[8,16,18,19] and longitudinal[9,17] studies in which TGP and FGA were associated with more favourable outcomes among individuals with chronic illness and disability. Although previous research has observed positive associations between TGP and positive affect[8,37], this is the first study to provide longitudinal evidence of this relationship. Participants with stronger goal pursuit tendencies might have experienced less significant decreases in positive affect as their continued striving towards valued goals increased the likelihood of goal attainment, creating more opportunities for experience of positive feelings. The association of higher FGA with increases in general adjustment to LLA over time reflects the relationship of goal adjustment tendencies with favourable outcomes such as illness acceptance[18], purpose in life[19], and life satisfaction[16] observed in previous research. Overall, these findings suggest that goal pursuit tendencies play an important role in the experience of positive affect, which is transient in nature[20], while goal adjustment tendencies have a greater influence on more enduring aspects of subjective wellbeing. Regarding the WHODAS 2.0, previously reported analyses indicated that higher FGA rather than TGP on rehabilitation admission predicted lower self-reported disability six months after discharge.[9] This suggests that although goal adjustment is more adaptive in the initial reintegration period following completion of rehabilitation, goal pursuit gains in importance over time in promoting higher levels of activity and participation. Arends and colleagues[19] found that higher FGA predicted greater participation in family roles, autonomy outdoors, and social relations in a sample of adults with polyarthritis. Lower TGP and higher FGA were predictive of greater participation in work and education, however. These findings suggest that goal pursuit and goal adjustment tendencies influence different aspects of activity and participation; further work is required to clarify these relationships.

A range of sociodemographic and clinical characteristics were associated with rates of change in outcomes. Individuals reporting co-morbid conditions on admission experienced greater decreases in positive affect over time than those with no co-morbidities. Similar relationships between co-morbidity and adjustment are documented elsewhere.[38,39] Individuals with bilateral amputations experienced increases in disability over time, whereas disability decreased in those with a unilateral transtibial or transfemoral amputation. Indeed, bilateral amputations have been found to impede physical functioning to a greater extent than unilateral limb loss.[40,41] Shorter time elapsed since amputation was associated with steeper increases in general adjustment over time. Delays in rehabilitation admission may be indicative of more complex cases, which could account for the less pronounced increase in general adjustment observed.

Overall, the findings provide strong support for the dual-process model's assumptions[7], and highlight the value of examining patterns and predictors of change in rehabilitation outcomes over time.[12] Interpreting adjustment as a dynamic, ongoing process could improve rehabilitation treatment and discharge planning. Greater understanding of normative adjustment patterns could help clinicians identify patients at risk for psychosocial or functional decline and intervene as appropriate. Patients and their families could use this information to assist in decision-making about long-term care needs and financial plans.[42] Understanding associations between patient or treatment characteristics and recovery patterns could also facilitate clinical decision-making throughout rehabilitation and identify targets for intervention[43]. The present study also highlights the value of examining positive outcomes such as positive affect and general adjustment to LLA, which often coexist with negative outcomes following the onset of traumatic experiences. Routine assessment of positive indicators of adjustment would offer clinicians a broader and more realistic insight into the adjustment process that acknowledges its potential for growth, benefit and meaning finding.[6] The findings provide further support for our assertion that fostering the use of goal pursuit and goal adjustment strategies early in the rehabilitation process may help to promote favourable long-term outcomes in this patient group.[9] The dual-process model has been employed in the development of interventions to facilitate adjustment to disability that could be incorporated into existing rehabilitation programmes.[44,45]

Study limitations

Consistent with previous research in this patient group, attrition was significant; only 54% of the original sample completed T4 questionnaires. However, the use of MLM permitted retention of all data collected regardless of whether participants dropped out after T1. Although the present study examined outcomes at four critical junctures in the process of adjustment to LLA, the absence of an assessment immediately after discharge from rehabilitation precludes the effects of rehabilitation being delineated from those following discharge. Furthermore, weighting comorbid conditions based on severity and assessing comorbidity on a continuum using a standard comorbidity index rather than treating as a dichotomous variable may strengthen analysis and enhance the validity of future research. While key sociodemographic and clinical factors were included to capture a broad range of potential covariates in the present study, they may be other covariates that were not captured in this study (e.g., length of rehabilitation stay) that may also have an interaction effect on the measured outcomes. Reliance on self-report measures allows for the possibility of response biases. Eliciting caregivers' perspectives in addition to patients' could provide a broader view of the adjustment process. Confirmation of findings in future research using clinical endpoints would also be informative.

