

Ineffective Cognitive Habits and Consequent Psychological Impediments: A Qualitative Analysis of Post Imagery Self Report among Weight lifters.

Jolly Roy ^{1, +}, Nurul Azuar Hamzah ², Garry Kuan ²

¹ Sports Psychology Centre, National Sports Institute of Malaysia, Bukit Jalil, Kuala Lumpur, 57000

² Universiti Sains Malaysia

(Received October 26, 2009, accepted March 21, 2010)

Abstract. This study examines the post imagery self report transcripts from a three week interventions among weightlifters (n=9). The transcripts were qualitatively analyzed to identify the ineffective cognitive habits (psychological impediments). From 54 self report transcripts, statements (n=61) which focused on psychological impediments were considered as raw data. The self report texts were content analyzed and grouped into themes to induct general dimensions. Results indicate four general dimensions of psychological impediments viz: 'physical demand', 'psychological demand', 'underperformance' and 'perceived self worth'. 'Physical demand' and 'psychological demand' emerged as the prominent dimensions causing psychological impediments for high level performance.

Key words: imagery, self worth, underperformance

Controlling an individual's thoughts and feelings necessitates realistic and honest self awareness. The core questions which is addressed here is the cognitive habits of the athletes during imagery. In other words, what ineffective cognitive habits impede the athlete from achieving their full potential?

Many weightlifters who participate in competitive sports usually practice the mental skill to deal with the pressure situations in the competition. One of the most widely used interventions is mental imagery. Understanding the ineffective cognitive habit that hinder successful execution of a task is critical for any imagery intervention program. The awareness enables practitioners to suggest appropriate theme for imagery. Athletes frequently experience mental episodes of how they would perform and very often are successful in generating detailed and precise images. Mental imagery often engages in creating and recreating different sensory experiences that appear to the athletes imagining the situations similar to the actual events [1]. It is expected that the images should be positive, to enhance the confidence of the athletes. In contrast, athletes often remember negative experiences from the past, or create negative images from current situations.

Research indicates that elite athletes, their coaches, and practitioners use imagery training more than any other interventions [2,3,4]. Since 1970, when imagery was first examined, research conducted in sport context and systematic use of imagery has unraveled the beneficial effects in performance enhancement. However, studies by Wolfolk et.al [5] found that golfers who were instructed to use negative imagery produced inferior performances. Negative and suppressive images have been found to be detrimental to performance [6,7]. Eradicating negative imagery is not an easy task and requires time and great effort from the athletes. Research on how imagery works, has been limited and challenging because imagery is an internal thought process that cannot be measured directly [8]. We believe that it is more feasible to examine idiosyncratic imagery experiences which hamper performance by self report measures. Gaps in the research literature exist on wide ranges of personal and contextual factors and frequent occurrences of negative imagery. Few studies have examined the post imagery self reports of the weightlifters to identify the psychological impediments that hamper successful performance. Thus, this study examines the informational characteristics of post imagery self report of the weightlifters. Self report measures are important because athletes consciously state the changes in sensations, perceptions, thoughts feelings, or experiences. It

⁺ Corresponding author. Tel: +6 03 8992 9966. www.isn.gov.my
E-mail address: jolroy@hotmail.com

becomes easier for a sport psychologist to understand the hidden concerns of an athlete and relate better to his/her feelings while adopting intervention strategies.

1. Method

1.1. Participants

A sample of nine weightlifters volunteered to participate in the study. The athletes' age ranged from 16 years to 18 years (mean=17, SD=.70). The athletes trained six days per week, with 1-2 session each day. All participants had minimum representation at state level competitions. The participants involved in the study were on regular psychological skill training program. The participants profile matched with one another in terms of their age, competitive level, and socio cultural background.

1.2. Procedure

The athletes were briefed about imagery training explaining the need to create images in the mind about the sport. A few practice trials were given to the athletes to create images, and hold the images. The imagery sessions were designed to suit the athlete's physical training component. The imagery session were held for 10-15 minutes, over a period of three weeks, with two sessions per week, making a total of six sessions. Imagery training was conducted in the quiet atmosphere in the psychology laboratory.

The athletes provided individual experiences of each session in their self report transcripts. The self report texts were used to gain insight into athletes' perceptions of sources of psychological impediments. After each imagery training session, nine self report transcripts were generated, making a total of 54 transcripts at the end of six training sessions. Athletes were encouraged to express their individual experiences and concerns, which surfaced during imagery in their self report. This was done to facilitate deeper insight into athletes' cognitive habits.. Every athlete was requested to record the subjective experiences with honesty and without any inhibitions.

1.3. Data Analysis

Three researchers examined independently the self report transcripts generated by the athletes .The data was carefully read, and all the statements relating to the research question were identified .Consensus validation was sought on raw data themes. The meaning units were collated and a final version was developed and forwarded to the respective athletes to ensure that they accurately represented the experiences and feelings communicated in the self reports. A total of 103 responses were identified from the self report transcripts, out of which 61 responses were identified as meaning units. Each meaning unit (n=61) was tagged with appropriate label code. The self report transcripts were then inductively content analyzed by three researchers using the procedures suggested by Scanlan et.al [9].Individual statements of the athletes were organized into categories representing similar theme. The similar themes were then structured together to induct first order and second order themes respectively, until the data could no longer be grouped into themes. The highest order themes in each category were labeled "general dimension".

2. Results

The sources of psychological impediments focused on four major dimensions viz: Physical demand (*injury, physical condition*); Psychological demand (*competition anxiety, fear of failure, lack of confidence and lack of attention focus*); Underperformance (*technique*) and Perceived self worth (*expectation /satisfaction*).

2.1. Physical demand

Physical demand (Appendix-Fig.1) was the most frequently reported source of psychological impediment(37.7%). 89% of weightlifters mentioned 'physical demand' as psychological impediment(Table 1). The first order theme emerged as 'Injury' (69.5%) and 'physical strength' (30.4 %) leading to second order theme 'physical condition'. The general dimension of 'physical demand' was inducted from the above themes Examples of the statements are "*I am experiencing pain in my knee while doing imagery*" (injury); and "*I feel there is no strength*" (physical condition).

Table 1: Physical Demands - General dimensions, number and percentage of athletes' citing, raw data themes, and response frequencies.

General dimension	Statement Serial no.	Athlete	Statement (Total =23)	Statement Citing	Raw data Total(61)	% of Res freq.
Physical Demands		89%			16+7=23	37.7
<i>Injury related</i>			16	69.5 %	16	26.22
- Problem with my thigh	1	A ₁	1	4.34	1	1.63
- Feeling pain	4	A ₁	1	4.34	1	1.63
- Injury on the wrist	8,14,15	A ₂ , A ₂ , A ₂	(1+1+1)	13.04	3	4.91
- Injury on the hip	9,29	A ₂ A ₄	2	8.69	2	3.27
- Knee pain	10	A ₂	1	4.34	1	1.63
- Pain in the leg	11	A ₂	1	4.34	1	1.63
- Back pain	13,24,26,60	A ₂ , A ₃ , A ₃ , A ₉	1+(1+1)+1	17.39	4	6.55
- Pain in the arm	31,32,47	A ₄ , A ₄ , A ₆	(1+1)+1	13.04	3	4.91
<i>Physical Strength/condition</i>			7	30.4 %	7	11.47
- Feel feverish	7	A ₁	1	4.34	1	1.63
- Feel loose	17,20	A ₃ , A ₃	(1+1)	8.69	2	3.27
- Feel there is no strength	21	A ₃	1	4.34	1	1.63
- Feel no strength in the thigh	22	A ₃	1	4.34	1	1.63
- Feel lethargic	51	A ₇	1	4.34	1	1.63
- No proper warm up	55	A ₈	1	4.34	1	1.63

2.2. Psychological demand

Table 2: Psychological Demands - General dimensions, number and percentage of athletes' citing, raw data themes, and response frequencies.