Conclusions

The present study afforded greater insight into the temporal characteristics of adjustment to LLA, and identified factors predictive of changes in important rehabilitation outcomes over time. The findings indicate the importance of fostering appropriate use of goal management strategies early in rehabilitation to promote favourable long-term outcomes.

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Table 1. Sociodemographic and clinical characteristics of the initial sample (*N* = 98).

Variable	*n*	%
Gender		
Male	78	80
Female	20	20
Education		
< high school	44	45
High school	38	39
> high school	16	16
Marital status		
Single	21	21
Married	45	46
Separated	8	8
Divorced	10	10
Widowed	14	14
Living situation		
Alone	39	40
With partner	22	22
With partner and children	22	22
With family	12	12
Nursing home	3	3
Level of amputation		
Unilateral transtibial	47	48
Unilateral transfemoral	43	44

Bilateral (including asymmetric levels)	8	8
Cause of amputation		
Peripheral vascular disease	52	53
Diabetes	24	25
Cancer	1	1
Accident	8	8
Other*	13	13
Presence of co-morbidities		
Yes	79	81
No	19	19
Residual limb pain		
Yes	30	31
No	68	69
Phantom limb pain		
Yes	76	78
No	22	22

Variable	Mean ± *SD*	Range
Age (years)	62.59 ± 13.20	25-89
Time since amputation (weeks)	30.32 ± 36.97**	6-260
Average pain intensity	2.59 ± 2.00	0-10

* ‘Other’ causes of amputation were categorised post-hoc as either acute or chronic
** Median time since amputation = 20 weeks

Table 2. Descriptive statistics for predictor and outcome variables at each time point

Variable	Possible range	Time 1 (*N* = 98)		Time 2 (*N* = 75)		Time 3 (*N* = 64)		Time 4 (*N* = 53)	
		Mean (*SD*)	Cronbach's α	Mean (*SD*)	Cronbach's α	Mean (*SD*)	Cronbach's α	Mean (*SD*)	Cronbach's α
Predictor variables									
TGP	0-60	33.23 (7.51)	0.81	32.09 (7.98)	0.83	31.79 (8.10)	0.84	31.51 (7.45)	0.81
FGA	0-60	38.88 (5.05)	0.64	37.93 (6.02)	0.72	39.31 (6.16)	0.81	37.34 (6.50)	0.79
Outcome variables									
Positive affect	10-50	35.87 (7.68)	0.83	33.11 (7.89)	0.87	32.73 (8.99)	0.91	31.10 (8.24)	0.88
General adjustment to LLA	1-4	2.99 (0.47)	0.84	3.09 (0.67)	0.94	3.21 (0.56)	0.91	3.18 (0.55)	0.88
Disability	0-100	36.51 (14.06)	0.75	35.37 (18.61)	0.87	32.92 (16.34)	0.82	35.15 (17.64)	0.86

TGP = tenacious goal pursuit; FGA = flexible goal adjustment; LLA = lower limb amputation

Table 3. Estimates of fixed effects and intraclass correlation coefficients (ICC) for multilevel models predicting positive affect.

Parameter	Estimate	*SE*	*p*	ICC
				0.451
Intercept	35.368	0.664	≤ .001	
Time	-1.728	0.353	ns	
TGP	1.951	0.616	≤ .01	
FGA	1.687	0.482	≤ .001	
Time*TGP	0.684	0.337	≤ .05	
Time*co-morbidities (none)	1.771	0.759	≤ .05	

TGP = tenacious goal pursuit; FGA = flexible goal adjustment

Table 4. Estimates of fixed effects and intraclass correlation coefficient (ICC) for multilevel model predicting general adjustment to lower limb amputation.

Parameter	Estimate	*SE*	*p*	ICC
				0.626
Intercept	2.796	0.086	$\leq .001$	
Time	0.084	0.018	$\leq .001$	
FGA	0.212	0.041	$\leq .001$	
Gender (male)	0.210	0.095	$\leq .05$	
Time*FGA	0.046	0.021	$\leq .05$	
Time*weeks since amputation	-0.036	0.013	$\leq .01$	

FGA = flexible goal adjustment

Table 5. Estimates of fixed effects and intraclass correlation coefficient (ICC) for multilevel model predicting self-reported disability.