General dimension	Statement number	Athlete	Statement (No:=21)	Statement Citing	Raw data Total(61)	% of Res freq.
Psychological Demands		88.8%			21	34.4
<i>Competitive Anxiety:</i>			6	28.57%	6	9.8
- Feel nervous	18	A ₃	1	4.76	1	1.63
- Scared to lift	33,38,39,45	A ₅ , A ₅ , A ₆ , A ₆	(1+1),(1+1)	19.00	4	6.55
- Feel heaviness	37	A ₅	1	4.76	1	1.63
<i>Fear of Failure:</i>			3	14.29%	3	4.9
- I dropped the weight	41,54	A ₆ , A ₈	2	9.52	2	3.27
- I lost the competition	43	A ₆	1	4.76	1	1.63
<i>Lack of Confidence:</i>			7	33.33%	7	11.47
- Fear of getting injured	6	A ₁	1	4.76	1	1.63
- Lack of confidence	16,25,34,35, 40,52	A ₃ , A ₃ , A ₅ , A ₅ A ₆ , A ₇	(1+1),(1+1),2	26.57	6	9.83
<i>Lack of Attention Focus</i>			5	23.81%	5	8.19
- Distraction of mind	36,42	A ₅ , A ₆	2	9.52	2	3.27
- I cannot concentrate	44	A ₆	1	4.76	1	1.63
- No attention control	46	A ₆	1	4.76	1	1.63
- Cannot focus	57	A ₈	1	4.76	1	1.63

Psychological demand (34.4%) was reported as a source of psychological impediment. which followed

the physical demand (Appendix -Fig. 2). 89% of athletes mentioned ‘psychological demand’ of the sport to be perceived as a hindering factor. The first order theme emerged as ‘competition anxiety’ (28.57%), ‘fear of failure’ (14.29 %) ‘lack of confidence’ (33.33%) and ‘lack of attention focus’ (23.81%) leading to second order theme ‘performance related stress’(Table 2). The general dimension of ‘psychological demand’ was inducted from the above themes Examples of the statements are “*I am nervous*” (Competition anxiety); “*I dropped the weight*” (fear of failure) “*I don’t feel confident*” (Lack of confidence); and “*I feel distracted*” (lack of attention control).

2.3. Underperformance

Under performance (22.9%) was another reported source of psychological impediment (Table 3). 67% of athletes mentioned ‘sport demand’ as psychological impediment. This dimension accounted for 22.9% of the total response frequencies. This dimension was derived from the first order theme ‘Technique demand’ (100%) which was further abstracted to the theme ‘sport demand’. The general dimension of ‘underperformance’ (Appendix -Fig. 3) was inducted from the above themes Examples of the statements are “*I find it difficult to get up after squat*” and “*I cannot execute the jerk*”.

Table 3: Under Performance- General dimensions, number and percentage of athletes’ citing, raw data themes, and response frequencies

General dimension	Statement number	Athlete	Statement (No:=14)	Statement Citing	Raw data Total(61)	% of Res freq.
Under Performance		66.6%			14	22.9
<i>Sport demand</i>			14	100%	14	22.9
- Incomplete pull	2	A ₁	1	7.14	1	1.63
- Difficult to get up after squat	3,19	A ₁ , A ₃	2	14.3	2	3.27
- Wrong technique	5,48,49,53	A ₁ , A ₆ , A ₆ ,A ₈	1+(1+1)+1	28.6	4	6.55
- Low pull	12	A ₂	1	7.14	1	1.63
- Cannot pull	23,27,30	A ₃ , A ₃ , A ₄	(1+1)+1	21.4	3	4.91
- Pull not strong	58	A ₉	1	7.14	1	1.63
- Could not execute the jerk	59	A ₉	1	7.14	1	1.63
- Could not complete the pull	61	A ₉	1	7.14	1	1.63

2.4. Perceived self worth

Perceived self worth (4.91%) was the fourth reported source of psychological impediment (Appendix - Fig. 4). 33% of the athletes reported psychological factors as impediments (Table 4). This dimension accounted for 4.91% of total response frequencies. This dimension was derived from the first order theme ‘expectation and satisfaction’ (100%) which was further abstracted to the theme ‘self referenced target’. The general dimension of ‘perceived self worth was inducted from the above themes .Examples of the statements are “*I feel embarrassed of lifting less weight*” and “*I am not satisfied with my performance*”.

Table 4: Perceived Self Worth - General dimensions, number and percentage of athletes’ citing, raw data themes, and response frequencies.

General dimension	Statement number	Athlete	Statement (No:=3)	Statement Citing	Raw data Total(61)	% of Res freq.
Perceived Self Worth		37.5%			3	4.91
<i>Expectation & Satisfaction</i>			3	100%	3	4.91
- Feel embarrassed of lifting less weight	28	A ₃	1	33.3	1	1.63
- Not satisfied with performance	50, 56	A ₇ , A ₈	2	66.7	2	3.27

3. Discussion

The study aimed to identify the informational characteristics of post imagery self report transcripts. The qualitative results provided rich insights into athletes' subjective experiences during imagery. The results show many commonalities of experiences. The most often mentioned sources of psychological impediments focused on physical demand (*injury, physical condition*); psychological demand (*competition anxiety, fear of failure, lack of confidence and lack of attention focus*); expectation /satisfaction (*perceived self worth*); underperformance (*technique*). Out of this, 'physical' and 'psychological' demands required for the task execution, were most frequently reported sources of impediments.

In physical demand dimension, thoughts on injury and physical strength were dominant. Experiences of pain and injury have been reported by 70% of the athletes. Pain, mental block and fear would impact significantly in challenges facing weightlifters. If adequate coping mechanisms are not developed by employing appropriate interventions, the athlete is more likely to lose equilibrium resulting in decreased performance.

Among the psychological demands, many of the lower order themes replicated those reported in other studies. For example, themes related to performance that had been previously noted, included self doubts [10, 11], concerns about competition [9,11] pressure to perform [12] symptoms of anxiety [10,11,13]. Fear of failure, and lack of attention control were associated with competition concerns and pressure to perform. The study on the perceived sources of competitive stress among Korean athletes reported seven general dimensions of stress source [14]. Two of the dimensions in this study bear similarity to the stress sources of Korean national athlete: 'physical' and 'psychological' dimensions. Other dimension like 'perceived self worth' and 'sport demand' (technique) which emerged in this analysis, are also critical in performance, as weightlifting is a technique oriented sport.

Additional source of themes from the self report transcripts indicated task related technical issues and sport demand. Underperformance emerged as a major dimension in the imagery thoughts. This was on similar lines with studies conducted in track and field athletes [15]. The individual nature of the sport might be a significant contributing factor.

The dimension of "perceived self worth" emerged as one of the key concerns. The themes indicated concerns about embarrassment and fear of public humiliation resulting from unsatisfactory performance. Although not prominent, a study conducted on UK track and field athletes has reported social evaluation and self presentation concerns as a source of strain [15]. One of the possible reason why perceived self worth emerged as a major domain could be explained by understanding the nature of the weightlifting as a competitive sport. Weightlifters compete individually in front of the audience, which attracts social evaluation based on competition outcome. Given that society values success in terms of "win" and "loss", the dimension of perceived self worth is as a source of impediment is justified. Positive imagery can be a great source of self efficacy.[16].