Parameter	Estimate	*SE*	*p*	ICC
				0.469
Intercept	37.667	1.420	≤ .001	
Time	6.717	2.356	≤ .01	
FGA	-5.038	0.944	≤ .001	
Phantom limb pain (not present)	-5.804	2.089	≤ .01	
Time*TGP	-1.501	0.601	≤ .05	
Time*level of amputation (unilateral transtibial)	-9.034	2.514	≤ .001	
Time*level of amputation (unilateral transfemoral)	-8.350	2.519	≤ .001	

TGP = tenacious goal pursuit; FGA = flexible goal adjustment

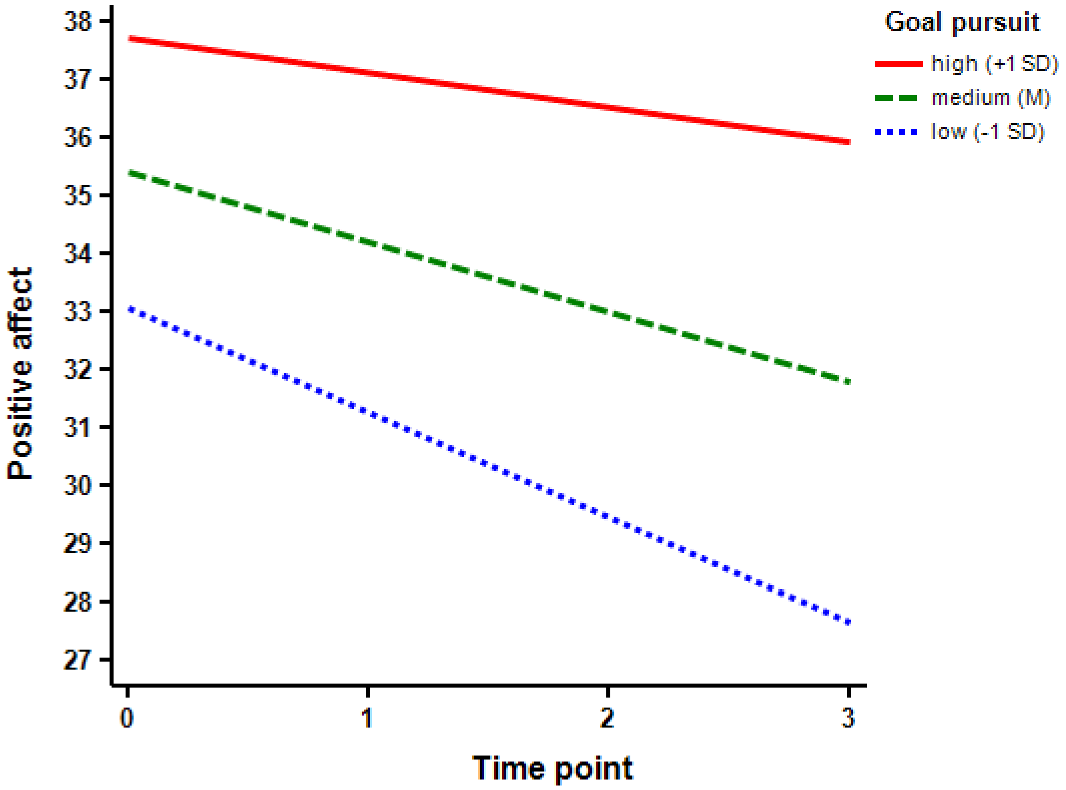

Figure 1. Plot of interaction between time and goal pursuit for positive affect.