A number of psychological impediments identified in the self report transcripts indicate an urgent need to deal with the underlying sources of ineffective cognitive habits among weightlifters. According to Munroe et al[17] athletes can use imagery for a number of functions in different situation where they lost control of emotions. Therefore being aware of individual impediments would help weightlifters to deal effectively with adversities and maintain optimal performance. Studies in the emotion domain suggest that athlete's subjective emotional experiences are critical for mobilizing their psychological resources [18]. The individual transcripts display the idiosyncratic nature of the weightlifters' subjective experiences. Qualitative analysis of this kind enables the psychologist to target the intervention to meet specific performance requirement. An insight into ineffective cognitive habits that hinders the performance helps weightlifters to be better prepared to cope with difficult situations. The experiences of an athlete's reality situations of competition stress are revealed through imagery self report. Thus practioners can identify unique source of impediments and provide appropriate guidelines for correction. Imagery is a skill that needs to be practiced to be effective and the weightlifters could be trained to transfer this ability to real-life situation.

The results of this study should be viewed as the trends rather than definite directions. Nevertheless, the sources of perceived psychological impediments give insight into the directions in which a coach or a psychologist can provide specific instruction during intervention.

Limitation. The strength of the study is that it adhered to immediate self report provided by the weightlifters, unfolding the psychological impediments. However, the limitation is that while the descriptive nature of the self report provided greater insights, the mechanism of which factors impact them most is not understood. Secondly, the sample size is limited to the current state players who were undergoing the imagery training

program. Thirdly, no specific targets were set for the duration and number of session. Thus analysis was done from the self report transcripts of six sessions. Finally, the results of this study are confined to one game, and one state. Therefore replication of this type of study is needed, with greater sample, including all types of sports, to enhance the validity of the findings.

4. Conclusions

In summary, the study is an attempt to gain a comprehensive insight into ineffective cognitive habits which generates psychological impediments among weightlifters. The findings add to the body of research on subjective experiences of athletes. The findings of the study suggests that the subjective experiences can be categorized under the major domain (1) competitive (physical demand, psychological demand and underperformance) and (2) personal (perceived self worth).

5. References

- [1] R.M. Suinn. *Imagery In handbook of research on sport psychology*. ed R.N Singer, M. Murphy, and L.K. Tennant. New York: McMillan. 1993, pp. 492-510.
- [2] C. De Franceso and K.L. Burke. Performance enhancement strategies used in a professional tennis tournament. *International journal of sport psychology*. 1997, **28**: 185-195.
- [3] D. Gould, V. Tammien, S. Murphy, J. May. An examination of the U.S Olympic sport psychology consultants and the services they provide. *Sport Psychologist*. 1989, **3**: 300-312.
- [4] C.R. Hall, and W.M. Rodgers. Enhancing coaching effectiveness in figure skating through a mental-skills training program. *Sport Psychologist*. 1989, **4**: 1-10.
- [5] R.L. Woolfolk, W. Parrish, and S.M. Murphy. The effects of positive and negative imagery on motor skill performance. *Cognitive Therapy and Research*. 1985, **9**: 335-341.
- [6] T. Morris, M. Spittle, A.P. Watt. Imagery in Sport. *Human kinetics Champaign, IL*. 2005.
- [7] J.A. Taylor, and D.F. Shaw. The effects of outcome imagery on golf putting performance. *Journal of Sport Sciences*. 2002, **20**: 607-613.
- [8] S.L. Beilock, J.A. Afremow, A.L. Rabe and T.H. Carr. "Don't Miss!" the debilitating effects of suppressive imagery on golf putting performance. *Journal of sport and Exercise Psychology*. 2001, **23**: 200-221.
- [9] D. Gould, S. Jackson, and L. Finch. Sources of stress in national champion figure skaters. *Journal of Sport and Exercise Psychology*. 1993, **15**: 134-159.
- [10] B. James, and D. Collins. Self- presentational sources of competitive stress during performance. *Journal of Sport and Exercise Psychology*. 1997, **17**: 17-35.
- [11] T.K. Scanlan, G.L. Stein, and K. Ravizza. An in depth study of former elite figure skaters: Sources of stress. *Journal of Sport and Exercise Psychology*. 1991, **13**: 103-120.
- [12] S. Hanton, D. Fletcher, and G. Coughlan. Stress in elite sport performers: a comparative study of competitive and organizational stressors. *Journal of Sport Sciences*. 2005, **23**: 1129-1141.
- [13] N.L. Holt, and J.M. Hogg. Perceptions of stress and coping during preparations for the 1999 women's soccer world cup finals. *The Sport Psychologist*. 1991, **16**: 251-271.
- [14] J.K. Park. Coping strategies used by Korean national athletes. *The Sport Psychologist*. 2000, **14**(1): 63 -80.
- [15] J. Mc Kay, A.G. Niven, D. Lavallee, A. White. Sources of strain among Elite UK track athletes. *The Sport Psychologist*. 2008, **22**: 143-163.
- [16] A. Bandura. *Social foundation of thought and actions: A social cognitive theory*. Englewood cliffs. NJ: Prentice Hall. 1986.
- [17] K.J. Munroe, P. Giacobbi, C.R. Hall, and R.S. Weinberg. The 4 W's of imagery use: Where, when, why and what. *The Sport Psychologist*. 2000, **14**: 119-137.
- [18] Y.L. Hanin. *Emotions in sport*. Champaign. IL: Human Kinetics, 2000.