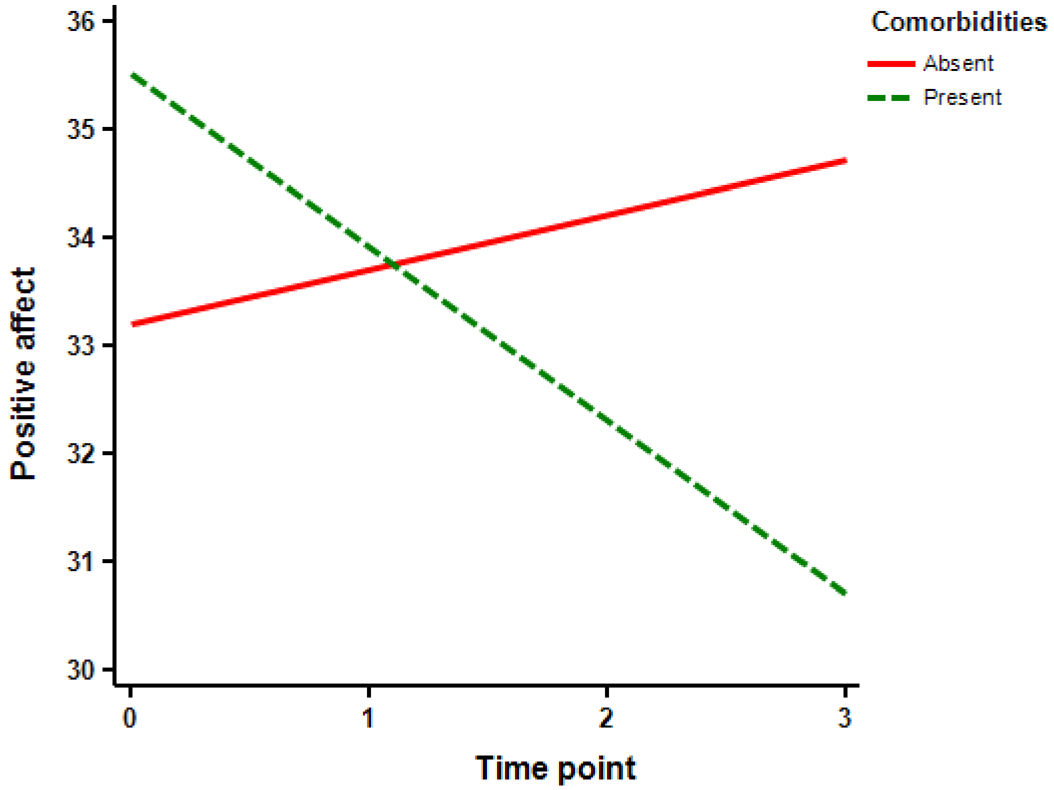

Figure 2. Plot of interaction between time and presence of co-morbidities for positive affect.

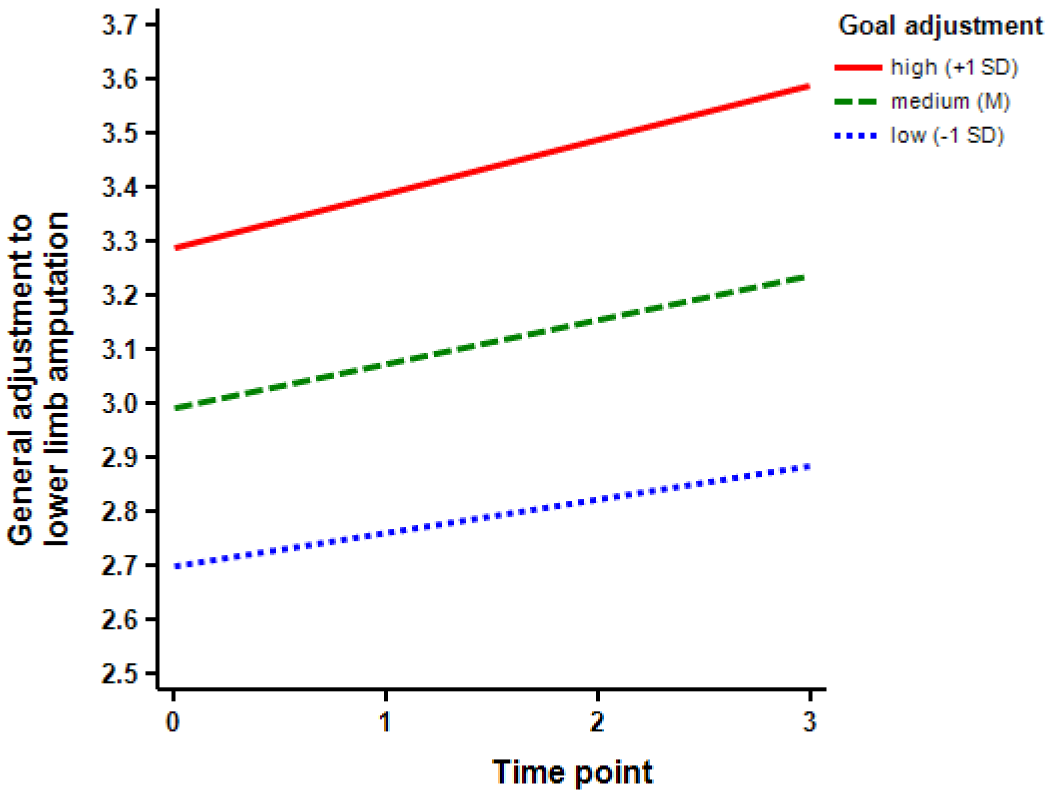

Figure 3. Plot of interaction between time and goal adjustment for general adjustment to lower limb amputation.

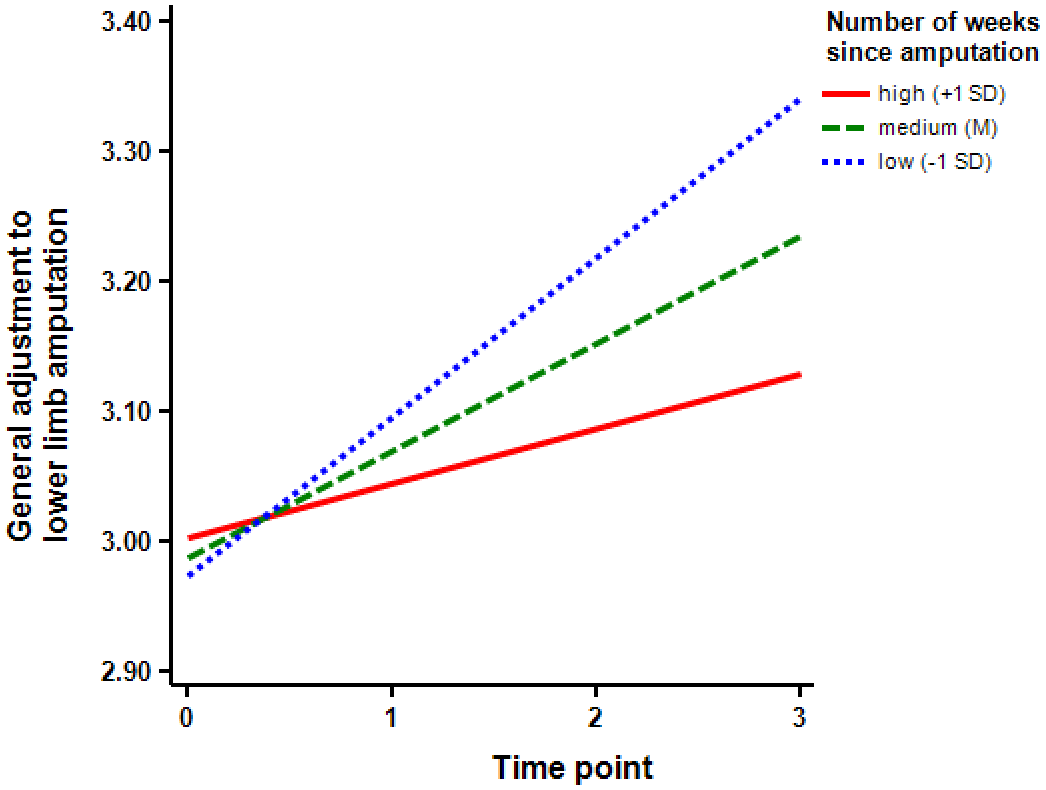

Figure 4. Plot of interaction between time and number of weeks since amputation for general adjustment to lower limb amputation.