6. Appendix

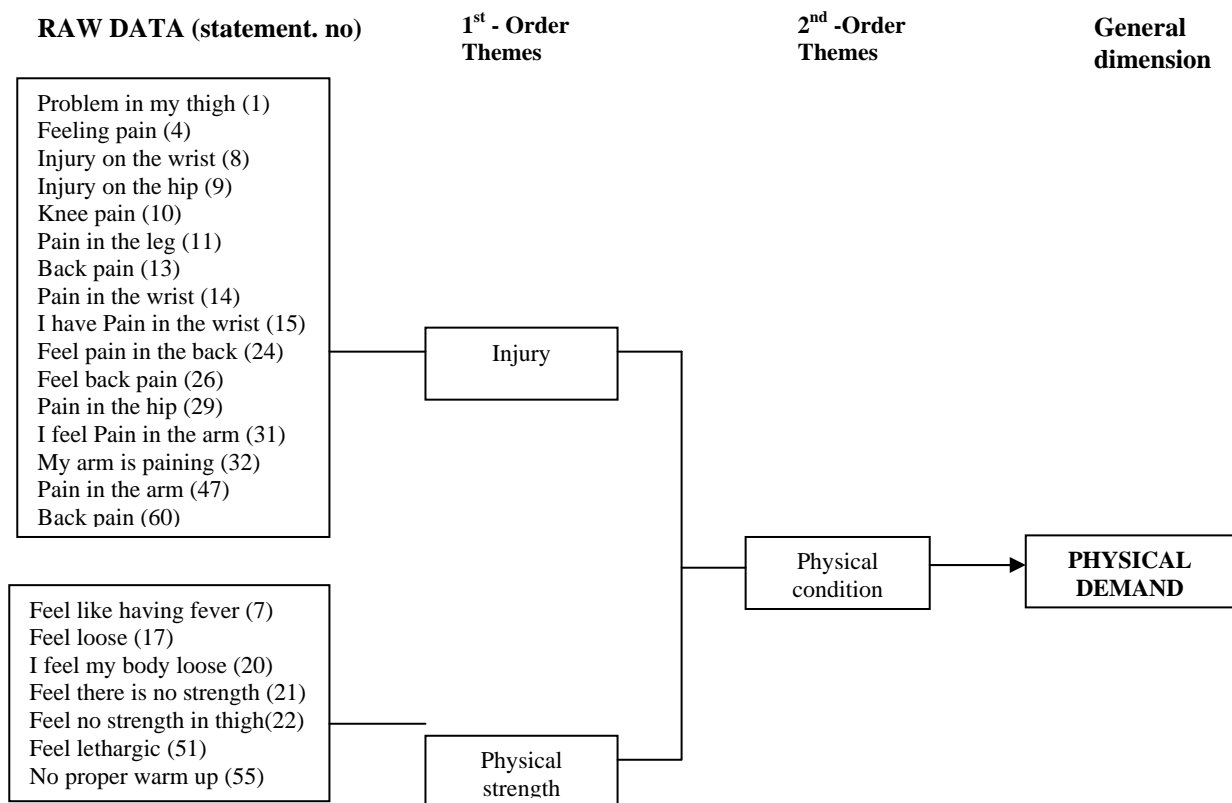


Fig. 1: Physical demand

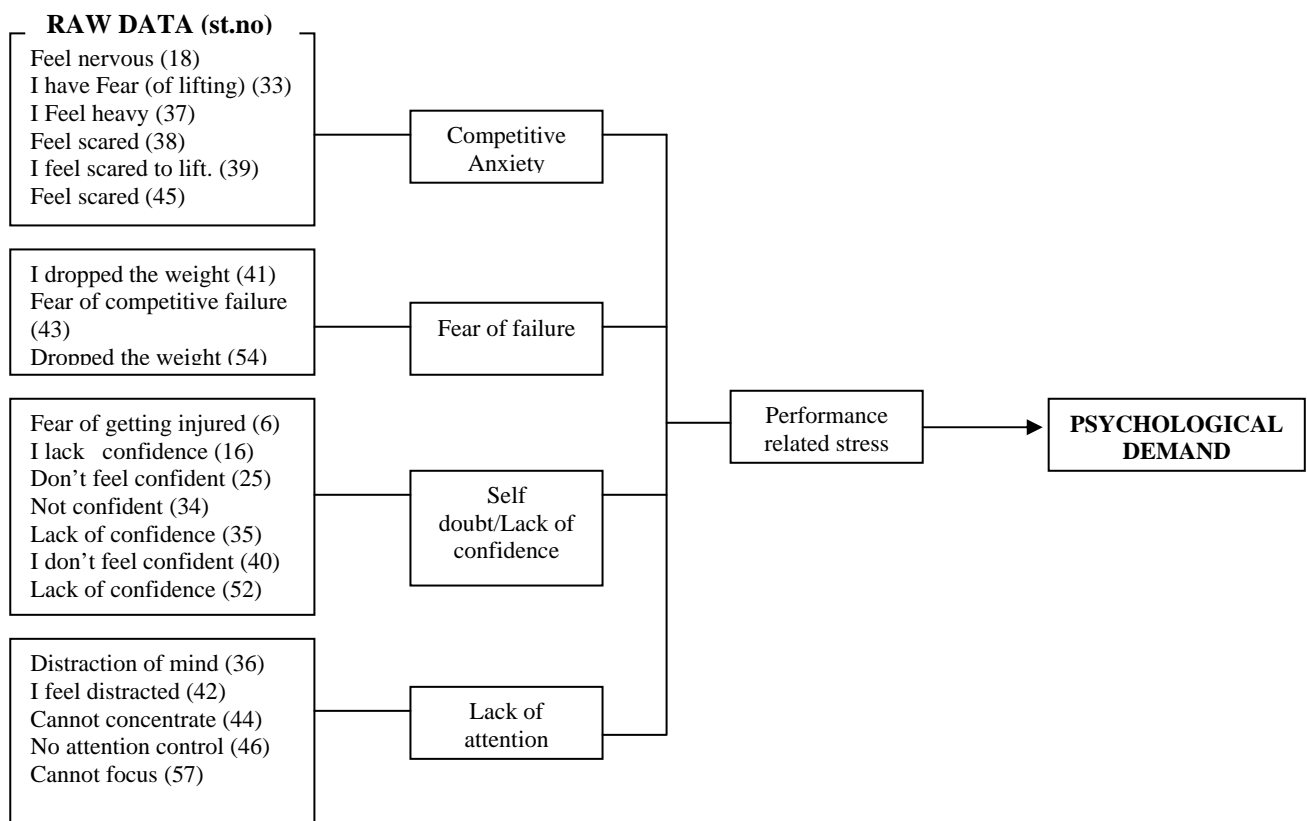


Fig. 2: Psychological demand

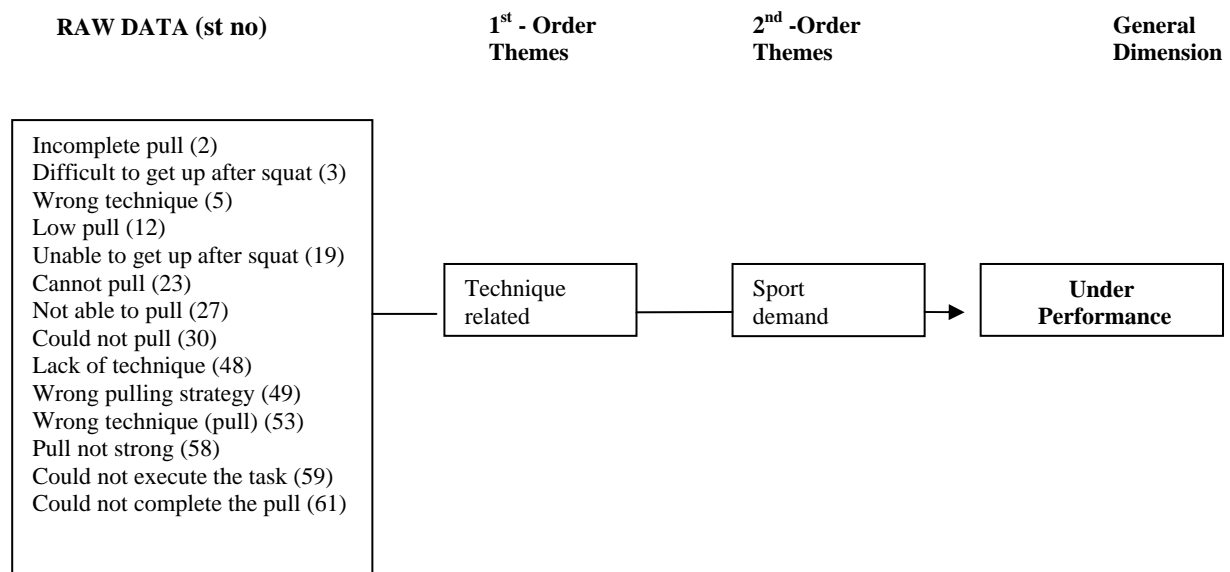