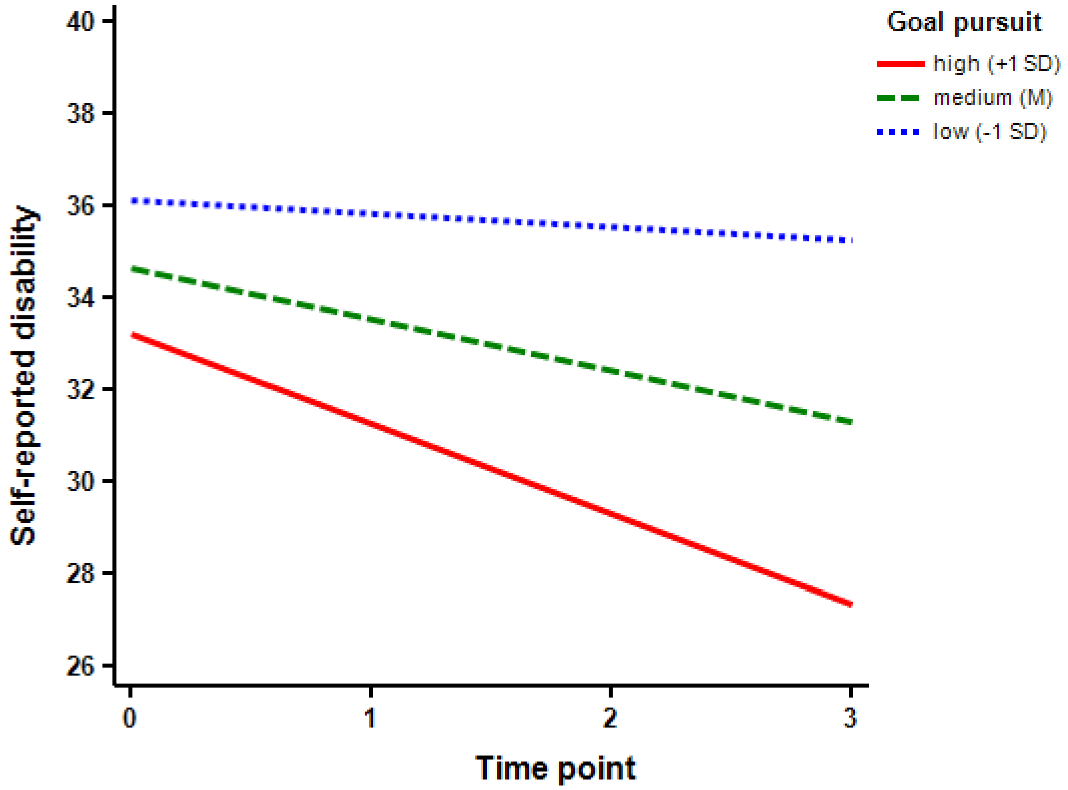

Figure 5. Plot of interaction between time and goal pursuit for self-reported disability.

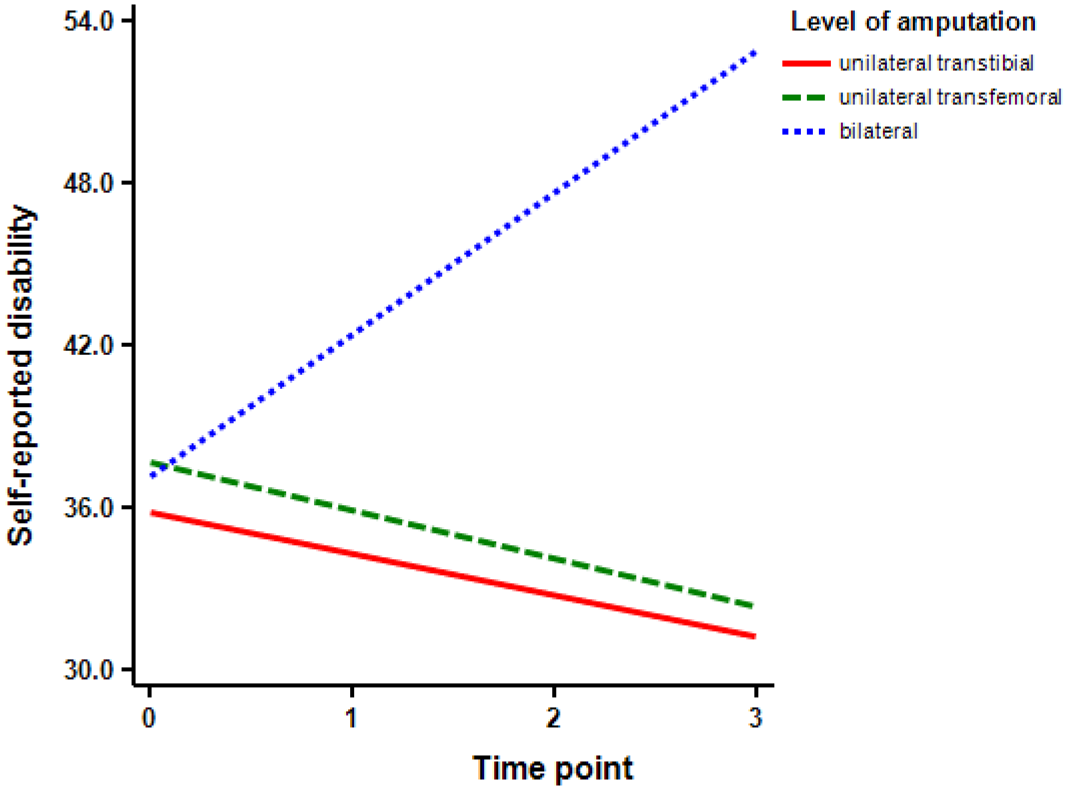

Figure 6. Plot of interaction between time and level of amputation for self-reported disability.