Fig. 3 : Under Performance

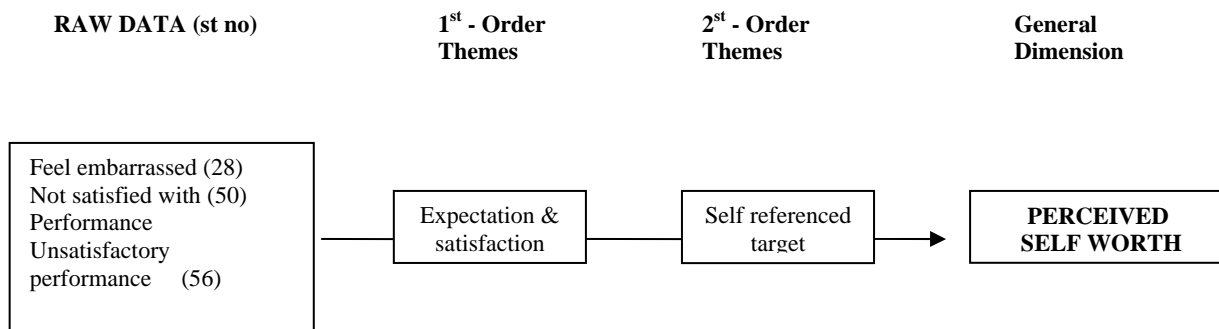


Fig. 4: Perceived self worth